

A Study on Individual Investment Decisions, Risk Tolerance and Influencing Factors in Stock Market

A
Thesis

Submitted to



For the award of
DOCTOR OF PHILOSOPHY (Ph.D)
in
COMMERCE

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PUNJAB
2018

DECLARATION

I, Saloni Raheja, student of Ph. D (Commerce) hereby declare that the thesis entitled “**A Study on Individual Investment Decisions, Risk Tolerance and Influencing Factors in Stock Market**” is genuine work done originally by me and has not published or submitted elsewhere for the requirement of a degree programme. Any literature, data or work done by others and cited within this thesis has been given due acknowledgement and listed in the reference section.

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TO WHOM SOEVER IT MAY CONCERN

I certify that Saloni Raheja has prepared her thesis entitled “A Study on Individual Investment Decisions, Risk Tolerance and Influencing Factors in Stock Market” under my guidance and supervision. This thesis is being submitted by her in the partial fulfilment of the requirements for the award of the Doctor of Philosophy in Commerce from Lovely Professional University, Phagwara.

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ACKNOWLEDGEMENT

“If the beginning is good, the end must be perfect”

It is imperative that research work required a lot of effort. It required high concentration and the whole hearted support without which it would not have been possible the task at hand. I therefore express my sincere thanks and gratitude to all the people who have associated with the Thesis.

Firstly, I thank God, for sailing me through all the rough and tough times during this project. You are the one who let me finish my degree. I will keep on trusting You always. I would like to express my gratitude to my advisor, guide and mentor, Dr. Babli Dhiman, Associate Professor, Mittal School of Management. She has taught me, how research is to be done. I appreciate all her contributions of time and ideas to make my Ph.D experience productive and stimulating. The joy and enthusiasm she has for her research was contagious and motivational for me, even during tough times in the Ph.D pursuit. I would like to thank her for encouraging me to grow as a research scholar. Her advice on research as well as on my career has been invaluable.

I am grateful to the other faculty members for their constructive criticism and suggestions. The accomplishment of this project otherwise would have been painstaking endeavor, for lack of staunch and sincere support of the Mittal School of Business, Lovely Professional University. I am thankful to Dr. Sandeep Vij and Dr. Girish Taneja of DAV University, Jalandhar for helping me a lot in statistical aspect of the research.

Words cannot express how grateful I am to Jyotishna Jairath for all sacrifices she made for me to help me, during the completion of my thesis. Her encouragement was the source of strength for me to get over all the difficulties I faced during my Ph.D course. I would like to thank my parents and friends for their motivation and encouragement and whole hearted support. Lastly, I thank all those, who have directly or indirectly, helped me in this project.

Saloni Raheja

Date:

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ABSTRACT

Investment is the process of sacrificing something now for the prospect of gaining something later. Investment aims at multiplication of money at higher or lower rates depending upon whether it is a long term or short term investment and whether it is risky or risk free investments. There are various investment avenues available in the market such as shares, debentures, bank deposits, mutual funds, national saving certificates, life insurance and many more. The people have to choose proper investment avenue depending upon his need, risk preference and return expected. The plenty of investment avenues available for the investors make their decision making process more critical and complex. There are number of factors which influence the people to make their investment decisions. The different investors invest in different type of investment avenues. This thesis is all about investment decisions and risk tolerance of the investors who invest in stock market. The primary purpose of this study is to know about the investment decisions and risk tolerance of the investors. Chapter I defines different aspects of risk tolerance and investment decisions of the investors. Chapter II presents the review of literature and provides the background of the topic. Chapter III has been dedicated to the methodology of the study. It outlines the research design and provides description of the process followed for the development of the research instrument. Sample size, techniques used for data analysis and limitations of the present study has been presented in this chapter. Chapter IV presents the investment strategies used by the investors while investing in stock market. Chapter V presents the relation of Demographic Attributes, Personality Traits, Emotional Intelligence and Behavioral Biases with Risk Tolerance of Investors. Chapter VI presents the relationship between Risk Tolerance and Investment Decisions of Investors. Chapter VII presents the relation of Demographic Attributes, Personality Traits, Emotional Intelligence and Behavioral Biases with the Investment Decisions. It also presents the mediating role of risk tolerance in Demographic Attributes, Personality Traits, Emotional Intelligence and Behavioral Biases and Investment Decisions.

The standardised questionnaire had been used to conduct the primary survey. The standardised scale for Big Five Inventory (BFI), the scale for Emotional Intelligence given by Daniel Goleman, the scale for Behavioral biases scale was taken from Chin (2012).

The data was collected from 500 individual investors who invest through LSC Securities Ltd.

Various hypotheses have been framed keeping in mind the objectives of primary research.

H₁: There is significant relation between Investors Demographic Attributes and their Risk Tolerance

H₂: There is significant relation between Investors Personality Traits and their Risk Tolerance

H₃: There is significant relation between Investors Emotional Intelligence and their Risk Tolerance

H₄: There is significant relation between Investors Behavioral Biases and their Risk Tolerance

H₅: There is significant relation between Risk Tolerance and Investment Decisions of the investors

H₆: There is relation between Demographic Attributes and Investment Decisions of Investors

H₇: There is relation between Personality Traits and Investment Decisions of Investors

H₈: There is relation between Emotional Intelligence and Investment Decisions of Investors

H₉: There is relation between Behavioral Biases and Investment Decisions of Investors

H₁₀: The Personality Traits - Investment Decisions relationship is mediated by Risk Tolerance

H₁₁: The Behavioral Biases - Investment Decisions relationship is mediated by Risk Tolerance

H₁₂: The Emotional Intelligence - Investment Decisions relationship is mediated by Risk Tolerance

H₁₃: The Demographic Attributes - Investment Decisions relationship is mediated by Risk Tolerance

The various findings which had been derived from the analysis are given below:

There were more males than females who responded to the questionnaire. There were more married investors who responded to the questionnaire. The investors from age group 31-40 were more in the study who responded to the questionnaire. The investors who had done masters were more in the study than the investors who had done Bachelors, M. Phil or

Doctorate. There were more investors in the study who had income in between ₹ 200001-500000.

The first objective is to study the investment strategies used by the investors. The descriptive statistics and mean score of the investment strategies have been calculated. It has been observed from the study that five most preferred investment strategies as perceived by the respondents are: Buy stock for which good news is expected, Buy stock which is most actively traded, Buy stock which is expected to announce bonus issue and/or stock split, Contrarian effect (buy past losers), Buy stock which has announced good quarterly results. There are certain strategies which are least preferred by the investor while investing in the stock market. These strategies are April effect, Leverage effect, Day of the week effect and Value effect.

The second objective is to study the relation between Personality traits, Demographic Attributes, Emotional Intelligence, Behavioral Biases and Risk Tolerance of the investors. Multiple regression tests have been applied on this objective. It has been found that there is a significant relation between Personality Traits and Risk Tolerance of the investors. There is a significant relation between Emotional Intelligence and Risk Tolerance of the investors. There is a significant relation between Behavioral Biases and Risk Tolerance of the investors. There is no significant relation between Demographic Attributes and Risk Tolerance of the investors. The risk tolerance of the investors does not depend on any of the demographic attributes. There is no difference in the risk tolerance of the investors based on age, gender, marital status, educational qualification and income of the investors. The Behavioral Biases is the most important predictor of risk tolerance of the investors. The in depth study has been done in order to find out which dimension of demographic attributes, Personality traits, Emotional Intelligence and Behavioral Biases are related with Risk Tolerance and which are not related with Risk Tolerance. It has been found that there is no significant relation between any of the demographic attributes and risk tolerance of the investors. It has been found that there is a significant relation between agreeableness, extroversion, openness to experience and risk tolerance. There is no significant relation between conscientiousness, neuroticism and risk tolerance. There is significant relation between self awareness, handling emotions, motivation and risk tolerance. There is no significant relation between empathy, social skills and risk tolerance. There is a significant relation between overconfidence, regret and risk tolerance. There is no significant relation

between conservatism, herding and risk tolerance. The third objective is to study the relation between risk tolerance and investment decisions. The descriptive statistics and Correlation statistics has been used to study this relationship. It reveals that there is significant relation between the investment decisions and risk tolerance of the investors. The investors who take more risk they invest more in stock market and vice versa.

The fourth objective is to study the relation of Demographic Attributes, Personality Traits, Emotional Intelligence and Behavioral Biases with Investment Decisions of Investors. Multiple regression tests have been applied on this objective. It has been found that there is a significant relation between Personality traits and Investment Decisions of the investors. There is a significant relation between Emotional Intelligence and Investment Decisions of the investors. There is no significant relation between Behavioral Biases and Investment Decisions of the investors. There is no significant relation between demographic attributes and Investment Decisions of investors. Emotional intelligence is the most important predictor of investment decisions. The in depth study has been done in order to find out which dimension of demographic attributes, Personality traits, Emotional Intelligence and Behavioral Biases are related with Investment Decisions and which are not related with Investment Decisions. There is a significant relation between agreeableness, extroversion, openness to experience and investment decisions of the investors. There is no significant relation between conscientiousness, neuroticism and investment decisions of the investors. There is relation between self awareness, handling emotions, motivation, empathy, social skills and investment decisions of the investors. There is a significant relation between overconfidence, regret and Investment decisions. There is no significant relation between conservatism, herding and Investment decisions. The emotional intelligence of the investors can better predict the investment decisions of the investors through the mediator (risk tolerance). However, there is relation between the risk tolerance and the investment decisions of the investors and the emotional intelligence and the risk tolerance of the investors. The personality traits of the investors can better predict the investment decisions of the investors through the mediator (risk tolerance). The behavioral biases of the investors can better predict the investment decisions of the investors through the mediator (risk tolerance).

Therefore, the investors are so busy in their life so the portfolio companies should provide assistance and guide to them according to their behavior. Their risk tolerance and their investment decisions do not depend on any of the demographic attributes. The financial

planners, financial managers and financial advisors should focus on the strategies which are mostly used by the investors. The financial advisors should consider the personality traits; emotional intelligence and behavioral biases of the investors in order to perceive the type of investment which best suit these investors.

Chapter-1

INTRODUCTION

Finance is as necessary for life as blood in human body. It is needed everywhere, whether, for personal uses, public uses or corporate uses. The economic development of any country depends upon its financial markets and services. It measures the risk versus profits and produces the results whether the investment is correct or not. Section 1.1 presents behavioral finance. Section 1.2 presents who is an investor. Section 1.3 shows the details about the investment. Section 1.4 shows the investment decisions. Section 1.5 shows the different investment avenues available in the market. Section 1.6 presents the details of personality traits. Section 1.7 presents the details of emotional intelligence. Section 1.8 shows the details of risk tolerance. Section 1.9 shows the details about the stock market. Section 1.10 presents the details about LSC Securities Ltd.

1.1 BEHAVIORAL FINANCE

In traditional finance, each person is rational to maximize the wealth but several times the rationality is influenced by emotions and irrational decisions. The study of behavioral finance focuses on how human beings create and manage their financial assets. Behavioral finance is the psychological and sociological factors which influence the individuals, groups, and entities financial decisions. Behavioral finance is a growing area which deals with the influence of psychology on the behavior of financial practitioners. Behavioral finance is the study of the irrational behavior of the investors.

Behavioral finance is divided into two blocks— cognitive psychology and limits to arbitrage. Cognitive psychology means how the people think about the situation? and limits to arbitrage means making the prediction that in which situation the arbitrage forces are good and in which not. Individual investors' decisions are influenced by various biases. Behavioral bias means a difference in judgment that occurs in specific situations, which sometimes lead to inaccurate judgment, illogical interpretation or irrationality (Imthiyas *et al.*, 2015). The literature on finance shows that the behavioral biases need to be corrected because these biases result in sub-optimal decisions. But biases are actually mapping of the

human mind which enables the people to comprehend their condition and give a feeling of prosperity. Tversky and Kahneman (1974) were the first one who locates the presence of psychological biases in financial decision making under risk. Some examples of behavioral biases are Illusion of control, Regret Aversion, Overconfidence Bias, Self-Control bias, Framing, Representativeness, Anchoring Bias, Hindsight Bias, Loss Aversion Bias, Status Quo Bias, Ambiguity aversion, Cognitive dissonance, and many more (Kahneman and Tversky, 1979; Thaler, 1999; Barber and Odean, 2000; Hilton, 2001; Shefrin and Statman, 2000; Barberis and Thaler, 2003; Szyszka, 2013).

1.1.1 BEHAVIORAL BIASES

The different types of behavioral patterns which come under the cognitive psychology are discussed as follows:

- **Heuristics:** Heuristics are the rule of thumb that helps to take the decisions easily. Heuristics are divided into two – the first one is at the point when the decision is required to be made rapidly and the second is used at the point where there are higher stakes. For example- I preferred to eat maggi than noodles because I like it, this is type 1 and today I prefer to eat noodles than maggi because it is made in a different manner today. Some people adopt the $1/N$ rule just like if there are 3 choices in investment then $1/3$ goes in each.

“Heuristics are simple efficient rules of the thumb which have been proposed to explain how people make decisions, come to judgments and solve problems, typically when facing complex problems or incomplete information. These rules work well under most circumstances, but in certain cases lead to systematic cognitive biases” – Daniel Kahneman (Parikh, 2011).

- **Overconfidence:** Some investors are overconfident that they can foresee the future in a better way. Due to their overconfidence, they take more risks without considering how much return they will get. It may be self-attribution bias and hindsight bias. They become overconfident that they can predict future after getting success in the previous years. Men are more overconfident than women. These are

miscalibration, an illusion of control, better than average effect and excessive optimism. The investor who is dealing in securities has confidence on his own strategies, and then we can say that his decision making is under the influence of overconfidence bias. Overconfident individuals sometimes over estimate their abilities; they act as they have more skills than they actually possess (Yates, 1990). They are prone to depend on their previous successful investing skill and tried to ignore others. Overconfidence is unwarranted faith in one's perceptive reasoning, judgments, and cognitive abilities. Overconfidence can be due to excessive trading in financial markets and also explains the dominance of the active portfolio management, despite the disappointing performance of many actively managed funds.

- **Mental accounting:** It means the capability of the individual to place the certain events into different accounts based on some attributes. According to Richard Thaler, “mental accounting is the set of cognitive operations used by individuals and households to organize evaluate and keep track of financial activities.” The components of mental accounting are account assignment, closure, and evaluation.

- **Framing:** It means that the people will behave in the way as their decision problems are set. In other words, framing means the view of the decision maker towards the problem and their outcomes. The various factors which affect the framing are personal characteristics, the perception of individual towards the problem and presentation mode.

- **Representativeness:** It is one of the groups of heuristics (simple rules governing judgment or decision making) proposed by Amos Tversky and Daniel Kahneman. They defined it as the degree to which, an event is similar to essential characteristics of its parent population and reflect the salient features of the process by which it is generated. This heuristics is an easy computation but judgments made by relying on representativeness often leads to wrong decisions. People overestimate their ability to accurately predict the likelihood of an event & focus on the recent experience. It refers to the people tendency to form judgments based on the stereotype. The investors are more optimistic towards the past winners and

pessimistic towards the past losers and they assume that this trend will also be followed in future. People tend to focus on the recent experience. This is also known as “law of small numbers.”

- **Conservatism:** When there is any change then the individual takes more time to apply those changes in their life. When the changes take place people may under react or overreact to the situation. This is the mentality of people to be conservative or risk-averse and sticks to their prior views and they find newer options to be costly. Anchoring can be a source of frustration in the financial world as investors base their decisions on irrelevant figures and statistics, for example, if some investors invest in the stock of companies who have fallen considerably in a very short span of time, it shows that the investor is anchoring on a recent “high” that the stock has achieved and consequently takes the drop in price as an opportunity to buy the stock at a discount.

- **Disposition effect:** The disposition effect is a situation when the individual mostly evades losses and recognize gains. The people sell those assets whose prices have increased and retain those whose prices have decreased.

- **Herding:** This theory was proposed by W. D. Hamilton and states that individuals attempt to reduce their predation risk by putting other co-species between themselves and predators and such behavior inevitably results in aggregations. Herding is a situation when the individual cannot take their own decisions which lead the people to act in the similar way as the most of the people around them perform. In other words, herding means the people invest in the same investment as they know that many people are investing in this particular type of investment. Hirshleifer *et al.* (1994) analyzed the trading behavior and found that the private information was available to few investors before that information was available to the rest of the investors. Herd behavior is the tendency for an individual to follow the actions, whether rational or irrational, of a larger group. However, individually, most people would not necessarily make the same choice. Herd behavior happens mainly for two reasons. The first reason is the social pressure of conformity as most people are very sociable and have a natural desire to be accepted by the group,

hence, following the group is an ideal way to become a member. The second reason is the common rationale that it is unlikely that such a large group could be wrong.

- **Regret:** A regret theory says that people regret if they make a wrong choice and consider this while making decisions in future. Regret theory states that an individual evaluates his or her expected reactions to a future event or situation. It can also be explained as emotions caused by comparing a given outcome or state of events with the state of a foregone choice. Regret theory was developed by Graham Loomes and Robert Sugden. It is a model of choice under uncertainty and generalizes the minimax regret approach i.e. to minimize the worst case regret. This theory can also be applied to the area of investment in the stock exchange and investors' psychology a stock or mutual fund which has declined or not, actually purchasing the intended security will cause the investor to experience an emotional reaction. An investor may avoid selling stocks that have declined in value in order to avoid the regret of having made a bad investment choice.

Behavioral finance models explain the behavior of investor when the rational models give no adequate explanation. The people select among the different alternatives in a rational way and that they understand the probability distribution of future states (Arrow and DeBreu, 1954). The modern finance believes that markets are very efficient and that the agents discern the probability distribution of market risk in future (Merton, 1969). Behavioral finance is still in the stage of developing and it keeps on using methods and ideas from the different disciplines.

1.2 INVESTOR

An investor is a person who deals with money to invest in different financial products considering the return they will get from that particular investment. The main objective of every investor is regarding the investment which results in maximum return and involves minimum risk. There are various types of investors:

- Regular investor: They take the decision for investment for long term. They invest money when they have surplus money with them and withdraw when they are in need.
- Only Savers: They don't invest in equity because they don't want to take the risk.
- Seasonal traders: They are irregular investors. They show that they are waiting for the right opportunity in order to make descent return in the market.
- Angel Investors: They are informal investors. They provide capital for business start-ups and also help with advice and contacts.
- Business Investors: They make an investment directly or indirectly. They don't hesitate to show off their contacts.
- Risk taker Investors: They are always ready to take the risks and very much confident. They invest in long-term investments.

1.3 INVESTMENT

Investment is the process which includes giving up something at the present with a view to get some profits in future. It is the contribution of funds with the objective of earning further income in future. Investment may be defined as the giving up of the definite present value of money in order to get the future uncertain value. Investment is the increase of money at different higher or lower rates which depends on long-term investment or short-term investment and also on risky investments or risk-free investments.

There are three concepts of investment which are economic, business and financial investment. Economic investment means the investment in the form of purchase of new machines, increase in stocks, amount spent on plant, inventory, and others. Business investment means the amount which is used to start a new business or the amount which is used in the business. Financial investment means the investment in risk-free or risky assets in order to earn some profit in the future. The profit may be in the form of rent, interest, premiums, dividends, and others.

1.4 INVESTMENT DECISIONS

Investment can be made in physical form such as in tangible assets & financial assets. Investment decisions include the investor's judgement, prediction, analyze the process of decision making which covers the psychology of investment, gathering of information, defining and understanding the process, research, and analysis. How much money is invested by the individuals from their savings, the frequency of investment, the financial products in which they invest and the perception of risk shows their investment behavior? The investors have their own particular financial need which is based on their financial goals and the risk. The investors want maximum return on the investment and capital protection. Investment decisions depend on different variables—personal features, emotions (Chitra and Sreedevi, 2011; Young *et al.*, 2012). The investment decisions depend on the behavioral and psychological factors (Chang, 2008; Kourtidis *et al.*, 2011; Weller and Thulin, 2011)

For the present study, investment decisions will include the factors which an investor consider while making an investment in securities.

1.4.1 OBJECTIVES OF INVESTMENT IN SECURITIES

The objectives of investment in securities are given below:

- Income: The first and the foremost objective are to produce income as interest or dividend. The investment should contain reasonable return on investment.
- Capital appreciation: Another objective is capital appreciation. It can be accomplished by conservative growth, aggressive growth, and speculation.
- Forms of return: These are divided into two –cash receipts and the capital gain.
- Safety of funds: Another objective is that the funds should be invested in a secure and safe manner.
- Risk: Another objective is the risk. The investor who desires more return is ready to take more risk.
- Liquidity: Another objective is liquidity. The investors should prefer those investments which are liquid in nature. These can easily be sold in the market.

- Tax considerations: Another objective is provisions of capital gain tax, income tax, gift tax and others so that tax burden should be minimized.

1.4.2 CLASSIFICATION OF INVESTMENTS

The various types of investments are as follows:

- Physical investments: These investments are the investments in tangible assets such as airplanes, buildings, machinery, gold, and others.
- Financial investments: These investments are the investments which are used in order to produce goods or in the formation of assets.
- Marketable and nonmarketable investments: The marketable investments are the investments which are easily converted into cash. Nonmarketable investments are the investments which cannot be converted into cash very easily.
- Transferable and non-transferable investments: The avenues which can be transferred to the others are transferable investments. The avenues which cannot be transferred to the others are non-transferable investments.

1.4.3 FEATURES OF AN IDEAL INVESTMENT PROGRAMME

The investments should contain the following features:

- Safety: The investor should consider the safety of investment while deciding the type of investment. The investor should diversify their investment in order to reduce the risks.
- Liquidity: The investor should consider only that investment which can easily be converted into cash.
- Regularity and stability of income: Another feature of investment program is the regularity of income.
- Stability of purchasing power: The investor should balance their investment program so that there should not be instability in purchasing power.
- Capital appreciation: Another feature is capital appreciation. The investor should forecast the avenues which may appreciate in future.

- Tax benefits: Another feature is tax benefits. The investor should select his investment in such a way that the tax liability should be minimum. The returns which are after tax are the real returns.
- Legality: The investor should be aware of the legal provisions related to the investment. The investor should consider the legal aspects of investment.
- Concealability: The investor should invest in such an investment avenue which can be concealed and income received is not shown.
- Tangibility: Most of the investor prefers to invest in tangible assets such as building, plant, and others.

1.4.4 PROCESS OF INVESTMENT DECISIONS

The process of investment is as follows:

- Investment policy: In this, the various investment avenues are taken and their features are observed. The main purpose is to decide which avenue should be taken in the portfolio. It requires:
 - i. To determine the amount to be invested.
 - ii. To determine the objective of investment.
 - iii. To identify the suitable investment avenues.
 - iv. To consider the various features of investment avenues.
 - v. To allocate the funds to the investment avenues.
- Investment analysis: The next step is investment analysis. The goal of investment analysis is to determine the risk and return on investment avenues.
- Valuation of securities: The next step is the valuation of securities. Value means the present worth of the assets to the owners. The suitable weights should be applied for the valuation of securities.
- Portfolio construction: The portfolio construction is the trade-off between risk and return. It requires the knowledge of different aspects of avenues. It includes the following steps:
 - i. To decide the diversification level.
 - ii. To consider the time of investment.
 - iii. To select the time of investment.
 - iv. To allocate the funds to the assets.

- v. Acquisition of assets.
- Portfolio evaluation and revision: After selecting the portfolio another step is to evaluate the portfolio. The portfolio must be constantly evaluated. The portfolio should also be revised so that another portfolio should be considered.

1.5 INVESTMENT AVENUES

There are many investment avenues which are available in the market. The investors select the investment avenue on the basis of risk, requirement, return and many more. There are different factors like age, education and much more which affect the decisions of the investors. The investors invest in different investment avenues according to their profession also. Every investor has his own strategy for investing in the particular Investment Avenue. There are different types of avenues which are:

- **Equity shares:** These are also known as common shares. These are risky investment avenues. In this, the investor can earn high returns. The dividend depends upon the profits of the company. Equity shares can be purchased from the market or through mutual funds, the investor purchase mutual fund and the fund further purchases the equity shares.
- **Debentures:** A debenture is an acknowledgment of debt. The debentures are given as floating charge. There is a fixed rate of return on debentures. There are various types of debentures such as simple, secured, bearer, registered, redeemable, irredeemable, convertible, non-convertible, guaranteed, collateral and others.
- **Precious metals:** Investment in gold or silver is also done in India. The investors make the investment in gold, silver, and other objects. There are various occasions in which gold is used. The gold, silver at the time of sale the appreciation in the value of these ornaments will be the income. These type of investments is only made by the rich people or the high-income group people.
- **Real estate:** Another investment avenue is real estate. These investments are made in property, agricultural land, resorts, and others. The expected returns on this are

also very high. These are development plans in the future. There is good appreciation in the value of the property in India. The rate of increase in the value of the property is different from place to place. There are also tax benefits on the investment in property. The investment in agricultural land is also used as an investment, the return is less on these investments but the whole income is exempted in income tax. There is appreciation in the prices also. These are long-term investment and carries high risk.

- **Mutual funds:** It is another type of Investment Avenue in which the investors pool their money in a diversified portfolio, therefore, it reduces the risk and spread the risk. The investors who invest in mutual funds a get tax rebate under section 80C. There are two types of mutual fund schemes – open ended and close ended schemes. In open-ended scheme the period of maturity is not specified and in close-ended scheme the period of maturity is specified.
- **Fixed deposits:** These are also known as term deposits. Deposits in banks are safer investment avenues. Fixed deposits are the saving account with the fixed rate of interest and the amount cannot be withdrawn before the maturity date.
- **Life insurance policies:** There are many insurance policies available for the investors. Life insurance policy is a contract between the insurer and insured that the insurer will pay a certain amount at the time of the death of the insured. The insured person pays the premium amount regularly.
- **Public Provident fund:** The public provident fund is opened with the minimum Rs. 500 and maximum Rs. 70000 annually. The rate of interest is 8% annually and the scheme is for 15 years. Any person can open their PPF accounts in bank or post office. There is no tax on interest on deposits and come under section 80 C of income tax. This is the best form of investment avenues.
- **Post office saving schemes:** These avenues are very popular because they carry higher return. There is no TDS on this scheme. These include National saving certificate, National saving scheme, and others.

- **Stock market:** The investment in stock market is not a safer investment. The investment in the stock market may yield the higher profit but the investor should be aware of stock market regularly.

1.6 PERSONALITY TRAITS

Personality is obtained from the word “persona” which signifies “to speak through”. Personality is the psychological factor which changes the behavior of the individuals. Generally, personality refers to the set of traits and behavior that characterize an individual. Gordon Allport and H. S. Odbert, the psychologists of America in 1936, defined: "Those individual differences that are most salient and socially relevant in people's lives will eventually become encoded into their language; the more important such a difference, the more likely is it to become expressed as a single word." In other words, personality is how an individual reacts to and interact with others. An individual personality is inherited from the parents and produced by the environment. However, the personality characteristics are transformed by experiences in life also. The Five Factor Model is the Big Five which is a structured agenda for calculating the details of personality. The Big Five personality dimensions include Agreeableness, Extroversion, Conscientiousness, Openness, and Neuroticism.

- **Agreeableness**

Agreeableness means how an individual behaves towards others. They are compassionate, good in nature, cooperative and usually try to avoid the conflicts. They are friendly in nature, always ready to help and ready to sacrifice their interests for other people. They have an optimistic and positive view towards others. In other words, Agreeableness is related with traits like flexible in nature, trustful, cooperative, and ready to forgive others. Agreeableness is the how an individual can adjust to the social problems of the situation. The people who score less on agreeableness take less risk as compared to the people who take more risk (Chitra and Sreedevi, 2011).

- **Extroversion**

Extroversion means the individuals who are conversational, sociable, active and self-confident. It shows the comfort level of individuals with the other people. Extroverts are those who always enjoy spending time with the other people and they are energetic and always have positive emotions. They tend to be enthusiastic, and they are those individuals who usually say "Yes!" or "Let's go!" for any type of situation. In groups, they like to talk, assert themselves, and they attract others towards themselves. Extroversion represents the ability of the persons to connect with others and they can freely express oneself in the company of strangers. When they trade in the stock market they trust the information easily and take wrong decisions. They take more risks than the introverts (Sadi *et al.*, 2011).

- **Conscientiousness**

Conscientiousness refers to people who are dependable, responsible, organized and systematic. They have high standards and always strive to achieve goals. The people who are conscientious try to avoid trouble and they do every type of work through proper planning. They are intelligent and reliable. In other words, Conscientiousness is associated with the traits like careful, responsible and organized. The people who are conscientious enjoy structures that provide strategies in order to accomplish the tasks with precision and on time.

- **Openness to Experience**

Openness refers to the person's interests and creativity. They are curious and are very imaginative. Openness to Experience describes a dimension of cognitive style that distinguishes imaginative, creative people from down-to-earth, conventional people. Open people are intellectually curious, appreciative of art, and sensitive to beauty. They tend to be more aware of their feelings. They tend to think and act in individualistic. People with low scores on openness to experience tend to have narrow and common interests. They prefer the plain, straightforward and obvious over the complex, ambiguous, and subtle. In other words, Openness to Experience

also called Intellect is related to the traits of intelligence, originality, imaginativeness, curiosity and sensitive. Intellect is prominent in individuals who are highly open to experience. When these types of investors invest in the stock market they usually respond to the information and trade in their own tailor-made rules.

- **Neuroticism**

Neuroticism means person's ability to withstand stress. Neuroticism (Emotional Instability) refers to the ability to understand the negative feelings. The people who score high on Neuroticism have the negative feeling such as anxiety or depression. People who have high Neuroticism are not emotional. Their reactions are more intense than normal reactions. They take ordinary situations as frightening and minor disturbance as more complicated. Their negative reaction goes for the long period of time which shows that they are usually in a bad mood. These problems reduce the person's ability to think in a clear manner, to take the decisions and deal with the stress in an effective manner.

1.7 EMOTIONAL INTELLIGENCE

Emotions are the extreme feelings towards someone or something. Emotional intelligence merges feeling with thinking and is expressed in different related activities. "Emotional intelligence is a cluster of traits relating to the emotional side of life abilities such as recognizing and managing one's own emotions, being able to motivate oneself and restrain one's impulses, recognizing and managing other's emotions and handling an interpersonal relationship in an effective manner."

According to Daniel Goleman, Emotional Intelligence is:

"The capacity for recognizing our own feelings and those of others, for motivating ourselves, for managing emotions well in ourselves and in our relationships."

In other words, emotional intelligence means the ability of the person to (1) be self-aware (2) identify the emotions in other people and (3) handle the emotional signs and information. The different dimensions of emotional intelligence are discussed as follows:

- **Self-awareness:** It is the feeling when you know your own way of thinking and your particular enthusiastic qualities and shortcomings, symbols for your emotions, comprehend what activity choices you have. It includes self-comprehension or information of genuine sentiments right now.
- **Handling emotions:** Know how to deal with miracle sentiments, how to quiet yourself, and to control driving forces, how to remain positive under weight, how to adapt the things.
- **Motivation:** Able to position your own objectives and to accomplish those objectives through hard work, Able to set little strides to accomplish substantial objectives, Always do hard work regardless of dissatisfaction, Able to complete and complete undertakings. It includes proceeding with endeavors towards sought objectives or conquering negative feelings.
- **Empathy:** Ready to understand other individuals' sentiments, who can examine the non-verbal communication, who can take another's point of view, always ready to help the harmed people. It is the understanding and being mere to the sentiments of others or having the capacity to discover what the other people feel towards others and need.
- **Social skills:** Ready to coexist with others, Able to function admirably in gatherings and groups, Able to make and keep companions, Able to take care of issues and clashes with others, Able to interface properly with various individuals in various circumstances. They include the capacity to examine social circumstances, smoothness in collaborating with others.

Emotional intelligence is important capability which reveals the capability of individual's negotiations and if an investor is good in detecting the emotion of member of the

environment, it can also contribute to the good decision making of individuals (Debusk and Austin, 2011). Emotion intelligence is always present in individual decision making (Webb *et al.*, 2014). Investor decision is most of the time affected when they recall the previous experience they had in similar situations.

1.8 RISK TOLERANCE

The risk is the return uncertainty and financial loss. (Barsky *et al.*, 1997) express financial risk tolerance as the opposite of risk aversion—as viewed from an expected utility theory. The factors like age, marital status, experience, income, and gender affect the risk tolerance behavior. The investors will choose that investment avenue which has the potential risk and returns. The investor considers the advice of an expert, investment experience in the past and much more while investing in the particular investment avenue. Risk tolerance is the attitude of the person towards risk. When the risk tolerance is high, you are ready to take more risk. Risk tolerance also increases with the investment experience. The risk tolerance and socioeconomic factors affect the investment behavior and invest in different types of investment. The previous studies show that the risk tolerance depends on personality, past experience (Corter and Chen, 2005; Young *et al.*, 2012).

For the present study, risk tolerance scale has been used for determining the risk taken by the investors.

1.9 DEMOGRAPHIC ATTRIBUTES

Demographic attributes are those attributes which include age, gender, income, education, occupation and many more. A demographic profile is the personal characteristics of the people. These factors help in the evaluation of a personal profile of the person and study the effect on another. These factors mostly help the researchers to find or conclude some results. In other words, we can say that the demographic factors are the statistics that characterize the human population on different basis. These demographic factors are those factors that determine the features of the certain group of people and also determine the state of the country. The behavior of the investors is also different on different

demographic profile of the investors. In this study, age, gender, income, educational qualifications and marital status has been taken as the demographic attributes of the investors.

1.10 STOCK MARKET

Stock market refers to the secondary market in which the already existing securities are traded. The investors want liquidity in their securities so they invest but there are other investors who want to invest in new securities. Stock exchanges are the places where the securities of different companies can be purchased and sold. The securities of the corporation, trusts, governments, etc. are allowed at stock exchanges. Husband and Dockeray define: “Stock exchanges are privately organized markets which are used to facilitate trading in securities.” Stock exchanges are the association of persons whether incorporated or not.

1.10.1 FUNCTIONS OF STOCK MARKET

- These ensure liquidity of capital.
- These provide a continuous market for securities.
- Only the listed securities deal in the stock market.
- There is safety in dealings as these are governed by well-defined rules.
- The investors can evaluate the worth of their holdings from the price quoted.
- These are helpful in raising the new capital.
- These are helpful in mobilizing the surplus savings.
- These provide a platform for raising the public debts.

The National Stock Exchange (NSE) is one of leading stock exchange in Mumbai, India. It was established in 1992. NSE trade in screen-based trading, derivatives trading, equity, and internet trading. NSE deals in exchange listing, clearing and settlement, technology solutions, indices and many more.

The Bombay Stock Exchange (BSE) is one of the oldest stock exchanges in Asia. BSE deals in trading in derivatives, equity, currencies, debts, mutual funds, and deals in trading

of small-and-medium enterprises (SME). BSE deals in depository services from central depository services ltd.

1.11 LUDHIANA STOCK AND CAPITAL Ltd.

Ludhiana Stock and Capital Limited were started in 1981 by Sh. S.P. Oswal of Vardhman Group and Sh. B.M. Munjal of Hero Group. They started Stock Exchange specifically in the regions of Himachal Pradesh, Punjab, Jammu & Kashmir, and Chandigarh in order to help people in this area.

Ludhiana Stock and Capital Limited were the leading Regional Stock Exchange and in every sphere have been in the front comparatively to other Stock Exchanges. Through LSC, the savings of the different people are invested into the capital particularly in the Punjab state and other parts of the country. It mobilizes the funds by entrepreneurs from the public which results in the economic development, development of the industry and social development of different regions.

There are total 295 members of which 171 are sub-brokers and are registered with NSE National Stock Exchange and 124 are sub-brokers which are registered with BSE Bombay Stock Exchange.

Chapter-2

REVIEW OF LITERATURE

Behavioral finance is a new area of research so not much literature is available. The present study examines the investment decisions of the investor. Therefore, the review has been done on the related literature into four sections. Section 2.1 represents the investment decisions and the stock market. Section 2.2 represents the personality traits and behavioral biases. Section 2.3 deals with risk tolerance. Section 2.4 deals with emotional intelligence.

2.1 INVESTMENT DECISIONS AND STOCK MARKET

Anoruo (2003) examined the effect of consumer expectations on the portfolio of investors. They used the data from US monthly survey. The data was analyzed with OLS equation. They concluded that when the pessimistic consumer thought that the interest rate and inflation decrease then they would prefer cash and bonds than stock and the optimistic consumer preferred stock.

Susai and Moriyasu (2007) studied the consistency in risk and investment behavior of fund managers in Japan. The data was collected from 283 fund managers of pension funds and investment trusts in Japan. The data was analyzed by ordered probit model. The Japanese fund managers were consistent managers towards risk and inconsistent managers towards risk. They found that the disposition behavior of inconsistent managers. There was no difference in herding behavior of fund managers.

Kasilingam and Jayabal (2009) examined the perception of teachers towards small saving schemes. The collection of data was done from 614 teachers. The analysis of data was done through reliability, validity, and correlation. They observed that the perception of investors had great impact on type of investment and risk tolerance. They concluded that if the investors got the superior return during the term of investment then they had positive perception towards investment and the investors with age group below 40 didn't prefer to invest in small saving schemes as they took more risk.

Kasilingam and Jayabal (2010) investigated the different basis used for the evaluation of investment avenues. The data was collected from 614 government college teacher in Tamil Nadu. The data was analyzed by factor analysis, reliability, validity and rank correlation. They found that rational people considered that irrational people didn't consider the criteria while selecting the investment avenues. They found that mostly investors preferred investment in share, mutual funds, and gold.

Patidar (2010) conducted a study to know the investor's behavior towards share market in Dhar district. The data was collected from 80 investors. The data was analyzed in descriptive form. They concluded that the investors below 35 of age took part in speculation trade and the investors above 55 age didn't take part in risk and did not invest in share market.

Tunah and Tatoglu (2010) conducted a study to know the factors affecting investment practices of investors in Istambul. The data was collected by survey from 1300 respondents through interview and questionnaire. They concluded that the choice of investment avenues was affected by financial factors and socio-psychological factors. They found that married women preferred to invest in the instruments which were safe like gold. There was the positive relation between education level of the people and different instruments and income and different instruments of investment.

Bennet *et al.* (2011) found out the various factors affecting the attitude of investor's in selecting the stock selection in Tamil Nadu. The data was collected from 400 investors. The data were analyzed by t-tests, one way anova, and factor analysis. They concluded that the investors considered all 29 factors which were reduced to 5 factors and had an impact on the selection of stock. The different factors were quality of management, return on investment, price to earnings ratio, return on equity and the various financial ratios of the company which influence the decision of the people.

Gaur *et al.* (2011) examined the gender differences in investment decision in Hyderabad. The data was collected from 200 respondents. Chi-square test was used. They found that the female investors while investing in equity shares, they went for proper analysis. They found that level of awareness was high in male investors as compared to female investors.

They had less confidence in the investment decisions. They also concluded that the male investors had the high level of awareness than the female investors.

Kantidas (2011) identified the nature and preferences of households in Assam. The data was collected through questionnaire and interview from 125 respondents. They concluded that high-income people preferred to invest in shares but low-income people preferred to invest in insurance, safe investments. Mostly the investors from households preferred to invest in physical properties than financial avenues. The demographic factors had the significant impact on choices of investment avenues. They observed that most of the investor's preferred insurance so that they can get the different benefits of tax, secured life and, avenues which will provide profits in future.

Murphy and Gerrans (2011) investigated the effect of the gender differences on investment choices of fund managers. The data was collected from 2399 respondents and was analyzed by chi-square. They concluded that the single women and young women preferred to invest in less risky investments.

Shah *et al.* (2011) examined the relation between stages in life cycle and choices of investment avenues of rural investors. The data was collected from 403 investors of 13 villages. The data was analyzed by chi square. They concluded that the most preferred avenues were post office schemes and bank deposits at all stages of life. The investors above the age of 50 invested in real estate. The objectives behind investment like retirement planning, health insurance, dependent obligations, acquisition of housing property, working capital formation were dependent on stages in life cycle. They found that there was the relation between Life cycle stages and choice of investment avenues and sources of investment.

Shanmugasundaram *et al.* (2011) observed the influence of life style characteristics on investment decision making in Tamil Nadu. The collection of data was done from 120 investors. The t-tests, correlation, chi-square, and multiple regression were used in the study. They found that investors were rational towards capital market information and life style characteristics had a great impact on the investor's behavior.

Srinivasa and Rusari (2011) examined the various factors which affect the investment. The data was collected from 200 investors and analyzed with the help of descriptive statistics. They found that the factors like expected corporate earnings, firm status in the industry, the reputation of the firm, firm's products and services and return on equity were most influenced factors.

Brahmabhatt *et al.* (2012) explored the investment behavior of investors. The data was collected from 100 respondents by questionnaire. They found that in Mumbai women took less part in investment. They concluded that mostly people preferred to invest in stock market whereas youth were less aware of investment avenues. Women preferred to invest mostly in gold than any other avenues. They concluded that in Mumbai, people had sound knowledge of investment avenues. They discussed with family and friends for investment avenues decisions.

Fish (2012) conducted a study of gender affects on investing decisions. The data was collected from college students, Italy. The data was analyzed by regression. They concluded that females took less risk and males took more risk. There was a negative relation between group risk taker and individual risk aversion.

Geetha and Ramesh (2012) conducted a study to know the effect of demographic factors of investors on the investment pattern. The data was collected from 475 respondents in Tamil Nadu. The tools used were ANOVA and chi-square tests. They concluded that factors like income, family size had great influence on the period of investment. They observed that most of the people preferred life insurance, gold and real estate's for investment

Jain and Dashora (2012) examined the decision factors and the different strategies of the investors used for the investment in the stock market. The data was collected from 110 respondents in Udaipur. The anova and chi-square tests were used in the study. They observed that brokers and intuition had an impact on the investor's age and there was no relation between the age of the investor's and their behavior when the market achieve more than their expectations. There was no association between investor's age and the way they behave when dividend was announced of listed companies

Jain and Jain (2012) analyzed the saving and investment pattern of school teachers in Udaipur district. The data was collected from 100 respondents. The data was analyzed by chi-square and t-test. They observed that the school teachers preferred to invest their money in the bank with the objective of children marriage, education and security after retirement. The high-interest rate was one of the most important factors which influenced them the most.

Kathuria and Singhania (2012) examined the level of awareness and choices of investment avenues of private bank employees in Ludhiana. The data was collected from 150 respondents. The tests applied were the rank correlation, chi-square; the 5point likert scale was used. They concluded that the male and female used magazines, television, internet as the important sources of awareness regarding various investment avenues. They invested in safe and risk-free investment avenues and the females did not like to invest in gold.

Murugan (2012) conducted a study to know the attitude of investors towards investment avenues. The data were collected from 200 individual investors in Nellore district. They found that the awareness level of investors was high for the safer avenues. The scale was used for awareness level. They also concluded that the households earning capacity were the only factor which affects the investor's behavior. They found that investors of all income group and full-time salaried employees showed greater preference towards monthly investment.

Samudra and Burghate (2012) conducted a study to know the preference of the middle-class households in Nagpur. The population was divided into different strata and data was collected. The five-point scale was used to check the most preferred instrument. They concluded that the households preferred bank deposits and the highest returns was the main factor considered for investing.

Shanmugasundaram and Jansirani (2012) observed the different factors which affect the investor's decisions in Tamil Nadu. The collection of data was done from 515 investors. The chi-square test was used in the study. They concluded that decisions of investors were influenced by behavioral and psychological factors.

Charles and Kasilingam (2013) conducted a study to know the effect of age on investment behavior. The collection of data was done from 742 retail investors and was analyzed with the help of chi-square and correspondence analysis. The multistage random sampling technique was used for data collection. They concluded that the age was the important factor in determining their investment behavior. There was significant relation between age and equity experience, holding period, type of investors, the proportion of investment in equity, the source of funds and many more.

Obamuyi (2013) examined the factors which affect the investment in the market. The collection of data was done from 297 respondents in NIGERIA. The mean, weighted average score, t-test, ANOVA were used in the study. He observed that the factors which influence the investment were expected corporate earnings, the performance of the company in the past, expected bonus and dividend. He also observed that the socio-economic characteristics also affect the investor's investment decisions.

Shafi (2014) reviewed the various determinants affect the individual investor behavior in the stock market in different countries. The common determinants which had a significant impact were herding, irrational thinking, gender, income, risk factor, the influence of people's opinion, education, past performance of the company, bonus payments, expected corporate earnings, and many more.

Vijaya (2014) studied the various factors affecting individual investor behavior. They found that the factors were divided into cognitive factors, emotional factors, herding factors, contextual factors, demographic factors and market factors.

Lubis *et al.* (2015) studied the psychological factors which affect the investment decisions of the investors. The data was collected from 320 customers from different banks. They found that evaluation of past performance of the investment alternatives needed for taking investment decisions.

Lathif and Aktharsha (2016) studied the relation between investment ability, investor effort with the investment decisions. The data was collected from 264 respondents. They found

that the Investment Ability, Investor Effort, and Risk Appetite were significant predictors in Investment Decision-making among investors.

Lazar and Sundar (2017) studied the relation between the term of investment, the frequency of investment in stock market and the socio-demographic factors. The data was collected from 400 respondents. They found that there is no association between the term of investment and the socio-demographic factors and the frequency of investment in the stock market.

2.2 PERSONALITY TRAITS AND BEHAVIORAL BIASES

Ellen and Webley (2001) investigated how personality influenced the saving and borrowing behavior of households. The data was collected from center saving survey (2800 telepanel). The data was analysed through correlation and regression. They found that the personality factors extraversion and autonomy was the predictor of saving behavior of households.

Mayfield *et al.* (2008) examined the five personality traits and their investment management. The data was collected from 194 respondents by questionnaire. They used structural equation modeling. The data was analyzed through kurtosis, skewness and chi-square. The five big personality traits were neuroticism, extraversion, openness, agreeableness, and conscientiousness. They concluded that the persons who were creative and non traditional preferred large investment risk. There was negative relation between extraversion and investment specific risk tolerance. Risk-averse people did not invest in long term assets. The people who were open to their experience preferred to invest in long-term assets.

Verma (2008) examined the effect of personality type and demographic attributes of the individual investors on the choice of investment avenues. The data was collected by structured questionnaire from 500 investors and the data was analyzed with chi-square. She found that investors mostly preferred real estate than mutual funds and then insurance. The investors were not fond of debentures and others. She observed that males preferred to invest in PPF, real estate, equity shares and females preferred to invest in fixed deposits

and insurance and females thought equity was very risky. The service people mostly to invest in PPF and post office saving schemes and the professionals preferred to invest in mutual funds and insurance.

Mittal and Vyas (2009) conducted a study to know how the income of the individual investors affect the investment decisions and by behavioral biases. The data was collected from through questionnaire from 428 investors in Indore. The data was analyzed by anova. They concluded that the level of over confidence increases with the increase in income. Income had a great impact on the overconfidence level, overreact and loss/regret but there was no significant impact of self-attribution bias, framing effect. They also found that housewives invest in safe investments such as real estate/bullions whereas Professionals preferred for post office deposits and derivatives and the Students preferred for derivatives and equities.

Zoghlami and Matoussi (2009) identified the psychological biases which influenced the most to the behavior of Tunisian investors. The collection of data was done from 100 brokers and the univariate and multivariate analysis was used in the study for analysis. They observed that Tunisian investors were influenced by five psychological biases that were under confidence, under opportunism, precaution, and conservatism and information inferiority complex.

Inaishi *et al.* (2010) examined the behavior of overconfident investor in the stock market with the help of simulation. They found that when the overconfident in the market investors increased the market dealing increased and rising trends also increased. They also showed that the rising trends made investors more overconfident.

Parashar (2010) conducted an empirical study to know the influence of personality traits on Investment avenues and on risk-taking capacity of investors. The data was collected from 100 respondents. The data were analyzed by ranking, diagrammatic and descriptive form. They concluded that people were risk takers and invest mostly in equity and real estate. The females who were less risk-averse preferred to invest in fixed deposits.

Masomi and Ghayekhloo (2011) studied the effect of behavioral factors on investment decisions. The collection of data was done from 40 institutional investors at Tehran stock exchange. The factor analysis and descriptive statistics were used in the study. They found that fundamental analysis was used in investment decisions. The factors such as underlying stock, market information and change in stock price affect the investment decisions.

Peterson *et al.* (2011) examined the investor's personality traits during the last decade of 2000-2010 in the stock market. They had prepared the report and investment personality test was taken from 2,600 individuals. The test included 60 items based on the Big Five model and then they took the test on disclosed financial statistics which include their previous returns of five years, the biggest loss in that period and made decisions.

TengLin (2011) explored the relation among psychological traits and behavioral biases of investors in Taiwan stock market. The collection of data was done from 554 respondents. SEM was used in the study. They observed that the investors who had stronger neuroticism personality would get the stop-loss point so that they can evade the loss. The investors who had stronger extraversion and openness personality traits would confirm the market information in order to avoid herding and overconfidence. They further observed that females had less confidence and people who were old had high disposition effect than young people.

Chin (2012) examined the relation between investor's psychological biases and decision making of the investor in Malaysia. The collection of data was done from the 246 respondents. The descriptive statistics, annova and regression were used in the study. He found that there is relation between overconfidence and investor decision making, conservatism bias and investor decision making and regret and investor decision making but herding behavior had no relationship with investor decision making.

Jamshidinavid *et al.* (2012) examined the relation between Personality traits and demographic ones on the financial behavior prejudices in Tehran Stock in 2011. The collection of data was done from 215 people. The correlation statistics and SEM were used in the study. They observed that four personality traits and three demographics were influenced the three behavioral biases in investment.

Ramanujam and Ramkumar (2012) determined the attitude towards risk and personality traits of women in the stock market. The collection of data was done from 360 investors. The t-test, factor analysis and percentages were used in the study. They concluded that the important determinants of investor's behavior were the source of information, awareness on the information in internet, preparatory work, financial advisors help and learning interest among the investors.

Thomas and Rajendran (2012) conducted a study to understand the relation between the five-way model and choice of investment avenues of individual investors. The collection of data was done from 195 respondents. The chi-square, regression, and factor analysis were used in the study. They concluded that the different personality types of investor preferred for different investment avenues.

Zaidi and Tauni (2012) identified the relation between Personality Traits and Overconfidence Bias of investors Stock Exchange in Lahore. The collection of data was done from 170 respondents. The chi square and correlation statistics were used in the study. They observed that there was positive relation between overconfidence bias and Conscientiousness, overconfidence bias and Agreeableness, overconfidence bias and Extroversion whereas inverse relation between Overconfidence bias of the investor and investors Neuroticism trait.

Bashir *et al.* (2013) identified the impact of demographics factors and investors personality traits on the behavioral biases and investors risk tolerance in Pakistan. The collection of data was done from 225 bankers and finance students. The data was analyzed by SEM. They concluded that personality traits had significant relation except disposition effect with overconfidence, herding behavior and risk taking. The demographic factors had no relation with behavioral biases.

Bashir *et al.* (2013) observed the relation among investor's behavioral biases and investment. The collection of data was done from 100 university students and employees in Gujarat. The data was analysed with the help of correlation and chi square. They found that there was no correlation between gender and investors overconfidence bias. They determined that there was negative relation between investor's overconfidence bias and the

different behavioral biases such as confirmation bias, loss of aversion, and illusion of control.

Moradia *et al.* (2013) explored the relation between personality factors and behavioral biases of investment managers in the Tehran Stock. The chi square and correlation statistics were used in the study. They observed that there was relation between extroversion-introversion and availability bias but there was no correlation between Sensation-Intuition, Feeling- thinking, Perceptual- judgment with data availability. But there was no correlation between thinking-feeling and introversion-extroversion with conservatism.

Rekik and Boujelbene (2013) examined whether psychological and demographic factors affect the Tunisian individual investors behavior. The descriptive statistics and factor analysis were used in the study. The collection of data was done from 300 respondents. They observed that the behavior of investors were affected by different behavioral biases such as mental accounting, representativeness, loss aversion, herding attitude, and anchoring. They also found that there was relation between gender, age and experience and behavioral factors in investment decisions.

Suresh (2013) explored the relation among emotional and cognitive biases and to study the traits of a good investor and to know the different behavioral biases which helps them to take decisions correctly. He compiled the data and discussed the various traits of trader and investor.

Charles and Kasilingam (2014) studied the importance of personality traits and its influence on investment decisions of investors. The data was collected from 742 investors. The multistage random sampling technique was used. They also studied the association between demographic and investment and personality variables. The data was analysed by canonical correlations which revealed that there was significant correlation among demographic and investment and personality variables.

Onsomu (2014) identified the different behavioral biases at Securities Exchange in Nairobi that affect the investor while investing. The collection of data was done and analysed by

chi-square. They found that there was a significant correlation between Confirmation bias, Availability bias, Disposition effect, Representativeness bias, and gender.

Imthiyas *et al.* (2015) studied the behavioral biases of individual investors. They found that Self Control, Heuristics, Representativeness and many more among investor from IT/ITES exhibit inefficient markets.

Pak and Mahmood (2015) studied the relation among personality traits and risk taking and investor's investment decisions and risk tolerance of private investors in Kazakhstan. The data was collected and was analysed by regression statistics and correlation statistics. They observed that there was positive between extraversion and openness to experience with risk tolerance and there was negative correlation between agreeableness, conscientiousness and neuroticism with risk tolerance. The risk tolerance was positively correlated with the investment decisions. They also found that women were more willing to invest in stocks than men.

Parameshwari and Krishnan (2015) analysed the relation among the personality traits of investors and their risk profile and their attitude towards investment. The data was collected from 100 investors and was analysed with the help of two way anova, correlation and regression. They found that most of the respondents were conservative and preferred to invest in securities in which there was no risk. There was relation between neuroticism and marital status of the investors only. They found that there was great influence of agreeableness trait, conscientiousness trait and risk tolerance on the investment behavior of the individuals.

Alquraan *et al.* (2016) studied the behavioral factors affecting the investment decisions in stock market. The data was collected from the 140 investors and was analysed with the help of regression and anova. They found that the herding bias didnot effect the investment decisions and there was a great influence of overconfidence bias on the investment decisions.

Bakar and Chui (2016) examined the relation between the psychological biases and the investment decisions. The data was collected from 200 investors in Klang valley. They

found that conservatism bias, availability bias and overconfidence bias had significant impact on investment decisions. There was no significant impact of herding behavior on investment decisions.

Ghelichi *et al.* (2016) studied the effect of psychological factors on financial decisions in Iran stock exchange. The collection of data was done from 384 respondents. They found that confidence, belief and regret influence investment decisions of the investors.

Sujekha (2016) studied the effect of behavioral factors on the investment decisions. She found that the investors were usually impartial in their financial decision-making and investors were known to be over confident of investment decisions, the investors were found to recognize to overrate the chances of their success.

Dhiman and Raheja (2017) studied the influence of the different personality traits and the different emotional intelligence on the investors' investment decisions. They found that there was positive relation among them. They concluded that there was relation between the openness, extroversion, agreeableness and the investment decisions. There was relation between the self awareness, social skills, empathy, handling emotions and motivation and the investment decisions.

Gupta and Ahmed (2017) studied the effect of behavioral factors on the investment decisions. The collection of data was done through 380 respondents. They found that all the factors had impact on the investment decisions.

Raheja and Dhiman (2017) studied the influence of the different personality traits and the different behavioral biases on the investors' investment decisions. They found that there was positive relation among them. They concluded that there was relation between the openness, extroversion, agreeableness and the investment decisions. There was relation between the overconfidence bias, regret and the investment decisions.

2.3 RISK TOLERANCE

Wang and Hanna (1997) studied the relationship between investors age and investors risk tolerance. The data used for this study was the survey of consumer finances (1983-89). The data was analysed with the help of mean, percentages, and graphs. They concluded that with the increase in age, there was increase in risk tolerance. The households who were not retired in their case the wealth proportion increased with age.

Harris *et al.* (2006) studied the gender difference in risk assessment. The collection of data was done from 657 respondents. The regression and t-tests were used in the study. They observed that women did not indulge in the activities which involve risk such as gambling and recreation but there was no difference in gender and social risks.

Ajmi (2008) suggested the various determinants of investors risk tolerance in Bahrain. The data was collected from 1500 respondents by questionnaire. He concluded that men had more risk tolerance than women. Investors who had high education took more risk than the less educated one. The risk tolerance fell down when the investors reached their age of retirement. Bahrainis were less risk tolerant than non Bahrainis.

Wang (2009) conducted a study to find out the relation between the knowledge of male and female and risk taking behavior. The data was collected by online survey of 524 respondents. The correlation and manova statistics were used in the study. They concluded that all the three variables were highly correlated and there was correlation between objective know, subjective knowledge and risk taking. They further observed that the female investors had less objective and subjective knowledge than male investors and they took less risk. It was investors' subjective knowledge that acts as mediator between objective knowledge and risk taking.

Tenglin (2009) studied the relation between the risk aversion and background risk of the households. The data of 3269 households in Taiwan was taken from survey of total income of the family and expenditure. The data was analysed by multivariate OLS regression analysis. They concluded that the households with 40 years of age were less risk averse but the households with low level of education had high ARA. They also concluded that the

individuals who had high income were more risk averse. The male households were less risk averse than women.

Ahmad *et al.* (2011) examined the affect of various demographic features on risk tolerance of investors. The data was collected from 150 respondents from Islamabad by questionnaire. The data was analysed by regression. They concluded that there was direct relation between risk tolerance and investor's education and investor's income and risk tolerance and there was indirect relation between age and investors risk tolerance, gender and investors risk tolerance and marital status and investors risk tolerance. They also concluded that women were risk averse and unmarried people were risk taker.

Wong (2011) studied the relation between the different demographic factors and investors risk tolerance in three countries. The anova test and regression test were used in the study. He observed that when there was direct relation in education and risk tolerance and married people were risk averse. The risk tolerance of investors in Australia was observed in age and education. The risk tolerance was varied in U.S. respondents in marital status and U.K. respondents showed the instability in gender of respondents and income of the respondents.

Chattopadhyay and Dasgupta (2015) studied the relation between investors risk tolerance and their demographic characteristics. They found that there was inverse relation among the number of dependents, qualification of the respondents, and amount of investments and investors risk tolerance level and there was direct relation among gender, marital status, and age of the investors and their risk tolerance level.

Thanki (2015) studied the relation among personality traits and demographic factors and risk tolerance. The collection of data was done from 268 investors and the independent t-tests and anova and post hoc anova were used in the study. He found that there was no relation between investors risk tolerance and their education. There was positive correlation between investors risk tolerance and personality type.

Kannadhasan *et al.* (2016) examined the relation between personality and biological factor with the investors risk tolerance. They found that that the biopsychosocial factors are

positively associated with FRT. It showed that an investor who had a higher level of sensation seeking and self-esteem and has Type A personality were more risk-tolerant.

Kubilay and Bayrakdaroglu (2016) studied the relation between the investor's personality traits and their risk tolerance. They also studied the relation between the investors behavioral biases and their risk tolerance. The collection of data was done from Istanbul. They found that there was relation between the investor's personality traits and their risk tolerance. There was relation between investor's behavioral biases and their risk tolerance.

Khan (2017) studied the relation among the risk tolerance and investors characteristics. He found that average risk was significant with males, inheritance, transfer of assets, or both, risk preference, extraversion and future investment outlook.

Raheja and Dhiman (2017) studied the influence of the different personality traits and the investors' risk tolerance. They found that there was positive relation among them. They concluded that there was relation between the neuroticism, conscientiousness and the risk tolerance.

2.4 EMOTIONAL INTELLIGENCE

Kunnanatt (2004) discussed the emotional intelligence. He observed that people with high emotional intelligence would produce win-win relationship and people with low emotional intelligence would produce win lose relationship. The emotional intelligence training programs would change both the inside and outside relationship of participants and better attitudes, clearer perceptions, and productive affiliations in life.

Avsec *et al.* (2009) analyzed the connection between the emotional intelligence of Croatian and Slovenian college understudies and their identity attributes. The information was gathered from 257 college understudies and 171 college understudies. The information was dissected by regression, relationship and two way anova. They reasoned that extraversion trait and Conscientiousness trait were vital indicators and the neuroticism trait was the most grounded indicator.

Landa *et al.* (2010) observed that emotional intelligence was directly related to neuroticism. The emotional attention was indirectly related to openness and there was direct relation among emotional clarity and extraversion.

Ezadinea *et al.* (2011) researched the impact of EI and its measurements on portfolio execution. The information was gathered from 122 Iranian shareholders. The information was broke down with the assistance of regression. They had also used t-tests for analysis. They inferred that there was beneficial outcome EI on portfolio execution. They found that portfolio execution and return was influenced by the experience of the speculators.

Khalatbari *et al.* (2011) investigated the relations between emotional intelligence and identity qualities with self-adequacy in the Islamic Azad University. The information was gathered from 278 understudies. The information was examined with the assistance of different relapse and relationship. They found that there was sure and huge connection between emotional intelligence and identity qualities with self-adequacy in understudies of Islamic Azad University.

Garkaz and Mehrvarzi (2012) investigated the connection in emotional intelligence and execution of financier firms. The information was gathered from 87 firms. The information was broke down by friedman test and mean. They presumed that the connection exists in dealers' EI and execution, and in self-administration and execution however no connection exists in social awareness and execution. They additionally watched that relationship administration had the most effect and mindfulness had minimal effect on execution.

Nawi *et al.* (2012) studied the relation of emotional intelligence of school leaders and their personality traits in Malaysia. The collection of data was done from 309 leaders and the correlation was used in the study. They observed that there was direct relation between conscientiousness trait and emotional intelligence, openness to experience trait and emotional intelligence, extraversion trait and emotional intelligence and agreeableness trait and emotional intelligence.

Sami and Rizvi (2013) observed that there was direct relation between emotional intelligence and life satisfaction. There was indirect relation between personality traits and life satisfaction.

Pervez (2014) observed that investor's emotional intelligence is related with investment decisions.

Pirayesh (2014) observed the connection between investor's emotional intelligence and strategies. The collection of data was done from 270 investors and the relation existed among risk and investors emotional intelligence.

Tanvir *et al.* (2016) observed that self awareness is directly related with investment decisions, empathy is directly related with investment decisions but there was less impact of relationship management on investment decisions.

So, from above we found that there were positive relations between extroversion, openness to experience and risk tolerance of the investors. There were negative relation between neuroticism, agreeableness and risk tolerance of the investors. The relation between the personality traits and investment decisions is indirect significant. The relation between risk tolerance and investment decision of the investors is directly significant. So the risk tolerance act as a mediating role in the personality traits and the investment decisions of the investors. The personality traits influence the risk tolerance and the risk tolerance further influences the investment decisions of the investors. There was a relation between the different behavioral biases and the investment decisions of the investors and the risk tolerance of the investors. We have found that there were different strategies used by the investors while investing. There was a relation between the emotional intelligence and the investment decisions of the investors.

Chapter-3

RESEARCH METHODOLOGY

This chapter deals with the research methodology adopted for the conduct of the present study. Section 3.1 presents the need for the study. Section 3.2 reveals the objectives of the study. Section 3.3 represents the study variables. Section 3.4 shows the research design and methodology of the study. Section 3.5 shows the data analysis. Section 3.6 presents the reliability, validity and pilot testing of the study. Section 3.7 presents the limitations of the present study.

3.1 NEED FOR THE STUDY

The researchers, in earlier studies, had examined the investor's behavior and help us to understand why and how people dealt with the investments in various ways. After the recession, there is a remarkable change in the behavior and the investment pattern of the individual investor, so they want to invest their money for better return rather than to spend. Their focus has distorted from luxurious life to secured future life. In previous studies, researchers considered the investment decision making, most preferred investment avenues and the various factors that influence the investment decisions. Till now, a limited literature was there to explain how personal features influenced the investor behavior. The behavioral biases of the investors are influenced by the demographic factors and personality of the investors. The influence of behavioral biases in investing is mostly ignored in the literature. The research gap is to study the influence of behavioral factors on the investment decision-making.

In earlier studies, the research has shown that EI is the only factor which affects the people in their lifestyles, their services, social skills, how to control their emotions and get in touch with the other people. Emotional intelligence is how the individual deal with the others and understand their emotions. The emotional intelligence and personality traits of teachers, leaders, and employees were studied in the previous studies. But no effort has been taken to date which relates the dimensions of emotional intelligence with the behavior of individual investor.

The present study is to establish the association of demographic attributes, personality traits, emotional intelligence and behavioral biases of individual investor with investment decisions and risk tolerance of the investors in the stock market. This study will help us to know the relation between investment decisions and risk tolerance of investors. It will help the financial advisors to know the different behavioral biases of investors so that they can give advice them properly in order to mitigate such type of biases. It may help the investors in understanding the subjective part of their behavior and control their emotion while taking decision for their investment in stock market options. It will help the investment advisors and professionals to predict the investors' attitude towards risk in an improved manner that results in good investment decisions. The financial planners and financial advisors after getting the knowledge of the different personality traits of the different investor, they can easily recognize which category of investment will suit the investors at its best.

3.2 OBJECTIVES OF THE STUDY

The present study was a focus on the objectives as follows:

1. To study the investment strategies used by Individual Investor in Indian Stock Market.
2. To study the relation of Demographic Attributes, Personality Traits, Emotional Intelligence and Behavioral Biases with the Investment Decisions.
3. To study the relation of Demographic Attributes, Personality Traits, Emotional Intelligence and Behavioral Biases with Risk Tolerance of Investors.
4. To study the relationship between Risk Tolerance and Investment Decisions of Investors.

3.2.1 Hypotheses of the Study

In the light of above-mentioned objectives, following hypothesis were framed and tested:

H₁: There is significant relation between Investors Demographic Attributes and their Risk Tolerance

H₂: There is significant relation between Investors Personality Traits and their Risk Tolerance

H₃: There is significant relation between Investors Emotional Intelligence and their Risk Tolerance

H₄: There is significant relation between Investors Behavioral Biases and their Risk Tolerance

H₅: There is significant relation between Risk Tolerance and Investment Decisions of the investors

H₆: There is a relation between Demographic Attributes and Investment Decisions of Investors

H₇: There is a relation between Personality Traits and Investment Decisions of Investors

H₈: There is a relation between Emotional Intelligence and Investment Decisions of Investors

H₉: There is a relation between Behavioral Biases and Investment Decisions of Investors

H₁₀: The Personality Traits - Investment Decisions relationship is mediated by Risk Tolerance

H₁₁: The Behavioral Biases - Investment Decisions relationship is mediated by Risk Tolerance

H₁₂: The Emotional Intelligence - Investment Decisions relationship is mediated by Risk Tolerance

H₁₃: The Demographic Attributes - Investment Decisions relationship is mediated by Risk Tolerance

Figure 3.1 presents the theoretical framework of the study

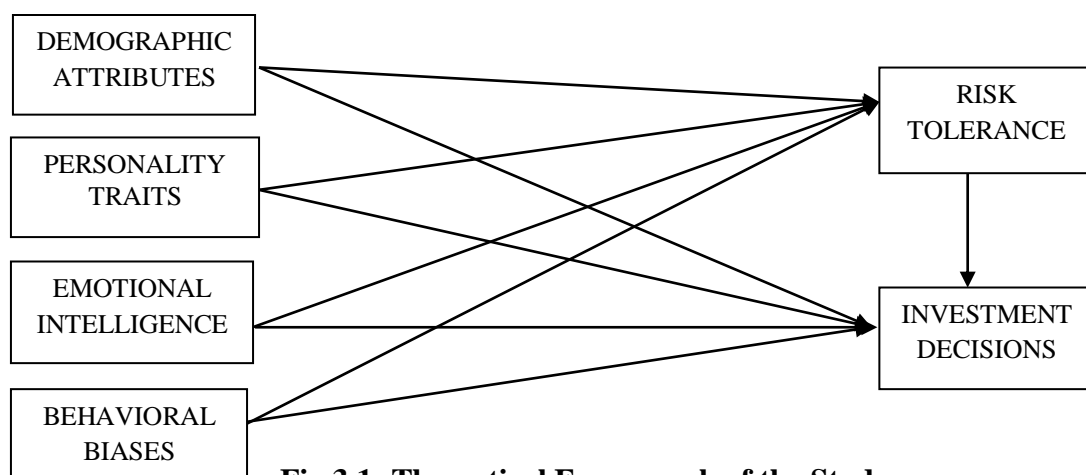


Fig 3.1: Theoretical Framework of the Study

3.3 STUDY VARIABLES

This study attempts to study the relation of Demographic Attributes, Personality Traits, Emotional Intelligence and Behavioral Biases with Risk Tolerance and Investment Decisions of Investors. The study has been done using two sets of variables i.e. dependent and independent variables. These are detailed as under:

Independent variables: Demographic Attributes, Personality Traits, Emotional Intelligence and Behavioral Biases.

Dependent variables: Risk Tolerance and Investment Decisions of Investors.

Mediating variable: Risk Tolerance

For the third objective- the relation was studied between risk tolerance and investment decisions, the independent variable was risk tolerance and investment decisions was the dependent variable.

In this study, the questionnaire was divided into seven questions. Question one relates to investment decisions. Question two relates to investment strategy, question 3 relates to personality traits, question 4 measure the behavioral biases, question 5 relates to risk tolerance, question 6 measure the emotional intelligence of the investors, question 7 shows the demographic attributes of the investors.

- a. Nominal data scale was used to collect demographic attributes of the respondent i.e. age, marital status, income, gender and education of the respondents.
- b. The standardized scale for Big Five Inventory (BFI) which is a reliable & validated 44 item, five-point Likert scale that measures the individual traits along the Big Five Personality factors, conscientiousness, agreeableness, openness to experience, extraversion, and neuroticism. (John *et al.*, 1991, Myers, 1998)
- c. The standardized scale for Emotional Intelligence (Goleman, 2001), which is reliable and validated 50 item, five-point Likert scale that measures the components

of emotional intelligence, empathy, self-awareness, motivation, managing emotions, and social skills.

- d. The standardized scale for Behavioral biases scale was taken from (Chin, 2012), which is reliable and validated 24 item, five-point Likert scale that measures the behavioral aspects of the individuals i.e. overconfidence, regret, herding behavior and conservatism.
- e. The standardised scale for Investment decisions was also taken from which is reliable and validated 35 item Likert scale (Hameed, 2012)
- f. The standardised scale for Risk tolerance was also taken from which is reliable and validated 9 item Likert scale (Gananasekar and Arul, 2013)

3.4 RESEARCH DESIGN AND METHODOLOGY

3.4.1 Research Design

The present study has used a Descriptive Research Design. In the study, it is an attempt to understand the relation of Demographic Attributes, Personality Traits, Emotional Intelligence and Behavioral Biases on Investment Decisions and Risk Tolerance of Investors. The data collection has been done through structured research instrument.

3.4.2 Sample size

The data has been collected from the 500 Individual Investors who invest through LSC Securities Ltd.

3.4.3 Sampling Technique

Purposive sampling technique was used. Purposive sampling is a non-probability sampling and it occurs when the selection of the elements of the study are chosen by the judgment of the researcher.

3.4.4 Data Sources

The data was collected from both primary and secondary sources. The primary data was collected from stock market investors through the structured questionnaire and the secondary data was collected from journals, books, websites, and others.

3.5 DATA ANALYSIS

When all of the information was compiled, the data was entered in Statistical Package for Social Science (SPSS). The data were analyzed through SPSS and Excel and multiple regression and correlation technique and SPSS process macro by Andrew F. Hayes were used accordingly for the data analysis.

The descriptive statistics have been used to study the basic characteristics of the investors and strategies used by the investors for making the investment. It is presented through frequency, percentages and mean. So, we use these statistics in order to interpret the results received from the investors on the basis of the questionnaire. It provides the clear picture to both the researcher and the person who read it. Multiple Regression Statistics has been used to study the relation among Demographic Attributes, Personality Traits, Emotional Intelligence and Behavioral Biases with Risk Tolerance of Investors. It is a statistical technique which measures the relation between two or more independent variables and the dependent variable. Multiple Regression Statistics has been used to study the relation among Demographic Attributes, Personality Traits, Emotional Intelligence and Behavioral Biases with Investment Decisions of Investors. There is no relation among these different independent variables (Demographic Attributes, Personality Traits, Emotional Intelligence and Behavioral Biases). Correlation statistics has been used to study the relation between Investors Risk Tolerance and their Investment Decisions. It is a technique which studies the linear relation between two metric variables. The Process Macro technique by Andrew F. Hayes has been used in order to check whether the risk tolerance act as the mediator among the investment decisions and Personality Traits, Emotional Intelligence, Demographic Attributes and Behavioral Biases of the investors. It is a technique which defines the effect of independent variable on the dependent variable through the mediator.

3.6 RELIABILITY, VALIDITY AND PILOT TESTING

3.6.1 Reliability

Reliability is the basic psychometric requirements of scale validity. Reliability is concerned with the ability of an instrument to produce the similar result, again and again

under the assumption that group of respondents and prevailing conditions remain same. It reflects that there is no random error and it consistently measures the underlying construct with reasonable accuracy (Leedy and Ormrod, 2001; Hair *et al.*, 2008; Hair *et al.*, 2013). Internal consistency is an important aspect of reliability. It describes the level to which the different scale items of the same construct correlate with one another. Prior the research, a pilot study was conducted.

A pilot study was done to pre-test the questionnaire before starting the full study. A pilot study was carried out on a one-tenth of the sample size i.e. 50 investors to test the reliability of the collected data. A pilot study is a preliminary research which uses the same research methods as it is in the major study and the sample used for the pilot study is also from the same population as it is in the main study. The main purpose of the pilot study is to assess the various research methods prior to the major study so that the required modifications can be made. There are many advantages of conducting the pilot study. Such as,

- ✓ Provides information to discover unanticipated findings and consequences.
- ✓ Provides a check on all the phases of data collection method.
- ✓ Provides information on possible ethical problems overlooked previously.

Cronbach alpha is the popular method for checking internal consistency (Churchill, 1979; Peter, 1981). If the value of Cronbach's alpha is closer to 1, then the internal consistency is higher. In general, the reliabilities less than 0.70 indicate a poor estimate of observed variance. In the present study, the reliability of the various constructs has been assessed through Cronbach's alpha. The values of the Cronbach's alpha for all the constructs (Table 3.1) are above the threshold limit of 0.70.

Table 3.1: Cronbach's alpha for the construct

Sr. No	Construct	Cronbach's alpha for the construct
1	Personality Traits	0.770
2	Emotional Intelligence	0.824
3	Behavioral Biases	0.90
4	Investment Decisions	0.75
5	Risk Tolerance	0.852

3.6.2 Validity

The validity of the various constructs of interest has been examined by employing Campbell and Fiske criteria of validity. Campbell and Fiske (1959) anticipated two concepts of construct validity: convergent and divergent validity. Convergent validity is the degree to which the various attempts have been done to measure the validity. Whereas, discriminant or divergent validity examines the level to which the group of items representing a specific construct- differentiates that construct from another set of items - representing some other distinct construct (Bagozzi *et al.*, 1991). The validity of the questionnaire has been examined by 10 academic experts for the present study. All the academic experts are from research area and management. All the experts were contacted personally and requested them to examine and suggest any modification in the questionnaire.

3.7 LIMITATIONS OF THE STUDY

All the possible care has been done at every stage in the study towards planning, selecting the particular methods and techniques, the collection of data and analysis and interpreting of data. But, there are certain limitations which appear in the study are discussed as follows:

- The results of the present study cannot be generalized with certainty to all the investors investing through other exchanges in other states.
- The inferences are based on the assumptions that the data provided by the investors are true and correct.
- The findings may be relevant for other stock exchanges as that of Ludhiana Stock and Capital Ltd. However, we do not claim the generalization of the results.

Chapter- 4

INVESTMENT STRATEGIES OF INVESTORS

This chapter shows the data analysis. The data so collected is being interpreted in this chapter as per the first objective as mentioned earlier in the study. Section 4.1 reveals the demographic profile of the investors. Section 4.2 reveals the investment strategies used by the investors in the stock market. The data was analyzed with the help of various tools like descriptive statistics and mean.

4.1 DEMOGRAPHIC PROFILE OF THE INVESTORS

This part of analysis includes the demographic profile of the individual investors from whom the data was collected. The respondents who invest in the stock market were selected for this purpose. This part includes the categorisation of investors on the basis of gender, marital status, age, qualification, and income.

4.1.1 Gender of the Respondents

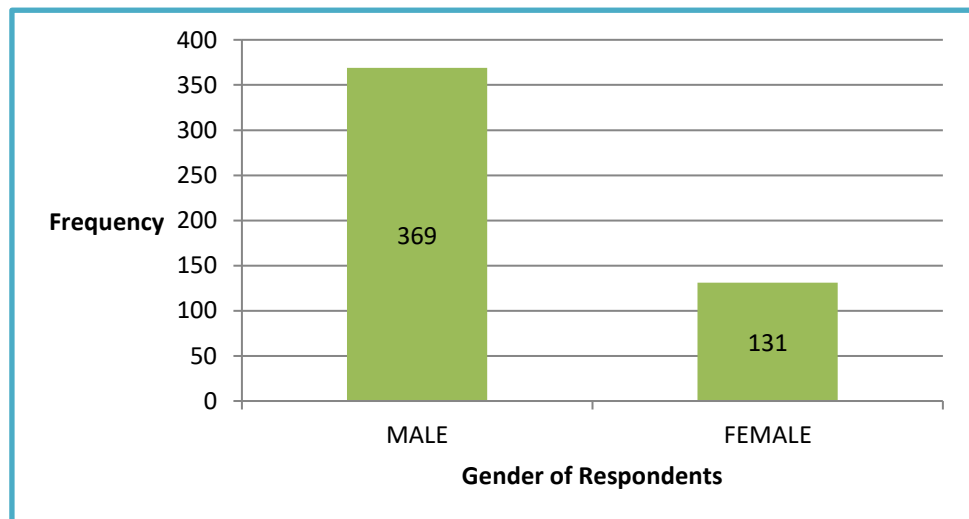


Fig 4.1: Frequency distribution of gender of respondents

Figure 4.1 shows that out of 500 individual investors, 369 individual investors who responded to the questionnaire are males and 131 individual investors who responded to the questionnaire are females. So, males invest more in the stock market than the females.

4.1.2 Marital Status of Respondents

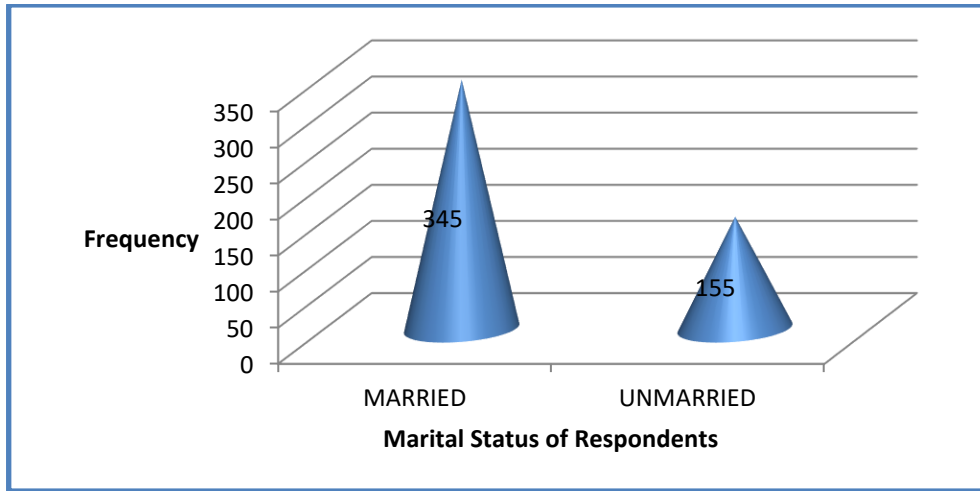


Fig 4.2: Frequency Distribution of marital status of respondents

The figure 4.2 shows that out of 500 investors there are 345 investors are married and 155 investors are unmarried. So, married investors invest more in the stock market rather than unmarried investors.

4.1.3 Age of Respondents

Table 4.1: Frequency distribution of age of respondents

Age Groups	Frequency	Percent
Below or equal to 30	168	33.6
31-40	192	38.4
41-50	118	23.6
Above 50	22	4.4
Total	500	100.0

Source: Author's calculation

There are 168 investors which are in below or equal to 30 age group, 192 investors which are in 31-40 age group, 118 investors are in 41-50 age group and 22 investors are above 50 as shown in Table 4.1.

4.1.4 QUALIFICATIONS OF THE RESPONDENTS

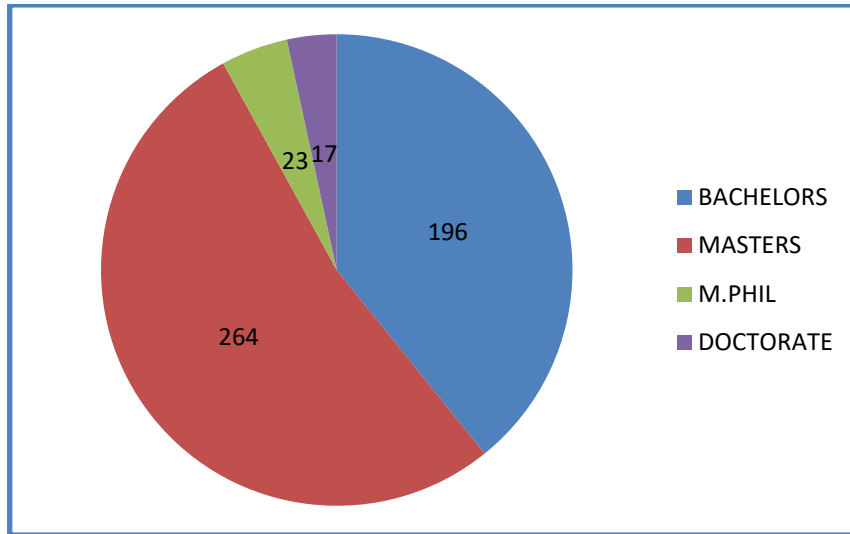


Fig 4.3: Frequency distribution of qualification of respondents

Figure 4.3 shows that there are 196 investors who have done Bachelors Degree, 264 investors who have done Masters Degree, 23 investors who have done M. Phil Degree and 17 investors who have done Doctorate Degree.

4.1.5 INCOME OF THE RESPONDENTS

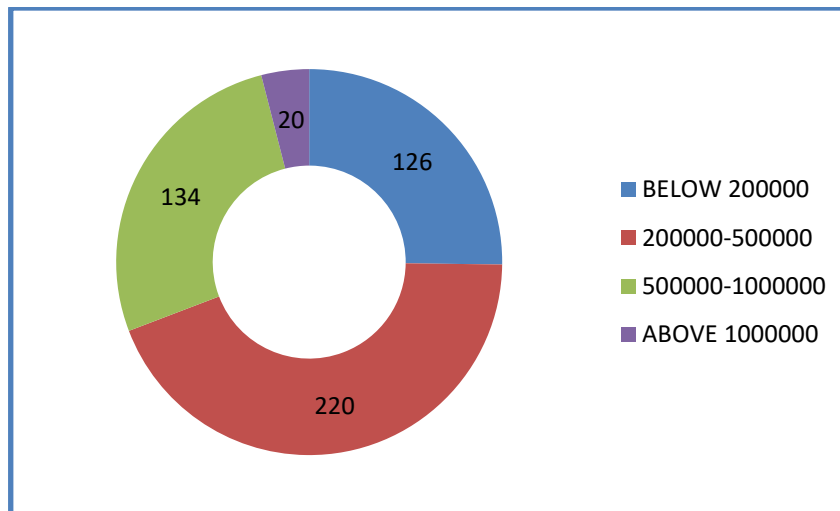


Fig 4.4: Frequency distribution of income of respondents

Figure 4.4 shows that out of 500 investors, 126 investors had income below or equal to 200000, 220 investors had income in between 200001-500000, 134 investors had income in between 500001-1000000 and 20 investors had income above 1000000.

4.2 INVESTMENT STRATEGIES USED BY THE INVESTORS

There are various investment strategies which are used by the investors while making the investment in stock market. For this purpose in order to find out which strategies are mostly used by the investors, 21 statements are used on the 5 point Likert scale (strongly disagree SD, disagree D, neutral N, agree A and strongly agree SA) in Table 4.2

Table 4.2: Frequency Distribution of Investment Strategies

Sr. No.	Strategies	SD	D	N	A	SA	Total
1.	Size effect (buy small cap stocks)	90 (18%)	89 (17.8%)	43 (8.6%)	239 (47.8%)	39 (7.8%)	500 (100%)
2.	Value effect (buy high Book to market equity stocks)	90 (18%)	148 (29.6%)	129 (25.8%)	101 (20.2%)	32 (6.4%)	500 (100%)
3.	Leverage effect (buy stocks of highly levered companies)	67 (13.4%)	102 (20.4%)	175 (35%)	120 (24%)	36 (7.2%)	500 (100%)
4.	P/E effect (buy low P/E stocks)	56 (11.2%)	93 (18.6%)	109 (21.8%)	180 (36%)	62 (12.4%)	500 (100%)
5.	January Seasonality effect (buy stocks in December and sell in January)	69 (13.8%)	79 (15.8%)	146 (29.2%)	110 (22%)	96 (19.2%)	500 (100%)
6.	April effect (buy stocks in March and sell in April)	87 (17.4%)	88 (17.6%)	101 (20.2%)	162 (32.4%)	62 (12.4%)	500 (100%)
7.	Day of the week effect (buy Monday sell Friday)	128 (25.6%)	77 (15.4%)	111 (22.2%)	132 (26.4%)	52 (10.4%)	500 (100%)
8.	Intra month effect	52 (10.4%)	106 (21.2%)	115 (23%)	151 (30.2%)	76 (15.2%)	500 (100%)
9.	Pre holiday effect	72 (14.4%)	70 (14%)	106 (21.2%)	165 (33%)	87 (17.4%)	500 (100%)
10.	Momentum effect (buy past winners)	22 (4.4%)	86 (17.2%)	135 (27%)	200 (40%)	57 (11.4%)	500 (100%)
11.	Contrarian effect (buy past losers)	38 (7.6%)	32 (6.4%)	129 (25.8%)	248 (49.6%)	53 (10.6%)	500 (100%)
12.	Follow the investment behavior of FIIs	47 (9.4%)	68 (13.6%)	84 (16.8%)	247 (49.4%)	54 (10.8%)	500 (100%)
13.	Buy stocks whose price has crossed 52 week high	30 (6%)	123 (24.6%)	59 (11.8%)	208 (41.6%)	80 (16%)	500 (100%)
14.	Buy stocks whose price has gone down by 20%	108 (21.6%)	49 (9.8%)	97 (19.4%)	161 (32.2%)	85 (17%)	500 (100%)
15.	Buy stock whose price has gone up by 20%	53 (10.6%)	108 (21.6%)	62 (12.4%)	178 (35.6%)	99 (19.8%)	500 (100%)
16.	Buy stock for which a good news is expected	26 (5.2%)	69 (13.8%)	103 (20.6%)	217 (43.4%)	85 (17%)	500 (100%)
17.	Buy stock which is expected to announce bonus issue and/or stock split	23 (4.6%)	66 (13.2%)	120 (24%)	217 (43.4%)	74 (14.8%)	500 (100%)

Contd...

18.	Buy stock which is most actively traded	22 (4.4%)	86 (17.2%)	107 (21.4%)	180 (36%)	105 (21%)	500 (100%)
19.	Buy stock which has announced good quarterly results	52 (10.4%)	55 (11%)	111 (22.2%)	196 (39.2%)	86 (17.2%)	500 (100%)
20.	Buy stocks on the basis of 30 days moving average	45 (9%)	71 (14.2%)	115 (23%)	183 (36.6%)	86 (17.2%)	500 (100%)
21.	Buy stocks on the basis of Relative Strength Index	31 (6.2%)	27 (5.4%)	108 (21.6%)	212 (42.4%)	122 (24.4%)	500 (100%)

Source: Author's calculation

- 47.8% investors agree that size effect strategy is important for them while making the investment as they are of the view that investing in the small company will bring them more returns rather than investing in the large company and 7.8% investors are strongly agreed with the size effect strategy. While 18% investors are strongly disagreed that they use size effect strategy while making the investment.
- 20.2% investors agree that value effect strategy is important for them while making the investment as they buy the stock which has the low book to market equity stock and 6.4% investors are strongly agreed with the value effect strategy. While 18% investors are strongly disagreed and 29.6% investors disagree that they use value effect strategy while making the investment.
- 24% investors agree that leverage effect strategy is important for them while making the investment as they buy the stock of high levered firm and 7.2% investors are strongly agreed with the leverage effect strategy. While 13.4% investors are strongly disagreed and 20.4% investors disagree that they use leverage effect strategy while making the investment.
- 36% investors agree that P/E effect strategy is important for them while making the investment as they buy the low P/E stocks and 12.4% investors are strongly agreed with the P/E effect strategy. While 11.2% investors are strongly disagreed and 18.6% investors disagree that they use P/E effect strategy while making the investment.
- 22% investors agree that January seasonality effect strategy is important for them while making the investment as they buy stocks in December and sell in January and 19.2% investors are strongly agreed with the January seasonality effect strategy. While 13.8%

investors are strongly disagreed and 15.8% investors disagree that they use size effect strategy while making the investment.

- 32.4% investors agree that april effect strategy is important for them while making the investment as they buy stocks in March and sell in April and 12.4% investors are strongly agreed with the april effect strategy. While 17.4% investors are strongly disagreed and 17.6% investors disagree that they use april effect strategy while making the investment.
- 26.4% investors agree that day of the week effect strategy is important for them while making the investment as they buy Monday sell Friday and the expected returns are not at all same for all days of the week. The return on Monday is less as compared to the return on Friday and 10.4% investors are strongly agreed with the day of the week effect strategy. While 25.6% investors are strongly disagreed and 15.4% investors disagree that they use the day of the week effect strategy while making the investment.
- 30.2% investors agree that intra month effect strategy is important for them while making the investment and 15.2% investors are strongly agreed with the intra month effect strategy. While 10.4% investors are strongly disagreed and 21.2% investors disagree that they use intra month effect strategy while making the investment.
- 33% investors agree that pre-holiday effect strategy is important for them while making the investment because the returns are higher in pre holiday as compared to the post-holiday and 17.4% investors are strongly agreed with the pre-holiday effect strategy. While 14.4% investors are strongly disagreed and 14% investors disagree that they use pre-holiday effect strategy while making the investment.
- 40% investors agree that momentum effect strategy is important for them while making the investment as they believe that what had gone up in the past will probably go up in the future it means that they will buy the past winners and 11.4% investors are strongly agreed with the momentum effect strategy. While 4.4% investors are strongly disagreed and 17.2% investors disagree that they use momentum effect strategy while making the investment.

- 49.6% investors agree that contrarian effect strategy is important for them while making the investment as they will buy the past losers and 10.6% investors are strongly agreed with the contrarian effect strategy. While 7.6% investors are strongly disagreed and 6.4% investors disagree that they use contrarian effect strategy while making the investment.
- 49.4% investors agree that Follow the investment behavior of FIIs strategy is important for them while making the investment and 10.8% investors are strongly agreed with the Follow the investment behavior of FIIs strategy. While 9.4% investors are strongly disagreed and 13.6% investors disagree that they use Follow the investment behavior of FIIs strategy while making the investment.
- 41.6% investors agree that Buy stocks whose price has crossed 52-week high strategy is important for them while making the investment as the investors check the price of the stock during the last 52 weeks and 16% investors are strongly agreed with the Buy stocks whose price has crossed 52-week high strategy. While 6% investors are strongly disagreed and 24.6% investors disagree that they use Buy stocks whose price has crossed 52-week high strategy while making the investment.
- 32.2% investors agree that Buy stocks whose price has gone down by 20% strategy is important for them as they believe that they will buy the stock when the price has gone down and will sell the stock as the price has gone up while making the investment and 17% investors are strongly agreed with the Buy stocks whose price has gone down by 20% strategy. While 21.6% investors are strongly disagreed and 9.8% investors disagree that they use Buy stocks whose price has gone down by 20% strategy while making the investment.
- 35.6% investors agree that Buy stock whose price has gone up by 20% strategy is important for them while making the investment as they believe that the price has gone up and they will buy the stock and assume that the price will rise more again in the future and they will sell at that time and 19.8% investors are strongly agreed with the Buy stocks whose price has gone up by 20% strategy. While 10.6% investors are strongly disagreed and 21.6% investors disagree that they use Buy stocks whose price has gone up by 20% strategy while making the investment.

- 43.4% investors agree that they buy the stock for which good news is expected strategy is important for them while making the investment and 17% investors are strongly agreed with the Buy stock for which good news is expected strategy. While 10.6% investors are strongly disagreed and 21.6% investors are disagreed that they use buy stock for which good news is expected strategy while making investment.
- 43.4% investors agree that they buy the stock which is expected to announce bonus issue and/or stock split strategy is important for them while making investment and 14.8% investors are strongly agreed with the Buy stock which is expected to announce bonus issue and/or stock split strategy. While 4.6% investors are strongly disagreed and 13.2% investors disagree that they use Buy stock which is expected to announce bonus issue and/or stock split strategy while making investment.
- 36% investors agree that they buy the stock which is most actively traded strategy is important for them while making investment and 21% investors are strongly agreed with the Buy stock which is most actively traded strategy. While 4.4% investors are strongly disagreed and 17.2% investors disagree that they use Buy stock which is most actively traded strategy while making investment.
- 39.2% investors agree that Buy stock which has announced good quarterly results strategy is important for them while making investment and 17.2% investors are strongly agreed with the Buy stock which has announced good quarterly results strategy. While 10.4% investors are strongly disagreed and 11% investors disagree that they use Buy stock which has announced good quarterly results strategy while making investment.
- 36.6% investors agree that Buy stocks on moving average of 30 days strategy is important for them while making the investment as they consider the amount paid by the investors in the last six trading weeks and 17.2% investors are strongly agreed with the Buy stocks on moving average of 30 days strategy. While 9% investors are strongly disagreed and 14.2% investors disagree that they use Buy stocks on moving average of 30 days strategy while making investment.

- 42.4% investors agree that Buy stocks with Relative Strength Index strategy is important for them while making the investment as it measures the speed and change in the price movements and 24.4% investors are strongly agreed with the Buy stocks with Relative Strength Index strategy. While 6.2% investors are strongly disagreed and 5.4% investors disagree that they use Buy stocks with Relative Strength Index strategy while making investment.

Table: 4.3 Mean Score of Investment Strategies of Individual Investors

Sr. No.	Strategies	Mean Score
1.	Buy stock for which a good news is expected	3.5320
2.	Buy stock which is most actively traded	3.5200
3.	Buy stock which is expected to announce bonus issue and/or stock split	3.5060
4.	Contrarian effect(buy past losers)	3.4920
5.	Buy stock which has announced good quarterly results	3.4180
6.	Buy stocks on 30 days moving average	3.3880
7.	Follow the investment behavior of FIIs	3.3860
8.	Buy stocks whose price has crossed 52 week high	3.3700
9.	Momentum effect (buy past winners)	3.3680
10.	Buy stocks with Relative Strength Index	3.3340
11.	Buy stock whose price has gone up by 20%	3.3240
12.	Pre holiday effect	3.2500
13.	P/E effect (buy low P/E stocks)	3.1980
14.	Intra month effect	3.1860
15.	January Seasonality effect (buy stocks in December and sell in January)	3.1700
16.	Buy stocks whose price has gone down by 20%	3.1320
17.	Size effect (buy small cap stocks)	3.0900
18.	April effect(buy stocks in March and sell in April)	3.0480
19.	Leverage effect(buy stocks of highly levered companies)	2.9120
20.	Day of the week effect (buy Monday sell Friday)	2.8060
21.	Value effect(buy high Book to market equity stocks)	2.6740

Source: Author's calculation

Table 4.3 exhibits the mean scores of the particular investment strategies in increasing order. It can be observed from the results that five most preferred investment strategies as perceived by the respondents are:

1. Buy stock for which good news is expected.
2. Buy stock which is most actively traded.

3. Buy stock which is expected to announce bonus issue and/or stock split.
4. Contrarian effect (buy past losers).
5. Buy stock which has announced good quarterly results.

There are certain strategies which are least preferred by the investor while investing in the stock market. These strategies are April effect (mean score 3.0480), Leverage effect (mean score 2.9120), Day of the week effect (mean score 2.8060) and Value effect (mean score 2.6740)

From the above discussion, it has been found that there are certain strategies which are mostly preferred by the investors while investing in the stock market and there are certain strategies which are least preferred by the investors while investing in the stock market.

Chapter- 5

INVESTMENT DECISIONS AND INFLUENTIAL FACTORS

The chapter reveals the relation of Demographic Attributes, Personality Traits, Emotional Intelligence and Behavioral Biases with Investment Decisions of Investors. Multiple Regression test was used. Section 5.1 exhibits the overall relation among Demographic Attributes, Personality Traits, Emotional Intelligence and Behavioral Biases with Investment Decisions of Investors. Section 5.2 presents the relation between the dimensions of Demographic Attributes and Investment Decisions of Investors. Section 5.3 presents the relation between the dimensions of Personality Traits and Investment Decisions of Investors. Section 5.4 presents the relation between the dimensions of Emotional Intelligence and Investment Decisions of Investors. Section 5.5 presents the relation between the dimensions of Behavioral Biases and Investment Decisions of Investors. Section 5.6 presents the risk tolerance as a mediating variable.

5.1 RELATION OF DEMOGRAPHIC ATTRIBUTES, PERSONALITY TRAITS, EMOTIONAL INTELLIGENCE AND BEHAVIORAL BIASES WITH INVESTMENT DECISIONS OF INVESTORS

This section has attempted to identify the independent variables (Demographic Attributes, Personality Traits, Emotional Intelligence and Behavioral Biases) which are linearly related to the dependent variable (Investment Decisions).

In this section, the following hypotheses have been tested:

H₆: There is a relation between Demographic Attributes and Investment Decisions of Investors

H₇: There is a relation between Personality Traits and Investment Decisions of Investors

H₈: There is a relation between Emotional Intelligence and Investment Decisions of Investors

H₉: There is a relation between Behavioral Biases and Investment Decisions of Investors

Multiple Regression has been used to find the intercept and coefficients for the following regression model:

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + \dots + b_{14}X_{14}$$

This equation includes eleven demographic variables, personality traits, behavioral biases and emotional intelligence. Out of the alternative methods of selection of variables in Multiple Regression, viz. Confirmatory Specification Approach, Sequential Search Approaches (Backward Elimination and Stepwise Elimination) and Combinatorial approach whereby all the variables are entered in the model and have been selected and are used in the analysis. Stepwise elimination method has also been run to compare the results of the confirmatory approach with the results of this sequential approach. The close examination of the results indicated that the prediction and explanation strengths of both the methods are almost same. So, the result of the confirmatory regression model has been used in the analysis.

The basic assumptions of regression analysis are:

- The error terms should be normally distributed.
- The linear relation exists between dependent and independent variables.
- The variance of the error term should be constant.
- There should not be multicollinearity in the different independent variables.

To check the compliance of the above assumptions:

- In order to check multicollinearity:
Tolerance
VIF (Variation Inflation Factor) have been calculated.

5.1.1 Selection of Dependent Variables and different Independent Variables

For the dependent variable - the summated mean score for 35 statements has been used.

Independent variables are usually selected in two ways. The first approach is to identify variables from previous research. The second approach is to select the different variables for which no previous research has been done (Hair *et al.*, 1995). The first approach has been used here.

The independent variables consist of Demographic Attributes, Personality Traits, Emotional Intelligence and Behavioral Biases. The eleven demographic attributes used include age, marital status, education, gender, and income. The summated average score of Personality Traits, Emotional Intelligence, and Behavioral Biases have been used. The total fourteen independent variables have been used and shown in Table 5.1

Table 5.1: Coding of Independent Variables

Sr. No.	Independent variables	Coding
1.	Demographic Variables	
	Gender	X₁
	Age	X₂, X₃, X₄
	Marital status	X₅
	Educational qualification	X₆, X₇, X₈
	Income	X₉, X₁₀, X₁₁
2.	Personality Traits	X₁₂
3.	Emotional Intelligence	X₁₃
4.	Behavioral Biases	X₁₄

Source: Author's calculation

The independent variables Personality Traits, Emotional Intelligence and Behavioral Biases are on the metric scale and the Demographic Attributes are on the nominal scale. The demographic Attributes are converted into dummy variables to make them fit for Multiple Regression Analysis. The conversion of Demographic Attributes into dummy variables has been shown in Table 5.2

Table 5.2: Dummy Coding of Demographic Variables

Sr. No.	Name of variable	Categories	Dummy Variable Label	Levels
1.	Gender	1) Male	X ₁	1, if Male 0, if otherwise
		2) Female		
2.	Age	1) Below or equal to 30	X ₂	1, if Below or equal to 30 0, if otherwise
		2) 31- 40 years	X ₃	1, if 31- 40 years 0, if otherwise
		3) 41-50 years	X ₄	1, if 41-50 years 0, if otherwise
		4) Above 50 years		
3.	Marital Status	1) Married	X ₅	1, if Married 0, if otherwise
		2) Unmarried		
4.	Educational Qualification	1) Bachelors	X ₆	1, if Bachelors 0, if otherwise
		2) Masters	X ₇	1, if Masters 0, if otherwise
		3) M. Phil	X ₈	1, if M. Phil 0, if otherwise
		4) Doctorate		
5.	Income	1) Below or equal to 200000	X ₉	1, if Below or equal to 200000 0, if otherwise
		2) 200001-500000	X ₁₀	1, if 200001-500000 0, if otherwise
		3) 500001-1000000	X ₁₁	1, if 500001-1000000 0, if otherwise
		4) Above 1000000		

Source: Author's calculation

The table 5.3 exhibits that the significance of the model at 95 percent confidence level. It shows that the model develops the level of prediction at 0.667 or 66.7 per cent which is good. The coefficient of determination means the change in the dependent variable is defined by the change in the independent variables. The coefficient of determination is R-square value which shows the variability of the dependent variable is explained by the independent variable. The independent variable explains 44.5% of the dependent variable (investment decisions). The R-square value should be greater than 0.10 (Falk and Miller, 1992)

Table 5.3: Model Summary of different independent variables and Investment Decisions

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.667	.445	.429	.28374

Source: Author's calculation

Table 5.4: Model Fitness in Multiple Regression of Investment Decisions and Influential Factors

Model 1	Sum of Squares	Df	Mean Square	F	Sig.
Regression	31.362	14	2.240	27.826	.000
Residual	39.045	485	.081		
Total	70.407	499			

Source: Author's calculation

ANOVA is used to find out the significance of the model used in the study. The F- ratio shows the fitness of the overall regression. Table 5.4 exhibits that the different independent variables used in the study are significant at $F(14, 485) = 27.826, p < 0.05$. It shows that the model used in the study is fit.

The table 5.5 exhibits that the t-test is significant for the variables X_{12} , X_{13} , and X_{14} at 0.05 level. The Intercept is 2.274. The coefficients are 0.316(X_{12}), 0.182(X_{14}) and 0.441(X_{13}) which is for the significant variables. Thus, the hypothesis H_6 is not accepted and H_7 , H_8 , and H_9 are accepted. There is a significant relation between Investors Personality traits and their Investment Decisions. There is a significant relation between Investors Emotional Intelligence and Investment Decisions. There is a significant relation between Investors Behavioral Biases and Investment Decisions.

There is no significant relation between demographic attributes and Investors Investment Decisions. X_{12} (Personality Traits) indicates that this variable is directly related with the dependent variable (Investment Decisions). X_{14} (Behavioral Biases) indicates that this variable is directly related with the dependent variable (Investment Decisions). The coefficient of variable X_{13} (Emotional Intelligence) has the higher value than other

independent variables. It shows that investors' emotional intelligence is the main predictor of investors' investment decisions. The Investors who have high score on emotional intelligence can take good decisions (Pervez, 2014). The results also gain support from previous findings (Debusk and Austin, 2011; Idris, 2014; Creevy *et al.*, 2011).

Table 5.5: Coefficients from Multiple Regression models of Investment Decisions and Influential Factors

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
Demographic Attributes	(Constant)	2.274	.207		11.007	.000		
	Male (X1)	.003	.041	.003	.081	.936	.583	1.176
	Female							
	Below or equal to 30 (X2)	.105	.116	-.046	-.899	.369	.229	4.373
	31- 40 years (X3)	-.085	.105	-.046	-.806	.421	.183	5.456
	41-50 years (X4)	.173	.131	-.053	-1.323	.186	.370	2.704
	Above 50 years							
	Married (X5)	.042	.045	-.027	-.938	.348	.723	1.383
	Unmarried							
	Bachelors (X6)	.021	.059	.012	.362	.718	.526	1.902
	Masters (X7)	.039	.048	.024	.823	.410	.678	1.474
	M.Phil (X8)	-.010	.113	-.005	-.092	.926	.328	3.052
	Doctorate							
	1) Below 200000 (X9)	.056	.062	0.036	0.898	.369	.376	2.662
	2) 200001-500000 (X10)	.055	.059	.033	.921	.357	.471	2.121
	3) 500001-1000000 (X11)	.009	.079	.009	.115	.908	.151	6.636
4) Above 1000000								
Personality Traits (X12)	.316	.040	.305	7.980	.000	.784	1.275	
Behavioral Biases (X14)	.182	.041	.177	4.469	.000	.688	1.453	
Emotional Intelligence (X13)	.441	.035	.515	12.765	.000	.701	1.426	

Source: Author's calculation

Investment Decisions of the investors does not depend on any of the demographic attributes. There is no disparity in the Investors Investment Decisions regarding age groups, gender, marital status, different educational qualification and different income groups of the investors. Females and males take same risk when they invest in stock market. The investors with any age group take the same risk when they invest in stock market. The results also gain support from the prior findings (Subramaniam and

Athiyaman, 2016). There is no change in the Investors Investment Decisions whether married or unmarried while investing in the stock market. There is no change in the Investment Decisions of the investors with any qualification whether he is Graduate, Postgraduate, M. Phil or Doctorate while investing in stock market. There is no change in the Investment Decisions of the investors with any income group whether the annual income of the investor is less than 200000, 200001-500000, 500001-1000000 and above 1000000 while investing in stock market. These results cannot be accepted without examining the compliance with the assumptions of multiple regression analysis. An analysis of collinearity statistics (Tolerance and VIF) in table 5.5 shows that all the values of tolerance are higher than 0.10 and VIF values of all variables are less than 10. It has been found that there is no multicollinearity among the different independent variables.

Therefore, based on the above analysis the predictive regression equation is:

$$Y = 2.274 + 0.316 X_{12} + 0.441 X_{13} + 0.182 X_{14}$$

Where,

Y= Investment Decision

X₁₂ = Personality Traits

X₁₃ = Emotional Intelligence

X₁₄ = Behavioral Biases

5.2 RELATION BETWEEN DEMOGRAPHIC ATTRIBUTES AND INVESTMENT DECISIONS OF INVESTORS

This section was related to study the relation between the demographic attributes and Investment Decisions of the investors. The in-depth study has been done in order to find out which of the demographic attributes are related to Investment Decisions and which are not related to Investment Decisions. Thus, multiple regression analysis has been used.

H_{6 (a)}: There is relation between Gender and Investment Decisions of Investors

H_{6 (b)}: There is relation between Age and Investment Decisions of Investors

H_{6 (c)}: There is relation between Marital Status and Investment Decisions of Investors

H_{6 (d)}: There is relation between Educational Qualification and Investment Decisions of Investors

H_{6 (e)}: There is relation between Income and Investment Decisions of Investors

Table 5.6: Model Summary of Demographic Attributes and Investment Decisions of the investors

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.448	.200	.192	.44513

Source: Author's calculation

The table 5.6 exhibits that the significance of the model at 95 percent confidence level. It shows that the model develops the level of prediction at 0.448 or 44.8 per cent which is good. The coefficient of determination means the change in the dependent variable is defined by the change in the independent variables. The coefficient of determination is R-square value which shows the variability of the dependent variable is explained by the independent variable. The independent variable explains 20% of the dependent variable (investment decisions). The R-square value should be greater than 0.10 (Falk and Miller, 1992).

Table 5.7: Model Fitness of Demographic Attributes and Investment Decisions of the investors

Model	Sum of Squares	Df	Mean Square	F	Sig.
1					
Regression	24.537	5	4.907	24.768	.000
Residual	97.880	494	.198		
Total	122.417	499			

Source: Author's calculation

ANOVA is used to find out the significance of the model used in the study. The F- ratio shows the fitness of the overall regression. Table 5.7 exhibits that the different independent variables used in the study are significant at $F(5, 494) = 24.768, p < 0.05$. It shows that the model used in the study is fit.

Table 5.8: Coefficients from models of Demographic Attributes and Investment Decisions of the investors

Model		Coefficients						
		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
Demographic Attributes	(Constant)	2.832	.192		14.723	.000		
	Male (X1)	-.030	.061	-.027	-.494	.622	.654	1.528
	Female							
	Below or equal to 30 (X2)	.217	.135	.207	1.609	.108	.118	8.447
	31- 40 years (X3)	-.085	.105	-.046	-.806	.421	.183	5.456
	41-50 years (X4)	.173	.131	-.053	-1.323	.186	.370	2.704
	Above 50 years							
	Married (X5)	-.023	.074	-.021	-.313	.755	.414	2.418
	Unmarried							
	Bachelors (X6)	.021	.059	.012	.362	.718	.526	1.902
	Masters (X7)	.039	.048	.024	.823	.410	.678	1.474
	M. Phil (X8)	-.271	.179	-.115	-1.520	.129	.342	3.052
	Doctorate							
	1) Below or equal to 200000 (X9)	-.305	.158	-.267	-1.931	.054	.102	9.803
	2) 200001-500000 (X10)	-.185	.133	-.186	-1.396	.163	.110	9.093
	3) 500001-1000000 (X11)	-.079	.125	-.071	-.629	.530	.155	6.441
4) Above 1000000								

Source: Author's calculation

The table 5.8 exhibits that the t-test is significant for the variables at 0.05 level. Thus, the hypotheses $H_{6(a)}$, $H_{6(b)}$, $H_{6(c)}$, $H_{6(d)}$ and $H_{6(e)}$ are not accepted. It shows that there is no significant relation between different age groups and investors' investment decisions, gender and investors' investment decisions, marital status, and investors' investment decisions, different educational qualification and investors' investment decisions, different income groups and investors' investment decisions.

The Intercept is 2.832. The dependent variable i.e. Investment decisions will remain same 2.832 when there is change in independent variables or there is no change in independent variables, there will no change in Investment decisions. The Investment decision of the

investors does not depend on any of the demographic attributes. There is no disparity in the Investors Investment Decisions regarding different age groups, gender, marital status, different educational qualification and different income groups of the investors. Females and males take same risk when they invest in the stock market. The investors with any age group take the same risk when they invest in the stock market. The results also gain support from the prior findings (Subramaniam and Athiyaman, 2016).

There is no change in the investors investment decisions whether married or unmarried while investing in the stock market. There is no change in the Investors Investment decisions with any qualification whether he is Graduate, Postgraduate, M. Phil or Doctorate while investing in the stock market. There is no change in the Investment decisions of the investors with any income group whether the annual income of the investor is less than 200000, 200001-500000, 500001-1000000 and above 1000000 while investing in stock market (Geetha and Ramesh, 2012; Obamuyi, 2013).

Therefore, based on the above analysis the predictive regression equation is:

$$Y = 2.832$$

Where, Y= Investment Decisions

5.3 RELATION BETWEEN INVESTORS PERSONALITY TRAITS AND THEIR INVESTMENT DECISIONS

This section was related to study the relation between the Investors Personality traits and Investment Decisions. The in-depth study has been done to know which Investors Personality traits are related with Investment Decisions and which are not related to the Investment Decisions. Thus, multiple regression analysis has been used. The Big Five personality dimensions include Agreeableness, Extroversion, Conscientiousness, Openness, and Neuroticism. So, these dimensions are assigned with the variables as in table 5.9

H_{7(a)}: There is relation between Agreeableness and Investment Decisions of Investors

H₇ (b): There is relation between Extroversion and Investment Decisions of Investors

H₇ (c): There is relation between Conscientiousness and Investment Decisions of Investors

H₇ (d): There is relation between Openness to Experience and Investment Decisions of Investors

H₇ (e): There is relation between Neuroticism and Investment Decisions of Investors

Table 5.9: Coding of dimensions of Personality Traits

Sr. No.	Personality Traits	Coding
1.	Agreeableness	X ₁₂₁
2.	Extroversion	X ₁₂₂
3.	Conscientiousness	X ₁₂₃
4.	Openness	X ₁₂₄
5.	Neuroticism	X ₁₂₅

Source: Author's calculation

The table 5.10 reveals that the significance of the model at 95 percent confidence interval. It shows that the model develops a prediction level at 0.603 or 60.3 per cent which is good. The coefficient of determination means the change in the dependent variable is defined by the change in the independent variables. The coefficient of determination is R-square value which shows the variability of the dependent variable is explained by the independent variable. The independent variable explains 36.4% of the dependent variable (investment decisions). The R-square value should be greater than 0.10 (Falk and Miller, 1992)

Table 5.10: Model Summary of Personality Traits and Investment Decisions of the investors

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.603	.364	.358	.38693

Source: Author's calculation

ANOVA is used to find out the significance of the model used in the study. The F- ratio shows the fitness of the overall regression. The table 5.11 exhibits that the different independent variables used in the study are significant at $F(5, 494) = 56.584, p < 0.05$. It shows that the model used in the study is fit.

Table 5.11: Model Fitness in Multiple Regression of Investors Personality Traits and their Investment Decisions

Model	Sum of Squares	Df	Mean Square	F	Sig.
1					
Regression	42.357	5	8.471	56.584	.000
Residual	73.959	494	.150		
Total	116.316	499			

Source: Author's calculation

The table 5.12 exhibits that the t-test is significant for the variables X_{121} , X_{122} , and X_{123} at 0.05 level. Thus, the hypotheses $H_{7(d)}$ and $H_{7(e)}$ are not accepted and $H_{7(a)}$, $H_{7(b)}$, and $H_{7(c)}$ are accepted. It means that there is a significant relation between agreeableness trait and investor's investment decisions, extroversion trait and investor's investment decisions, openness to experience trait and investor's investment decisions.

Table 5.12: Coefficients from Multiple Regression models Model Fitness in Multiple Regression of Personality Traits and Investment Decisions of the investors

Model		Coefficients ^a						
		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
Personality Traits	(Constant)	1.789	.139		12.875	.000		
	Agreeableness (X_{121})	.461	.046	.493	10.083	.000	.538	1.857
	Extraversion (X_{122})	.148	.044	.163	3.376	.001	.551	1.816
	Conscientiousness (X_{123})	-.269	.051	-.244	-5.247	.000	.595	1.682
	Openness (X_{124})	-.006	.042	-.006	-.136	.892	.740	1.351
	Neuroticism (X_{125})	.022	.040	.025	.537	.592	.591	1.693

Source: Author's calculation

There is no significant relation between openness trait and investors investment decisions, neuroticism trait and investor's investment decisions. The Intercept is 1.789 and the coefficients are 0.461(X_{121}), 0.148(X_{122}), and - 0.269(X_{124}) which is for significant variables. X_{121} (Agreeableness) has the largest value among the coefficients as in table 5.12. So, we can say that Agreeableness is the main predictor of Investors Investment decisions. The investors who have high score on agreeableness invest more in the stock market. They are cooperative; respect every person and their opinion. They are more reliable persons. When there is an increase of one point in agreeableness it will result into increase of 0.461 points in Investors Investment decisions.

The investors who are extrovert enjoy spending time with the other people and they have positive emotions and are energetic persons. The investors who have high score on extraversion invest more in stock market. When there is an increase of one point in extraversion it will result into an increase of 0.148 points in Investors Investment decisions. The people are conscientious they invest less in stock market. Conscientious people are dependable, responsible, organized and systematic. They have high standards and always strive to achieve goals. The people who are conscientious mostly avoid trouble and achieve high levels of success. When there is increase of one point in conscientiousness it will result into decrease of 0.269 points in investors' investment decisions.

Investors who score high on openness to experience trait they are always ready for new things and take more risk. (Dohmen *et al.*, 2007, Kubilay and Bayrakdaroglu, 2016). They are always ready to accept the change in the market regarding the investment and change their portfolio according to the changes occurs in the situation of the market. The investors who score high on neuroticism are not emotional. Their reactions are more intense than normal reactions. They take ordinary situations as frightening and minor disturbance as more complicated. Their negative reaction goes for the long period of time which shows that they are usually in a bad mood. Therefore, there is no relation between neuroticism trait and investors investment decisions. The results of the present study also gain support from the previous findings (Parameshwari and Krishnan, 2015; Chavali and Mohanraj, 2016).

These results cannot be accepted without examining the compliance with the assumptions of multiple regression analysis. An analysis of collinearity statistics (Tolerance and VIF) in the table 5.12 shows that all the tolerance values are higher than 0.10 and VIF values are less than 10 for all variables. It has been found that there is no multicollinearity in the different independent variables.

Therefore, based on the above analysis the predictive regression equation is:

$$Y = 1.789 + 0.461 X_{121} + 0.148 X_{122} - 0.269 X_{123}$$

Where,

Y= Investment Decision

X₁₂₁ = Agreeableness

X₁₂₂ = Extraversion

X₁₂₃ = Conscientiousness

5.4 RELATION BETWEEN EMOTIONAL INTELLIGENCE AND INVESTMENT DECISIONS OF INVESTORS

This section was related to study relation between the Investors Emotional Intelligence and their Investment Decisions. The in-depth study has been done in order to find out which dimensions of Emotional Intelligence are related to Investment Decisions and which are not related to Investment Decisions. Thus, multiple regression analysis has been used. The dimensions of Emotional Intelligence are self-awareness, handling emotions, motivation, empathy and social skills. So, these dimensions are assigned with the variables as in table 5.13

Table 5.13: Coding of dimensions of Emotional Intelligence

Sr. No.	Emotional Intelligence	Coding
1.	Self Awareness	X ₁₃₁
2.	Handling Emotions	X ₁₃₂
3.	Motivation	X ₁₃₃
4.	Empathy	X ₁₃₄
5.	Social Skills	X ₁₃₅

Source: Author's calculation

H_{8(a)}: There is relation between Self Awareness and Investment Decisions of Investors

H_{8(b)}: There is relation between Handling Emotions and Investment Decisions of Investors

H_{8(c)}: There is relation between Motivation and Investment Decisions of Investors

H_{8(d)}: There is relation between Empathy and Investment Decisions of Investors

H_{8(e)}: There is relation between Social Skills and Investment Decisions of Investors

The table 5.14 exhibits that the significance of the model at 95 percent confidence interval. It shows that the model develops a prediction level at 0.664 or 66.4 per cent which is good. The coefficient of determination means the change in the dependent variable is defined by the change in the independent variables. The coefficient of determination is R-square value which shows the variability of the dependent variable is explained by the independent variable. The independent variable explains 44.1% of the dependent variable (investment decisions). The R-square value should be greater than 0.10 (Falk and Miller, 1992; Cohen, 1988)

Table 5.14: Model Summary of Emotional Intelligence and Investment Decisions of Investors

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.664	.441	.435	.36278

Source: Author's calculation

Table 5.15: Model Fitness of Emotional Intelligence and Investment Decisions of Investors

Model	Sum of Squares	Df	Mean Square	F	Sig.
1					
Regression	51.301	5	10.260	77.959	.000
Residual	65.015	494	.132		
Total	116.316	499			

Source: Author's calculation

ANOVA is used to find out the significance of the model used in the study. The F- ratio shows the fitness of the overall regression. Table 5.15 exhibits that the different independent variables used in the study are significant at $F(5, 494) = 77.959, p < 0.05$. It shows that the model used in the study is fit.

The table 5.16 exhibits that the t-test is significant for $X_{131}, X_{132}, X_{133}, X_{134}, X_{135}$ at 0.05 level. Thus, the hypotheses $H_{8(a)}, H_{8(b)}, H_{8(c)}, H_{8(d)}, H_{8(e)}$ are accepted. It shows that there is a significant relation between self-awareness and investor's investment decisions, handling emotions and investor's investment decisions, motivation and investor's investment decisions, empathy and investor's investment decisions, social skills and investor's investment decisions.

Table 5.16: Coefficients from Multiple Regression models of Emotional Intelligence and Investment Decisions of Investors

Model		Coefficients ^a						
		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
Emotional Intelligence	(Constant)	.843	.117		7.180	.000		
	Self Awareness (X_{131})	.228	.037	.290	6.180	.000	.513	1.950
	Handling Emotions (X_{132})	.077	.030	.098	2.584	.010	.790	1.265
	Motivation (X_{133})	.285	.047	.311	6.110	.000	.437	2.288
	Empathy (X_{134})	-.088	.038	-.112	-2.301	.022	.473	2.112
	Social Skills (X_{135})	.165	.038	.207	4.343	.000	.498	2.009

Source: Author's calculation

The Intercept is 0.843. The coefficients are 0.228(X_{131}), 0.077(X_{132}), 0.285(X_{133}), -0.088 (X_{134}), and 0.165(X_{135}) which is for significant variables. X_{133} (Motivation) has the largest value among the coefficients as in table 5.16. So, we can say that motivation is the main predictor of Investment decisions among emotional intelligence dimensions. There is a relation between investors who are self aware and their Investment decisions. When there is increase of one point in self awareness it will result in increase of 0.228 points in investors' Investment decisions. The investors recognize their strengths and weaknesses will invest more in stock market. The investors who don't recognize their strengths and

weaknesses will invest more in stock market. There is a relation between investors who can handle their emotions and their Investment decisions. When there is increase of one point in handling emotions it will result in increase of 0.077 points in investors' Investment decisions. Handling emotions will help the individual investors to take correct decision when they are in difficult situations and when they can't handle their emotions they will have to suffer losses in future. The investors who are positive will invest more in stock market, when they are under pressure.

When there is increase of one point in motivation it will result in increase of 0.285 points in investors' investment decisions. There is a relation between motivation and investors investment decisions. The investors who are always ready to work hard to achieve their goals and don't have negative view point take more risk. There is a relation between empathy and investors investment decisions. When there is increase of one point in empathy it will result in decrease of 0.088 points in investors' investment decisions. The person who understand and is delicate to the sentiments of others or having the capacity to detect what others feel invest less in the stock market. There is a relation between social skills and investors' investment decisions. When there is increase of one point in social skills it will result in increase of 0.165 points in investors' investment decisions. The persons who have the capacity to examine social circumstances and smoothness in collaborating with others invest more in stock market. The results of the present study also gain support from previous findings (Tanvir *et al.*, 2016)

Emotional Intelligence was known among the five different dimensions of Goleman. Emotional Intelligence influences the investor's investment decisions and it has been known from the literature (Debusk and Austin, 2011; Creevy *et al.*, 2011; Idris, 2014). This study reveals the influence of each dimension of emotional intelligence on investors investment decisions.

These results cannot be accepted without examining the compliance with the assumptions o multiple regression analysis. An analysis of collinearity statistics (Tolerance and VIF) in the table 5.16 shows that all the tolerance values are higher than 0.10 and VIF values are less than 10 for all variables. It has been found that there is no multicollinearity in the different independent variables.

Therefore, based on the above analysis the predictive regression equation is:

$$Y = 0.843 + 0.228 X_{131} + 0.077 X_{132} + 0.285 X_{133} - 0.088 X_{134} + 0.165 X_{135}$$

Where,

Y = Investment Decision

X₁₃₁ = Self awareness

X₁₃₂ = Handling Emotions

X₁₃₃ = Motivation

X₁₃₄ = Empathy

X₁₃₅ = Social Skills

5.5 RELATION BETWEEN BEHAVIORAL BIASES AND INVESTMENT DECISIONS OF INVESTORS

This section was related to study the relation between Behavioral Biases and Investment Decisions of the investors. The in-depth study has been done in order to find out which dimensions of Behavioral Biases are related to Investment Decisions and which are not related to Investment Decisions. Thus, multiple regression analysis has been used. The dimensions of Behavioral Biases include are overconfidence, conservatism, herding, and regret. So, these dimensions are assigned with the variables as in table 5.17

Table 5.17: Coding of dimensions of Behavioral Biases

Sr. No.	Behavioral Biases	Coding
1.	Overconfidence	X ₁₄₁
2.	Conservatism	X ₁₄₂
3.	Herding	X ₁₄₃
4.	Regret	X ₁₄₄

Source: Author's calculation

H_{9 (a)}: There is relation between Overconfidence and Investment Decisions of Investors

H_{9(b)}: There is relation between Conservatism and Investment Decisions of Investors

H_{9(c)}: There is relation between Herding and Investment Decisions of Investors

H_{9(d)}: There is relation between Regret and Investment Decisions of Investors

The table 5.18 exhibits that the significance of the model at 95 percent confidence interval. It shows that the model develops a prediction level at 0.615 or 61.5 per cent which is good. The coefficient of determination means the change in the dependent variable is defined by the change in the independent variables. The coefficient of determination is R-square value which shows the variability of dependent variable is explained by the independent variable. The independent variable explains 37.9% of the dependent variable (investment decisions). The R-square value should be greater than 0.10 (Falk and Miller, 1992)

Table 5.18: Model Summary of Behavioral biases and Investment Decisions of investors

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.615	.379	.374	.38205

Source: Author's calculation

Table 5.19: Model Fitness in Multiple Regression Model Summary of Behavioral biases and Investment Decisions of investors

Model	Sum of Squares	Df	Mean Square	F	Sig.
1					
Regression	44.064	4	11.016	75.471	.000
Residual	72.252	495	.146		
Total	116.316	499			

Source: Author's calculation

ANOVA is used to find out the significance of the model used in the study. The F- ratio shows the fitness of the overall regression. Table 5.19 exhibits that the different independent variables used in the study are significant at $F(4, 495) = 75.471, p < 0.05$. It shows that the model used in the study is fit.

The table 5.20 exhibits that the t-test is significant for X_{141} and X_{144} at 0.05 level. Therefore, the hypotheses $H_{9(b)}$ and $H_{9(c)}$ are not accepted and $H_{9(a)}$ and $H_{9(d)}$ are accepted. It shows that there is a significant relation between overconfidence and investors investment decisions, regret and investors Investment decisions. There is no significant relation between conservatism investor's investment decisions, herding and investors Investment decisions.

Table 5.20: Coefficients from Multiple Regression models of Behavioral biases and Investment Decisions of investors

Model		Coefficients					Collinearity Statistics	
		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Tolerance	VIF
		B	Std. Error	Beta				
Behavioral Biases	(Constant)	1.004	.127		7.932	.000		
	Overconfidence (X_{141})	.385	.033	.430	11.578	.000	.912	1.097
	Conservatism (X_{142})	.024	.020	.044	1.202	.230	.945	1.058
	Herding (X_{143})	.001	.019	.002	.068	.946	.965	1.036
	Regret (X_{144})	.218	.026	.320	8.466	.000	.876	1.142

Source: Author's calculation

The Intercept is 1.004. The coefficients are 0.385(X_{141}) and 0.218(X_{144}) which is for significant variables. X_{141} (Overconfidence) has the largest value among the coefficients as in table 5.20. So, we can say that overconfidence is the main predictor of Investors Investment Decisions. When there is increase of one point in overconfidence it will result in increase of 0.385 points in investors' Investment Decisions. Investors are over-confident regarding the decisions they have taken for the investment. They think that they take all the right decisions regarding investment. The results of the present study also gain support from the findings in the past years (Norsinger, 2002).

When there is increase of one point in regret it will result in an increase of 0.218 points in investors' investment decisions. The investors are regret about their decisions when they purchase the stock at high price and sell the stock at a price lower than their purchase price. They hold the stock for a long time till the price will reach at the price which is lower than their purchase price. The investors who always base their decisions on past experience,

they invest more in the stock market and take more risk. The results are consistent with the previous findings of (Shefrin, 2009; Muermann and Volkman, 2007). There is no significant relation between conservatism and investment decisions. This is the mentality of people to be conservative or risk-averse and stick to their prior views and they find newer options to be costly. There is no significant relation between herding and investors investment decisions (Chin, 2012). Therefore, based on the above analysis the predictive regression equation is:

$$Y = 1.004 + 0.385 X_{141} + 0.218 X_{144}$$

Where,

Y= Investment Decision

X₁₄₁ = Overconfidence

X₁₄₄ = Regret

From the above discussion, it has been found that there is relation between the Personality Traits, Emotional Intelligence and Behavioral Biases with Investors Investment Decisions. It has also been found that there is relation among the different dimensions of personality traits, different dimensions of emotional intelligence and different dimensions of behavioral biases and the investors' investment decisions. The table 5.21 shows the relation of Demographic Attributes, Personality Traits, Emotional Intelligence, and Behavioral Biases with Investors Investment Decisions. It has been found that the all the demographic attributes are not related with the Investors Investment Decisions. The age, gender, income, educational qualification or marital status is not related with the Investors Investment Decisions. It has been found that there is relation among agreeableness and Investors Investment Decisions, extroversion, and Investors Investment Decisions, conscientiousness, and Investors Investment Decisions. It has also been found that there is relation among self awareness and Investors Investment Decisions, handling emotions and Investors Investment Decisions, motivation and Investors Investment Decisions, empathy, and Investors Investment Decisions, social skills and Investors Investment Decisions. It is found that there is relation among overconfidence and regret with the investment decisions

of the investors. The investors consider their personality traits, emotional intelligence, and behavioral biases while investing in stock market.

Table 5.21: Relation of Demographic Attributes, Personality Traits, Emotional Intelligence and Behavioral Biases with Investment Decisions of Investors

Sr. No.	Independent Variables	H ₀
Demographic Attributes	Age	Accepted
	Gender	Accepted
	Income	Accepted
	Educational Qualification	Accepted
	Marital status	Accepted
Personality Traits	Agreeableness	Rejected
	Extroversion	Rejected
	Conscientiousness	Rejected
	Openness to experience	Accepted
	Neuroticism	Accepted
Emotional Intelligence	Self Awareness	Rejected
	Handling Emotions	Rejected
	Motivation	Rejected
	Empathy	Rejected
	Social Skills	Rejected
Behavioral Biases	Overconfidence	Rejected
	Conservatism	Accepted
	Herding behavior	Accepted
	Regret	Rejected

Source: Author's calculation

Chapter-6

RISK TOLERANCE AND INFLUENTIAL FACTORS

The purpose of this chapter is to study the relation of Demographic Attributes, Personality Traits, Behavioral Biases and Emotional Intelligence with Risk Tolerance of Investors. Multiple Regression statistics was used to test the relationship. Section 6.1 presents the overall relation among Investors Demographic Attributes, their Personality Traits, their Emotional Intelligence and their Behavioral Biases with their Risk Tolerance. Section 6.2 presents the relation between the dimensions of Demographic Attributes and Risk Tolerance of Investors. Section 6.3 exhibits the relation among the different dimensions of Personality Traits and Investors Risk Tolerance. Section 6.4 presents the relation among the different dimensions of Emotional Intelligence and Investors Risk Tolerance. Section 6.5 presents the relation between the dimensions of Behavioral Biases and Risk Tolerance of Investors.

6.1 RELATION OF DEMOGRAPHIC ATTRIBUTES, PERSONALITY TRAITS, EMOTIONAL INTELLIGENCE AND BEHAVIORAL BIASES WITH RISK TOLERANCE OF INVESTORS

This section has attempted to identify the independent variables (Demographic Attributes, Personality Traits, Emotional Intelligence and Behavioral Biases) which are related to the Risk Tolerance (dependent variable).

In this section, the following hypotheses have been tested:

H₁: There is significant relation between Investors Demographic Attributes and their Risk Tolerance

H₂: There is significant relation between Investors Personality Traits and their Risk Tolerance

H₃: There is significant relation between Investors Emotional Intelligence and their Risk Tolerance

H₄: There is significant relation between Investors Behavioral Biases and their Risk Tolerance

Multiple Regression has been used to find the intercept and coefficients for the following regression model:

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + \dots + b_{14}X_{14}$$

This equation includes eleven demographic variables, personality traits, behavioral biases and emotional intelligence. Out of the alternative methods of selection of variables in Multiple Regression, viz. Confirmatory Specification Approach, Sequential Search Approaches (Backward Elimination and Stepwise Elimination) and Combinatorial approach whereby all the variables are entered in the model and have been selected and are used in the analysis. Stepwise elimination method has also been run to compare the results of the confirmatory approach with the results of this sequential approach. The close examination of the results indicated that the prediction and explanation strengths of both the methods are almost same. So, the result of the confirmatory regression model has been used in the analysis.

The basic assumptions of regression analysis are:

- The error terms should be normally distributed.
- The linear relation exists between dependent and independent variables.
- The variance of the error term should be constant.
- There should not be multicollinearity in the different independent variables.

To check the compliance of the above assumptions:

- In order to check multicollinearity:

Tolerance

VIF (Variation Inflation Factor) have been calculated.

6.1.1 Selection of Dependent Variables and different Independent Variables

Dependent variable-- Risk tolerance, the summated average score of 9 statements have been used.

Independent variables are usually selected in two ways. The first approach is to identify variables from previous research. The second approach is to select the different variables for which no previous research has been done (Hair *et al.*, 1995). The first approach has been used here.

The independent variables consist of Demographic Attributes, Personality Traits, Emotional Intelligence and Behavioral Biases. The eleven demographic attributes include age, marital status, education, gender, and income. The summated average score of Personality Traits, Emotional Intelligence, and Behavioral Biases have been used. The table 6.1 exhibits the total fourteen independent variables have been used.

Table 6.1: Coding of Independent Variables

Sr. No.	Independent variables	Coding
1.	Demographic Variables	
	Gender	X₁
	Age	X₂,X₃,X₄
	Marital status	X₅
	Educational qualification	X₆,X₇,X₈
	Income	X₉,X₁₀,X₁₁
2.	Personality Traits	X₁₂
3.	Emotional Intelligence	X₁₃
4.	Behavioral Biases	X₁₄

Source: Author's calculation

The independent variables Personality Traits, Emotional Intelligence and Behavioral Biases are on the metric scale and the Demographic Attributes are on the nominal scale. Demographic Attributes are converted into dummy variables to make them fit for Multiple Regression Analysis. The conversion of Demographic Attributes into dummy variables has been shown in Table 6.2

Table 6.2: Dummy Coding of Demographic Variables

Sr. No.	Name of variable	Categories	Dummy Variable Label	Levels
1.	Gender	1) Male	X ₁	1, if Male 0, if otherwise
		2) Female		
2.	Age	1) Below or equal to 30	X ₂	1, if Below or equal to 30 0, if otherwise
		2) 31- 40 years	X ₃	1, if 31- 40 years 0, if otherwise
		3) 41-50 years	X ₄	1, if 41-50 years 0, if otherwise
		4) Above 50 years		
3.	Marital Status	1) Married	X ₅	1, if Married 0, if otherwise
		2) Unmarried		
4.	Educational Qualification	1) Bachelors	X ₆	1, if Bachelors 0, if otherwise
		2) Masters	X ₇	1, if Masters 0, if otherwise
		3) M. Phil	X ₈	1, if M. Phil 0, if otherwise
		4) Doctorate		
5.	Income	1) Below or equal to 200000	X ₉	1, if Below or equal to 200000 0, if otherwise
		2) 200001-500000	X ₁₀	1, if 200001-500000 0, if otherwise
		3) 500001-1000000	X ₁₁	1, if 500001-1000000 0, if otherwise
		4) Above 1000000		

Source: Author's calculation

Table 6.3: Model Summary of Multiple Regression of independent and dependent variables

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.475	.226	.204	.44203	1.775

Source: Author's calculation

The table 6.3 exhibits that the significance of the model at $p < 0.05$. It shows that the model develops a prediction level at 0.475 or 47.5 per cent which is good. The coefficient of determination means the change in the dependent variable is defined by the change in the independent variables. The coefficient of determination is R-square value which shows the

variability of the dependent variable is explained by the independent variable. The independent variable explains 22.6% of the dependent variable (risk tolerance). The R-square value should be greater than 0.10 (Falk and Miller, 1992). The Durbin Watson statistics is used to check whether there is autocorrelation among the variables. As the value of Durbin Watson is 1.775 which is close to 2, so there is no autocorrelation among the variables.

Table 6.4: Model Fitness of Risk Tolerance and Influential Factors

Model	Sum of Squares	Df	Mean Square	F	Sig.
1					
Regression	27.652	14	1.975	10.109	.000
Residual	94.765	485	.195		
Total	122.417	499			

Source: Author's calculation

ANOVA is used to find out the significance of the model used in the study. The F- ratio shows the fitness of the overall regression. Table 6.4 exhibits that the different independent variables used in the study are significant at $F(14, 485) = 10.109, p < 0.05$. It shows that the model used in the study is fit.

The table 6.5 exhibits that the t-test is significant for the variables X_{12}, X_{13} and X_{14} at 0.05 level and the Intercept is 0.796. The coefficients for the significant variables are 0.134(X_{12}), 0.117(X_{13}) and 0.381(X_{14}). Thus, the hypothesis H_1 is not accepted and H_2, H_3, H_4 are accepted. There is a significant relation between Personality traits and investors risk tolerance. There is a significant relation between Emotional Intelligence and investors risk tolerance. There is a significant relation between Behavioral Biases and investors risk tolerance. Hence, the young investors know their own risk tolerance and make a better decision in investment. The risk tolerance varies from individual to individual and depends on their personality. The risk tolerance helps the individual investor to take the decision which is best suitable for them.

There is no significant relation between demographic attributes and investors risk tolerance. The risk tolerance of the investors does not depend on any of the demographic attributes. There is no variation in the investors risk tolerance regarding the different age groups, gender, whether married or unmarried, different educational qualification and

different income groups of the investors. Both females and males take the same risk when they invest in stock market (Schubert *et al.*, 1999). The investors with any age group take the same risk when they invest in stock market. The results also gain support from the prior findings (Al-Ajmi, 2008; Subramaniam and Athiyaman, 2016). There is no change in the investor's risk tolerance whether married or unmarried while investing in the stock market. There is no change in the investors risk tolerance with any qualification whether he is Graduate, Postgraduate, M. Phil or Doctorate while investing in stock market. There is no change in the investors risk tolerance with any income group whether the annual income of the investor is less than 200000, 200001-500000, 500001-1000000 and above 1000000 while investing in stock market.

Table 6.5: Coefficients from Multiple Regression models of Risk Tolerance and Influential Factors

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
Demographic Attributes	(Constant)	.796	.269		2.955	.003		
	Demographic Attributes							
	Male (X1)	.050	.057	.044	.870	.385	.618	1.617
	Female							
	Below or equal to 30 (X2)	-.008	.124	-.007	-.061	.951	.114	8.771
	31- 40 years (X3)	.109	.110	.107	.994	.321	.138	7.265
	41-50 years (X4)	.203	.109	.174	1.869	.062	.183	5.454
	Above 50 years							
	Married (X5)	-.084	.068	-.078	-1.240	.216	.398	2.510
	Unmarried							
	Bachelors (X6)	.021	.059	.012	.362	.718	.526	1.902
	Masters (X7)	.039	.048	.024	.823	.410	.678	1.474
	M.Phil (X8)	-.271	.179	-.115	-1.520	.129	.342	3.052
	Doctorate							
	1) Below or equal to 200000 (X9)	-.305	.158	-.267	-1.931	.054	.102	9.803
	2) 200001-500000 (X10)	-.022	.122	-.022	-.180	.857	.107	9.337
	3) 500001-1000000 (X11)	.038	.114	.034	.330	.741	.152	6.569
	4) Above 1000000							
	Personality Traits (X12)	.134	.067	.092	2.009	.045	.754	1.326
Emotional Intelligence (X13)	.117	.051	.111	2.302	.022	.688	1.453	
Behavioral Biases (X14)	.381	.052	.347	7.385	.000	.725	1.379	

Source: Author's calculation

Therefore, based on the above analysis the predictive regression equation is:

$$Y = 0.796 + 0.134 X_{12} + 0.117 X_{13} + 0.381 X_{14}$$

Where,

Y= Risk Tolerance

X₁₂ = Personality Traits

X₁₃ = Emotional Intelligence

X₁₄ = Behavioral Biases

6.2 RELATION BETWEEN DEMOGRAPHIC ATTRIBUTES OF INVESTORS AND THEIR RISK TOLERANCE

This section was related to study the relation between the demographic attributes and investors risk tolerance. The in-depth study has been done in order to find out which demographic attributes are related to risk tolerance and which are not related to risk tolerance. Thus, multiple regression analysis has been used.

H_{1(a)}: There is relation between Gender and Risk Tolerance of Investors

H_{1(b)}: There is relation between Age and Risk Tolerance of Investors

H_{1(c)}: There is relation between Marital Status and Risk Tolerance of Investors

H_{1(d)}: There is relation between Educational Qualification and Risk Tolerance of Investors

H_{1(e)}: There is relation between Income and Risk Tolerance of Investors

The table 6.6 exhibits that the significance of the model at 95 percent confidence level. It shows that the model develops the level of prediction at 0.434 or 43.4 per cent which is good. The coefficient of determination means the change in the dependent variable is defined by the change in the independent variables. The coefficient of determination is R-

square value which shows the variability of dependent variable is explained by the independent variable. The independent variable explains 18.9 % of the dependent variable (risk tolerance). The R-square value should be greater than 0.10 (Falk and Miller, 1992).

Table 6.6: Model Summary of Demographic Attributes and Risk Tolerance of the investors

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin Watson
1	0.434	.189	.182	.44798	1.825

Source: Author's calculation

ANOVA is used to find out the significance of the model used in the study. The F- ratio shows the fitness of the overall regression. Table 6.7 exhibits that the different independent variables used in the study are significant at $F(4,495) = 28.751, p < 0.05$. It shows that the model used in the study is fit.

Table 6.7: Model Fitness in Multiple Regression of Demographic Attributes and Risk Tolerance of the investors

Model	Sum of Squares	Df	Mean Square	F	Sig.
1					
Regression	23.079	4	5.770	28.751	.000
Residual	99.338	495	.201		
Total	122.417	499			

Source: Author's calculation

The table 6.8 that the t-test is significant for all the independent variables at 0.05 level. Thus, the hypotheses $H_{1(a)}$, $H_{1(b)}$, $H_{1(c)}$, $H_{1(d)}$ and $H_{1(e)}$ are not accepted. It means that there is no significant relation among the different demographic attributes and investors risk tolerance. The intercept of the equation is 2.702. The dependent variable i.e. risk tolerance will remain same 2.702 when there is a change in independent variables or there is no change in independent variables, there will no change in risk tolerance. The risk tolerance of the investors does not depend on any of the demographic attributes. There is no disparity in the investors risk tolerance regarding the different age groups, gender, whether married or unmarried, different educational qualification and different income groups of the investors. Both males and females take the same risk when they invest in stock market.

The investors with any age group take the same risk when they invest in stock market. The results also gain support from the prior findings (Subramaniam and Athiyaman, 2016). There is no change in the investors risk tolerance whether married or unmarried while investing in the stock market. There is no change in the investors risk tolerance with any qualification whether he is Graduate, Postgraduate, M. Phil or Doctorate while investing in stock market. There is no change in the investors risk tolerance with any income group whether the annual income of the investor is less than 200000, 200001-500000, 500001-1000000 and above 1000000 while investing in stock market.

Table 6.8: Coefficients from Multiple Regression models of Demographic Attributes and Risk Tolerance of the investors

Model		Coefficients						
		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
Demographic Attributes	(Constant)	2.702	.198		13.637	.000		
	DEMOGRAPHICS							
	Male (X1)	-.030	.061	-.027	-.494	.622	.654	1.528
	Female							
	Below or equal to 30 (X2)	.217	.135	.207	1.609	.108	.118	8.447
	31- 40 years (X3)	-.085	.105	-.046	-.806	.421	.183	5.456
	41-50 years (X4)	.173	.131	-.053	-1.323	.186	.370	2.704
	Above 50 years							
	Married (X5)	-.023	.074	-.021	-.313	.755	.414	2.418
	Unmarried							
	Bachelors (X6)	.021	.059	.012	.362	.718	.526	1.902
	Masters (X7)	.039	.048	.024	.823	.410	.678	1.474
	M.Phil (X8)	-.271	.179	-.115	-1.520	.129	.342	3.052
	Doctorate							
	1) Below or equal to 200000 (X9)	-.305	.158	-.267	-1.931	.054	.102	9.803
2)200001-500000 (X10)	-.185	.133	-.186	-1.396	.163	.110	9.093	
3) 500001-1000000 (X11)	-.079	.125	-.071	-.629	.530	.155	6.441	
4) Above 1000000								

Source: Author's calculation

This study has found that there is no significant relation between investors gender, qualification and different income level and risk tolerance. The present study supports the previous studies of (Wang, 2009; Ajmi, 2008; Anbar and Eker, 2010; Eckel, 2008; Gaur *et al.*, 2011; Fish, 2012).

Therefore, based on the above analysis the predictive regression equation is:

$$Y = 2.702$$

Where Y= Risk Tolerance

6.3 RELATIONSHIP AMONG THE INVESTORS PERSONALITY TRAITS AND THEIR RISK TOLERANCE

This section was related to study the relation between the investor’s personality traits and their risk tolerance. The Big Five personality dimensions include Agreeableness, Extroversion, Conscientiousness, Openness, and Neuroticism. So, these dimensions are assigned with the variables as in table 6.9. The in-depth study has been done to know which investor’s personality traits are related to risk tolerance and which are not related to risk tolerance. Thus, multiple regression analysis has been used.

Table 6.9: Coding of dimensions of Personality Traits

Sr. No.	Personality Traits	Coding
1.	Agreeableness	X ₁₂₁
2.	Extroversion	X ₁₂₂
3.	Conscientiousness	X ₁₂₃
4.	Openness	X ₁₂₄
5.	Neuroticism	X ₁₂₅

Source: Author’s calculation

H_{2 (a)}: There is relation between Agreeableness and Risk Tolerance of Investors

H_{2 (b)}: There is relation between Extroversion and Risk Tolerance of Investors

H_{2 (c)}: There is relation between Conscientiousness and Risk Tolerance of Investors

H_{2 (d)}: There is relation between Openness to Experience and Risk Tolerance of Investors

H_{2 (e)}: There is relation between Neuroticism and Risk Tolerance of Investors

The table 6.10 exhibits that the significance of the model at 95 percent confidence level. It shows that the model develops the level of prediction at 0.448 or 44.8 per cent which is good. The coefficient of determination means the change in the dependent variable is defined by the change in the independent variables. The coefficient of determination is R-square value which shows the variability of dependent variable is explained by the independent variable. The independent variable explains 20% of the dependent variable (risk tolerance). The R-square value should be greater than 0.10 (Falk and Miller, 1992).

Table 6.10: Model Summary of Personality Traits and Risk Tolerance of the investors

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.448	.200	.192	.44513

Source: Author's calculation

ANOVA is used to find out the significance of the model used in the study. The F- ratio shows the fitness of the overall regression. Table 6.11 exhibits that the different independent variables used in the study are significant at $F(5, 494) = 24.768, p < 0.05$. It shows that the model used in the study is fit.

Table 6.11: Model Fitness in Multiple Regression of Personality Traits and Risk Tolerance of the investors

Model	Sum of Squares	Df	Mean Square	F	Sig.
1					
Regression	24.537	5	4.907	24.768	.000
Residual	97.880	494	.198		
Total	122.417	499			

Source: Author's calculation

The table 6.12 exhibits that the t-test is significant for X_{121} , X_{122} , and X_{124} at 0.05 level. Thus, the hypotheses $H_{2(c)}$ and $H_{2(e)}$ are not accepted and $H_{2(a)}$, $H_{2(b)}$, and $H_{2(d)}$ are accepted. It shows that there is a significant relation between agreeableness trait and investors risk tolerance, extroversion trait and investors risk tolerance, openness to experience trait and

investors risk tolerance. There is no significant relation between conscientiousness trait and investors risk tolerance, neuroticism trait and investors risk tolerance.

The intercept is 2.000. The coefficients are 0.326(X_{121}), 0.155(X_{122}), -0.182(X_{124}) which is only for the significant variables.

Table 6.12: Coefficients from Multiple Regression models Model Fitness in Multiple Regression of investors Personality Traits and their Risk Tolerance

Model		Coefficients						
		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
Personality Traits	(Constant)	2.000	.160		12.511	.000		
	Agreeableness (X_{121})	.326	.053	.340	6.197	.000	.538	1.816
	Extraversion (X_{122})	.155	.051	.166	3.067	.002	.551	1.857
	Conscientiousness (X_{123})	-.066	.059	-.058	-1.115	.265	.595	1.693
	Openness (X_{124})	-.182	.048	-.176	-3.757	.000	.740	1.351
	Neuroticism (X_{125})	.019	.046	.022	.412	.681	.591	1.682

Source: Author's calculation

X_{121} (Agreeableness) has the largest value among the coefficients as in table 6.12. So we can say that it is the main predictor of Risk Tolerance. The investors who have high score on agreeableness take more risk. They are cooperative; respect every person and their opinion. They are more reliable persons. When there is an increase of one point in agreeableness it will result in an increase of 0.326 points in investors' risk tolerance. The investors who are extrovert enjoy spending time with the other people and they have positive emotions and are energetic persons. The investors who have high score on extraversion take more risk. When there is increase of one point in extraversion it will result in an increase of 0.155 points in investors' risk tolerance. The results of the present study also gain support from the previous findings (Pak and Mahmood, 2015). There is no relation between conscientiousness trait and investors risk tolerance.

Investors who score high on openness to experience trait they are always ready for new things and take more risk. (Kubilay and Bayrakdaroglu, 2016). They are always ready to

accept the change in the market regarding the investment and change their portfolio according to the changes occurs in the situation of the market. When there is increase of one point in openness to experience it will result in increase of 0.182 points in investors' risk tolerance. The investors who score high on neuroticism are not emotional. Their reactions are more intense than normal reactions. They take ordinary situations as frightening and minor disturbance as more complicated. Their negative reaction goes for long period of time which shows that they are usually in a bad mood. Therefore, there is no relation between neuroticism trait and investors risk tolerance. The results of the present study also gain support from the previous findings (Parameshwari and Krishnan, 2015; Chavali and Mohanraj, 2016). Big Five Factor (BFF) had effect on risk tolerance (Zhang *et al.*, 2014; Durand, Newby and Sanghani, 2008)

These results cannot be accepted without examining the compliance with the assumptions of multiple regression analysis. An analysis of collinearity statistics (Tolerance and VIF) in the table 6.12 shows that all the tolerance values are higher than 0.10 and all the VIF values are less than 10. It has been found that there is no multicollinearity among the different independent variables.

Therefore, based on the above analysis the predictive regression equation is:

$$Y = 2.000 + 0.326 X_{121} + 0.155 X_{122} - 0.182 X_{124}$$

Where,

Y= Risk Tolerance

X₁₂₁ = Agreeableness

X₁₂₂ = Extraversion

X₁₂₄ = Openness to experience

6.4 RELATION BETWEEN INVESTORS EMOTIONAL INTELLIGENCE AND THEIR RISK TOLERANCE

This section was related to study the relation between the investor's emotional intelligence and their risk tolerance. The Emotional Intelligence dimensions are self-awareness,

handling emotions, motivation, empathy and social skills. So, these dimensions are assigned with the variables as in table 6.13. The in-depth study has been done in order to find out which dimension of emotional intelligence are related with the risk tolerance of investors and which are not related to risk tolerance. Thus, multiple regression technique has been used.

Table 6.13: Coding of dimensions of Emotional Intelligence

Sr. No.	Emotional Intelligence	Coding
1.	Self Awareness	X ₁₃₁
2.	Handling Emotions	X ₁₃₂
3.	Motivation	X ₁₃₃
4.	Empathy	X ₁₃₄
5.	Social Skills	X ₁₃₅

Source: Author's calculation

H_{3(a)}: There is relation between Self Awareness and Risk Tolerance of Investors

H_{3(b)}: There is relation between Handling Emotions and Risk Tolerance of Investors

H_{3(c)}: There is relation between Motivation and Risk Tolerance of Investors

H_{3(d)}: There is relation between Empathy and Risk Tolerance of Investors

H_{3(e)}: There is relation between Social Skills and Risk Tolerance of Investors

The table 6.14 exhibits that the significance of the model at 95 percent confidence level. It shows that the model develops the level of prediction at 0.441 or 44.1 per cent which is good. The coefficient of determination means the change in the dependent variable is defined by the change in the independent variables. The coefficient of determination is R-square value which shows the variability of dependent variable is explained by the

independent variable. The independent variable explains 19.5% of the dependent variable (risk tolerance). The R-square value should be greater than 0.10 (Falk and Miller, 1992).

Table 6.14: Model Summary of Emotional Intelligence and Risk Tolerance of Investors

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.441	.195	.186	.44675

Source: Author's calculation

Table 6.15: Model Fitness in Multiple Regression of Emotional Intelligence and Risk Tolerance of Investors

Model 1	Sum of Squares	Df	Mean Square	F	Sig.
Regression	23.821	5	4.764	23.870	.000
Residual	98.597	494	.200		
Total	122.417	499			

Source: Author's calculation

ANOVA is used to find out the significance of the model in the study. The F- ratio shows the fitness of the overall regression. Table 6.15 exhibits that the different independent variables used in the study are significant at $F(5, 494) = 10.109, p < 0.05$. It shows that the model used in the study is fit.

The table 6.16 exhibits that the t-test is significant for the variables X_{131} , X_{132} , and X_{133} at 0.05 level. Thus, the hypotheses $H_{3(d)}$ and $H_{3(e)}$ are not accepted and $H_{3(a)}$, $H_{3(b)}$, and $H_{3(c)}$ are accepted. It means that there is significant relation between self-awareness and investors risk tolerance, handling emotions and investors risk tolerance, motivation and investors risk tolerance. There is no significant relation between empathy and investors risk tolerance, social skills and investors risk tolerance.

The Intercept is 1.427. The coefficients are 0.176(X_{131}), 0.084(X_{132}), 0.189(X_{133}) which is for significant variables. X_{133} (Motivation) has the largest value among the coefficients as in table 6.16. So, we can say that motivation is the main predictor of Risk Tolerance

among emotional intelligence dimensions. There is a relation between investors who are self-aware and their risk tolerance. When there is an increase of one point in self-awareness it will result in an increase of 0.176 points in investors' risk tolerance. The investors recognize their strengths and weaknesses will take more risk. The investors who don't recognize their strengths and weaknesses will take less risk.

Table 6.16: Coefficients from Multiple Regression models of Emotional Intelligence and Risk Tolerance of Investors

Model		Coefficients						
		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
Emotional Intelligence	(Constant)	1.427	.143		9.952	.000		
	Self Awareness (X ₁₃₁)	.176	.048	.212	3.656	.000	.486	2.056
	Handling Emotions (X ₁₃₂)	.084	.037	.106	2.259	.024	.743	1.345
	Motivation (X ₁₃₃)	.189	.057	.204	3.306	.001	.427	2.341
	Empathy (X ₁₃₄)	-.078	.047	-.097	-1.667	.096	.483	2.070
	Social Skills (X ₁₃₅)	.072	.047	.088	1.530	.127	.491	2.037

Source: Author's calculation

There is a relation between investors who can handle their emotions and their risk tolerance. When there is an increase of one point in handling emotions it will result in increase of 0.084 points in investors' risk tolerance. The investors who are positive will take more risk when they are under pressure. Handling emotions will help the individual investors to take correct decision when they are in difficult situations and when they can't handle their emotions they will have to suffer losses in future. When there is an increase of one point in motivation it will result in increase of 0.189 points in investors' risk tolerance. There is a relation between motivation and investors risk tolerance. The investors who are always ready to work hard to achieve their goals and don't have negative view point take more risk. There is no relation between empathy and investors risk tolerance. There is no relation between social skills and investors risk tolerance. The results of the present study also gain support from previous findings (Tanvir *et al.*,2016)

Emotional Intelligence was known among the five different dimensions of Goleman. Emotional Intelligence influence the investors risk tolerance and it has been known from

the literature (Debusk and Austin, 2011; Creevy *et al.*, 2011; Idris, 2014). This study reveals the influence of each dimension of emotional intelligence on investors risk tolerance.

These results cannot be accepted without examining the compliance with the assumptions of multiple regression analysis. An analysis of collinearity statistics (Tolerance and VIF) in the table 6.16 shows that all the tolerance values are higher than 0.10 and the VIF values are less than 10. It has been found that there is no multicollinearity in the different independent variables.

Therefore, based upon the above analysis the predictive regression equation is:

$$Y = 1.427 + 0.176 X_{131} + 0.084 X_{132} + 0.189 X_{133}$$

Where,

Y= Risk Tolerance

X₁₃₁ = Self Awareness

X₁₃₂ = Handling Emotions

X₁₃₃ = Motivation

6.5 RELATION BETWEEN BEHAVIORAL BIASES AND RISK TOLERANCE OF INVESTORS

This section was related to study the relation between the investor's behavioral biases and their risk tolerance. The in depth study has been done in order to find out which dimension of Behavioral Biases are related with the Risk tolerance and which are not related to Risk tolerance. Thus, multiple regression analysis has been used. The dimensions of Behavioral Biases include are overconfidence, conservatism, herding and regret. So, these dimensions are assigned with the variables as in table 6.17

Table 6.17: Coding of dimensions of Behavioral Biases

Sr. No.	Behavioral Biases	Coding
1.	Overconfidence	X ₁₄₁
2.	Conservatism	X ₁₄₂
3.	Herding	X ₁₄₃
4.	Regret	X ₁₄₄

Source: Author's calculation

H₄ (a) : There is relation between Overconfidence and Risk Tolerance of Investors

H₄ (b) : There is relation between Conservatism and Risk Tolerance of Investors

H₄ (c) : There is relation between Herding and Risk Tolerance of Investors

H₄ (d) : There is relation between Regret and Risk Tolerance of Investors

The table 6.18 exhibits that the significance of the model at 95 percent confidence level. It shows that the model develops the level of prediction at 0.434 or 43.4 per cent which is good. The coefficient of determination means the change in the dependent variable is defined by the change in the independent variables. The coefficient of determination is R-square value which shows the variability of the dependent variable is explained by the independent variable. The independent variable explains 18.9% of the dependent variable (risk tolerance). The R-square value should be greater than 0.10 (Falk and Miller, 1992)

Table 6.18: Model Summary of Behavioral biases and Risk Tolerance of investors

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin Watson
1	0.434	.189	.182	.44798	1.825

Source: Author's calculation

ANOVA is used to find out the significance of the model used in the study. The F- ratio shows the fitness of the overall regression. Table 6.19 exhibits that the different independent variables used in the study are significant at $F(4, 495) = 5.770, p < 0.05$. It shows that the model used in the study is fit.

Table 6.19: Model Fitness of Behavioral biases and Risk Tolerance of investors

Model 1	Sum of Squares	Df	Mean Square	F	Sig.
Regression	23.079	4	5.770	28.751	.000
Residual	99.338	495	.201		
Total	122.417	499			

Source: Author's calculation

The table 6.20 exhibits that the t-test is significant for X_{141} and X_{144} at 0.05 level. Thus, the hypotheses $H_{4(b)}$ and $H_{4(c)}$ are not accepted and $H_{4(a)}$ and $H_{4(d)}$ are accepted. It means that there is a significant relation between overconfidence and investors risk tolerance, regret and investors risk tolerance. There is no relation between conservatism and investors risk tolerance, herding and investors risk tolerance.

The Intercept is 1.428. The coefficients are 0.324(X_{141}), 0.111(X_{144}) which is for significant variables only. X_{141} (Overconfidence) has the largest value among the coefficients as in table 6.20. So, we can say that overconfidence is the main predictor of Investors Risk Tolerance. When there is increase of one point in overconfidence it will result in an increase of 0.324 points in investors' risk tolerance. Investors are over-confident regarding the decisions they have taken for the investment. They think that they take all the right decisions regarding investment. The results of the present study also gain support from the findings in the past years (Nofsinger, 2002).

Table 6.20: Coefficients from Multiple Regression models of Behavioral biases and Risk Tolerance of investors

Coefficients								
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
Behavioral Biases	(Constant)	1.428	.145		9.879	.000		
	Overconfidence (X_{141})	.324	.039	.353	8.309	.000	.910	1.098
	Conservatism (X_{142})	.019	.024	.034	.804	.422	.915	1.093
	Herding (X_{143})	-.003	.024	-.005	-.118	.906	.940	1.064
	Regret (X_{144})	.111	.031	.159	3.630	.000	.856	1.168

Source: Author's calculation

When there is increase of one point in regret it will result in increase of 0.111 points in investors' risk tolerance. The investors are regret about their decisions when they purchase the stock at high price and sell the stock at a price lower than their purchase price. They hold the stock for a long time till the price will reach at the price which is lower than their purchase price. The investors who always base their decisions on past experience, they invest more in the stock market and take more risk. The results are consistent with the previous findings of (Shefrin, 2009; Muermann and Volkman, 2007). There is no relation between conservatism and investors risk tolerance. This is the mentality of people to be conservative or the risk averse and sticks to their prior views and they find newer options to be costly. There is no relation between herding and investors risk tolerance. Therefore, based on the above analysis the predictive regression equation is:

$$Y = 1.428 + 0.324 X_{141} + 0.111 X_{144}$$

Where,

Y= Risk Tolerance

X₁₄₁ = Overconfidence

X₁₄₄ = Regret

The table 6.21 shows the relation of Demographic Attributes, Personality Traits, Emotional Intelligence and Behavioral Biases with Investors Risk Tolerance. It has been found that the all the demographic attributes are not related to the investor's risk tolerance.

From the above discussion, it has been found that there is a relation among agreeableness trait and investors risk tolerance, extroversion trait and investors risk tolerance and openness to experience trait and investors risk tolerance. It has also been found that there is a relation among self-awareness and investors risk tolerance, handling emotions and investors risk tolerance and motivation and investors risk tolerance. It is found that there is relation among overconfidence and regret with the investment decisions of the investors. The investors consider their personality traits, emotional intelligence and behavioral biases while investing in stock market and while taking the risk.

Table 6.21: Relation of Demographic Attributes, Personality Traits, Emotional Intelligence and Behavioral Biases with Risk Tolerance of Investors

Sr. No.	Independent Variables	H₀
Demographic Attributes	Age	Accepted
	Gender	Accepted
	Income	Accepted
	Educational Qualification	Accepted
	Marital status	Accepted
Personality Traits	Agreeableness	Rejected
	Extroversion	Rejected
	Conscientiousness	Accepted
	Openness to experience	Rejected
	Neuroticism	Accepted
Emotional Intelligence	Self Awareness	Rejected
	Handling Emotions	Rejected
	Motivation	Rejected
	Empathy	Accepted
	Social Skills	Accepted
Behavioral Biases	Overconfidence	Rejected
	Conservatism	Accepted
	Herding behavior	Accepted
	Regret	Rejected

Source: Author's calculation

Chapter- 7

RELATIONSHIP BETWEEN RISK TOLERANCE AND INVESTMENT DECISIONS

The purpose of this chapter is to study the relation of investors risk tolerance and their investment decisions. The data was analysed with frequency distribution and correlation analysis. The chapter is divided into three sections. Section 7.1 reveals the descriptive statistics of the investors risk tolerance. Section 7.2 reveals the descriptive statistics of the investors' investment decisions. Section 7.3 presents the relation between investors risk tolerance and investment decisions.

7.1 INVESTORS RISK TOLERANCE

This part of analysis includes the investors risk tolerance from whom the data was collected. The respondents who invest in the stock market were selected for this purpose.

7.1.1 The word “risk” in a financial context is:

Table 7.1: Frequency distribution of risk

	Frequency	Percent
Danger	133	26.6
Uncertainty	211	42.2
Opportunity	137	27.4
Thrill	19	3.8
None	0	0
Total	500	100.0

Source: Primary Data

The table 7.1 shows that there are 133 investors who consider risk as danger, 211 investors who consider risk as uncertainty, 137 investors who consider risk as opportunity and 19 investors who consider risk as thrill.

7.1.2 Compared to others, how do you rate your willingness to take financial risks?

Table 7.2: Frequency Distribution of willingness to take financial risks

	Frequency	Percent
Extremely High Risk	31	6.2
High Risk Taker	249	49.8
Average Risk Taker	186	37.2
Low Risk Taker	21	4.2
Extremely Low Risk Taker	13	2.6
Total	500	100.0

Source: Primary Data

The table 7.2 reveals that there are 31 investors who are extremely high-risk taker, 249 investors who are high-risk taker, 186 investors who are average-risk taker, 21 investors are low-risk taker and 13 investors who are extremely low-risk taker.

7.1.3 I can tolerate sharp ups and downs in the short-term value of my investments in return for potential long-term gains

Table 7.3: Frequency distribution of tolerate sharp ups and downs in investment

	Frequency	Percent
Strongly Agree	106	21.2
Agree	205	41.0
Neutral	171	34.2
Disagree	12	2.4
Strongly Disagree	6	1.2
Total	500	100

Source: Primary Data

The table 7.3 shows that there are 106 investors who strongly agree with that they can accept the sharp ups and downs in the value of investments when they get long-term gains, 206 investors agree, 171 investors are neutral towards it, 12 investors disagree and 6 investors are strongly disagree with it.

7.1.4 Hypothetically, I prefer an investment that has a 50 percent chance of losing five percent and a 50 percent chance of gaining 20 percent in one year, rather than an investment that will assure a 5 percent return in one year

Table 7.4: Frequency Distribution of 50 percent chance of losing five percent and a 50 percent chance of gaining 20 percent in one year

	Frequency	Percent
Strongly Agree	50	10.0
Agree	204	40.8
Neutral	179	35.8
Disagree	67	13.4
Strongly Disagree	0	0
Total	500	100

Source: Primary Data

The table 7.4 shows that there are 50 investors who strongly agree that they prefer an investment that has a 50 percent chance of losing five percent and a 50 percent chance of gaining 20 percent in one year, rather than an investment that will assure a 5 percent return in one year, there are 204 investors who agree with it, 179 investors who are neutral towards it, 67 investors who disagree with it and there are no investors who strongly disagree towards it.

7.1.5 I am comfortable holding on to an investment even though it drops sharply in value

Table 7.5: Frequency distribution of holding an investment even though it drops sharply in value

	Frequency	Percent
Strongly Agree	74	14.8
Agree	196	39.2
Neutral	151	30.2
Disagree	60	12.0
Strongly Disagree	19	3.8
Total	500	100.0

Source: Primary Data

The table 7.5 shows that 74 investors strongly agree with that they hold their investment when the value drops down, 196 investors agree towards it, 151 investors are neutral towards it, 60 investors disagree towards it and 19 investors strongly disagree that they hold their investment even though it drops sharply in value.

7.1.6 I am willing to take the risk which gives more return than the rate of inflation

Table 7.6: Frequency Distribution of taking the risks associated with stocks

	Frequency	Percent
Strongly Agree	55	11.0
Agree	232	46.4
Neutral	124	24.8
Disagree	72	14.4
Strongly Disagree	17	3.4
Total	500	100

Source: Primary Data

The table 7.6 shows that 55 investors strongly agree that they are willing to take the risks which gives more return than the inflation rate, 232 investors agree with it, 124 investors are neutral towards it, 72 investors disagree with it and 17 investors strongly disagree that they are willing to take the risks which gives more return than the inflation rate.

7.1.7 I consider myself knowledgeable regarding risks and potential returns while investing in stocks and other types of securities.

Table 7.7: Frequency distribution of knowledge of risks and return

	Frequency	Percent
Strongly Agree	66	13.2
Agree	238	47.6
Neutral	118	23.6
Disagree	49	9.8
Strongly Disagree	29	5.8
Total	500	100

Source: Primary Data

The table 7.7 shows that there are 66 investors who strongly agree that they consider themselves knowledgeable regarding risks and potential returns while investing in stocks and other types of securities, 238 investors agree with it, 118 investors are neutral towards it, 49 investors disagree and 29 investors strongly disagree that they consider themselves knowledgeable regarding risks and potential returns while investing in stocks and other types of securities.

7.1.8 Investments can go up or down in value, and experts often say you should be prepared to weather a downturn. By how much could the total value of all your investments go down before you would begin to feel uncomfortable?

The table 7.8 shows that there are 111 investors who think that the more than 50 percent of their investment value goes down before they begin to feel uncomfortable, 138 investors think that 50 percent of the value of their investments goes down before they begin to feel uncomfortable, 151 investors think that 33 percent of their investment value goes down before they begin to feel uncomfortable, 76 investors think that 20 percent of the value of their investments goes down before they begin to feel uncomfortable and 24 investors think that 10 percent of their investment value goes down before they begin to feel uncomfortable.

Table 7.8 Frequency distribution of when the total Investments go down

	Frequency	Percent
More than 50	111	22.2
50%	138	27.6
33%	151	30.2
20%	76	15.2
10%	24	4.8
Total	500	100

Source: Primary Data

7.1.9 In recent years, how have your personal investments changed?

Table 7.9: Frequency distribution of how your personal investment changed

	Frequency	Percent
Always Toward Higher Risk	35	7.0
Mostly Toward Higher Risk	209	41.8
No Changes	152	30.4
Mostly Toward Lower Risk	67	13.4
Always Toward Lower Risk	37	7.4
Total	500	100

Source: Primary Data

The table 7.9 shows that 35 investors always move towards higher risks, 209 investors mostly move towards higher risk, 152 investors does not change their investments, 67 investors move mostly towards lower risk and 37 investors always move towards lower risk.

7.2 INVESTMENT DECISIONS OF THE INVESTORS

This part of analysis includes the investor's investment decisions from whom the data was collected. The respondents who invest in stock market were selected for this purpose.

The table 7.10 shows the frequency distribution of investment decisions of the investors.

- There are 44 investors for whom short term capital gains is very important, for 184 investors short term capital gain is important, for 91 investors short term capital gain is somewhat important, for 167 investors short term capital gain is slightly important, for 67 investors short term capital gain is not important.

- There are 60 investors for whom long term capital appreciation is very important, for 101 investors long term capital gain is important, for 125 investors long term capital gain is somewhat important, for 118 investors long term capital gain is slightly important and for 147 investors long term capital gain is not important.

- There are 25 investors for whom dividend income is very important, for 91 investors dividend income is important because they invest in that company which provide higher dividend, for 119 investors dividend income is somewhat important, for 118 investors dividend income is slightly important and for 147 investors dividend income is not important.

- There are 25 investors for whom diversification is not important, for 171 investors diversification is slightly important, for 113 investors diversification is somewhat important, for 136 investors diversification is important and for 55 investors diversification is very important. Diversification is important for some of the

investors because it gives the investor to reduce their risk in order to get positive returns.

- There are 106 investors for whom minimising risk is very important, for 133 investors minimising risk is important, for 133 investors minimising risk is somewhat important, for 97 investors minimising risk is slightly important and for 31 investors minimising risk is not important. The investors invest in the stock which include minimum risk because they don't want to take more risk.

Table 7.10: Frequency distribution of investment decisions of the investors

Sr. No	Particulars	Not Imp	Slightly Imp	Somewhat Imp	Imp	Very Imp	N
1	Short Term Capital Gains	67	114	91	184	44	500
2	Long Term Capital Appreciation	47	167	125	101	60	500
3	Dividend Income	147	118	119	91	25	500
4	Diversification	25	171	113	136	55	500
5	Minimising Risk	31	97	133	133	106	500
6	Family / Relative Opinion	78	119	108	143	52	500
7	Friends / Co-workers Recommendation	38	105	198	75	84	500
8	Brokers / Financial Advisors Recommendation	26	108	146	150	70	500
9	Newspapers / Magazines	65	111	141	128	55	500
10	Financial Statement / Annual Reports	49	95	163	104	89	500
11	Computer / Internet	34	90	132	157	87	500
12	Gross Domestic Product	51	100	153	113	83	500
13	Interest Rates	50	139	120	88	103	500
14	Inflation Rates	36	114	106	169	75	500
15	Strong Confidence on Economy	28	102	146	135	89	500
16	Government Stability	35	131	124	149	61	500
17	Stock Market Performance	49	100	152	128	71	500
18	Past Performance of Industry	57	94	196	82	71	500
19	Growth rate of Industry	36	116	123	163	62	500
20	Firm's Status in Industry Life Cycle	48	108	143	128	73	500
21	Size of Firm	52	123	112	154	59	500

Contd...

22	Firm's Product / Services Quality	47	97	152	127	77	500
23	Reputation of Firm	29	109	136	150	76	500
24	Quality of Management	49	81	147	158	65	500
25	Perceived Ethics of the Firm	18	108	174	109	91	500
26	Firm's Local Operations	35	95	171	144	55	500
27	Firm's International Operations	35	92	136	171	66	500
28	Stock Price per Share	45	82	135	172	66	500
29	Earnings Per Share (EPS)	25	98	142	158	77	500
30	Price to Earnings Ratio (P/E Ratio)	35	91	139	152	83	500
31	Dividend Payout Ratio	55	95	154	152	44	500
32	Book Value per Share	29	120	136	151	64	500
33	Current Ratio	53	105	119	150	73	500
34	Debt to Equity Ratio	31	62	153	191	63	500
35	Return on Equity	25	110	152	147	66	500

Source: Primary Data

- There are 52 investors for whom family/relative opinion is very important, for 143 investors family/relative opinion is important, for 108 investors family/relative opinion is somewhat important, for 119 investors family/relative opinion is slightly important and for 78 investors family/relative opinion is not important. Most of the investors take the opinion of their family members or the relatives while investing in stock.
- There are 84 investors for whom friends/co-workers recommendation is very important, for 75 investors friends/co-workers recommendation is important, for 198 investors friends/co-workers recommendation is somewhat important, for 105 investors friends/co-workers recommendation is slightly important and for 38 investors friends/co-workers recommendation is not important. Some of the investors take advice of their friends and the co-workers, who invest in stock market, while investing in stock. Because they think that the co-workers or the friends will give them better suggestions.
- There are 70 investors for whom brokers/financial advisors recommendation is very

important, for 150 investors brokers/financial advisors recommendation is important, for 146 investors brokers/financial advisors recommendation is somewhat important, for 108 investors brokers/financial advisors recommendation is slightly important, for 26 investors brokers/financial advisors recommendation is not important. Most of the investors take recommendation of the financial advisors/brokers while investing in the stock. Because they think that the brokers or financial advisors will give better suggestions as they are very close to the ups and down of the stock market. For some of the investors, their recommendation is not important as they believe in taking advice from their friends or relatives.

- There are 55 investors for whom newspapers/ magazines are very important, for 128 investor's newspapers/ magazines are important, for 141 investors newspapers/ magazines are somewhat important because they believe that it is better to consider the newspapers/magazines rather than taking advice from brokers or friends or co-workers or relatives, for 111 investors newspapers/ magazines are slightly important and for 65 investors newspapers/ magazines are not important.
- There are 89 investors for whom financial statements/annual reports are very important, for 104 investors' financial statements/annual reports are important, for 163 investors financial statements/annual reports are somewhat important because they believe that in order to invest in stock market it is better to check the financial statements/annual reports of the company, for 95 investors financial statements/annual reports are slightly important and for 49 investors financial statements/annual reports are not important because for them, the friends or brokers advice is better than considering the financial statements/ annual reports of the company.
- There are 87 investors for whom computer/internet is very important, for 157 investors computer/internet is important because they consider the information available over computer or internet while investing in stock market as they are more educated and use the latest technology, for 132 investors computer/internet is somewhat important, for 90 investors computer/internet is slightly important and for 34 investors computer/internet is not important because they believe that rather

than considering the information available over the computer or internet, the information available in the annual reports are much important.

- There are 83 investors for whom gross domestic product is very important, for 113 investors gross domestic product is important, for 153 investors gross domestic product is somewhat important because when there is any change in GDP, whether increase or decrease, it will effect the stock market, for 100 investors gross domestic product is slightly important and for 51 investors gross domestic product is not important.
- There are 103 investors for whom interest rate is very important, for 88 investors interest rate is important, for 120 investors interest rate is somewhat important because when the interest rates are high, the price of the stock decreases, for 139 investor's interest rate is slightly important and for 50 investors interest rate is not important.
- There are 75 investors for whom inflation rate is very important, for 169 investors inflation rate is important, for 106 investors inflation rate is somewhat important, for 114 investors inflation rate is slightly important and for 36 investor's inflation rate is not important. Most of the investors believe that when the inflation rate is high, their purchasing power will reduce.
- There are 89 investors for whom strong confidence on economy is very important, for 135 investors strong confidence on economy is important, for 146 investors strong confidence on economy is somewhat important, for 102 investors strong confidence on economy is slightly important and for 28 investors strong confidence on economy is not important.
- There are 61 investors for whom government stability is very important, for 149 investor's government stability is important because they believe that when there is stable government then they can take the long term investment decisions, for 124 investors government stability is somewhat important, for 131 investors government stability is slightly important and for 35 investors' government stability

is not important because these type of investors invest for short term.

- There are 71 investors for whom stock market performance is very important, for 128 investors stock market performance is important because they believe that if the market performance is good then they can take the decisions wisely, for 152 investors stock market performance is somewhat important, for 100 investors stock market performance is slightly important and for 49 investors stock market performance is not important.
- There are 71 investors for whom past performance of industry is very important, for 82 investors past performance of industry is important, for 196 investors past performance of industry is somewhat important because they believe that it is better to check the past performance of the company when you are investing in the stock market, for 94 investors past performance of industry is slightly important and for 57 investors past performance of industry is not important.
- There are 62 investors for whom growth rate of the industry is very important, for 163 investors growth rate of the industry is important because if the company is at growth stage or the company is growing then the investors will invest in that particular industry as they will get good returns, for 123 investors growth rate of the industry is somewhat important, for 116 investors growth rate of the industry is slightly important as they consider the other factors while investing and for 36 investors growth rate of the industry is not important.
- There are 73 investors for whom firm status in industry life cycle is very important, for 128 investors firm status in industry life cycle is important, for 143 investors firm status in industry life cycle is somewhat important as they consider that if the status of the firm is not good then the investment cannot be made in that particular stock of that firm, for 108 investors firm status in industry life cycle is slightly important and 48 investors firm status in industry life cycle is not important.
- There are 59 investors for whom size of the firm is very important, for 154 investors size of the firm is important because the stocks of the firms which are small in size earn the higher returns than the stocks of the firms which are large in

size, for 112 investors size of the firm is somewhat important, for 123 investors size of the firm is slightly important and for 52 investors' size of the firm is not important.

- There are 77 investors for whom firm's product is very important, for 127 investors firm's product/service quality is important, for 152 investors firm's product/service quality is somewhat important because they believe that if the firm status is good then its product must also be good but sometimes the firm's product is not good so they collect information regarding the firm's product while investing, for 97 investors firm's product/service quality is slightly important and for 47 investors firm's product/service quality is not important.
- There are 76 investors for whom reputation of the firm is very important, for 150 investors reputation of the firm is important because they believe that if the reputation of the firm is not good in the market then there is no use of investing in the shares of that particular firm, for 136 investors reputation of the firm is somewhat important, for 109 investors reputation of the firm is slightly important and 29 investors reputation of the firm is not important.
- There are 65 investors for whom quality of management is very important, for 158 investors quality of management is important, for 147 investors quality of management is somewhat important, for 81 investors quality of management is slightly important, for 49 investors quality of management is not important.
- There are 91 investors for whom perceived ethics of the firm is very important, for 109 investors perceived ethics of the firm is important, for 174 investors perceived ethics of the firm is somewhat important because if the firm does not follow the perceived ethics then the investors will not invest in that particular firm, for 108 investors perceived ethics of the firm is slightly important and for 18 investors perceived ethics of the firm is not important.
- There are 55 investors for whom firm's local operations is very important, for 144 investors firm's local operations is important because it will increase or decrease

the reputation of the firm, for 171 investors firm's local operations is somewhat important, for 95 investors firm's local operations is slightly important and for 35 investors firm's local operations is not important.

- There are 66 investors for whom international operations of the firm is very important, for 171 investors firm's international operations is important because it will increase or decrease the reputation of the firm, for 136 investors firm's international operations is somewhat important, for 92 investors firm's international operations is slightly important and for 35 investors firm's international operations is not important.
- There are 66 investors for whom stock price per share is very important, for 172 investors stock price per share is important because when there is any change in the stock price per share then the investors will purchase or sell the stock accordingly, for 135 investors stock price per share is somewhat important, for 82 investors stock price per share is slightly important and for 45 investors' stock price per share is not important.
- There are 77 investors for whom earning per share is very important, for 158 investors earning per share is important as the earnings of the company increases the earning per share also increases, for 142 investors earning per share is somewhat important, for 98 investors earning per share is slightly important and for 25 investors' earning per share is not important.
- There are 83 investors for whom price to earnings ratio is very important, for 152 investors price to earnings ratio is important because is the ratio is high then the investors become optimistic and they think that the company will enjoy high earning growth in future, for 139 investors price to earnings ratio is somewhat important, for 91 investors price to earnings ratio is slightly important and for 35 investors price to earnings ratio is not important.
- There are 44 investors for whom dividend payout ratio is very important, for 152 investors dividend payout ratio is important as the investors can check through this

ratio that the how much dividend is paid by the company to its shareholders, for 154 investors dividend payout ratio is somewhat important, for 95 investors dividend payout ratio is slightly important and for 55 investors' dividend payout ratio is not important.

- There are 64 investors for whom book value of one share is very important, for 151 investors book value of one share is important, for 136 investors book value of one share is somewhat important, for 120 investors book value of one share is slightly important and for 29 investors' book value of one share is not important.
- There are 73 investors for whom current ratio is very important, for 150 investors current ratio is important because this ratio is used to check whether the company is able to meet its short term liabilities with its short term assets, for 119 investors current ratio is somewhat important, for 105 investor's current ratio is slightly important and for 53 investors current ratio is not important.
- There are 63 investors whom debt to equity ratio is very important, for 191 investors debt to equity ratio is important as the company with high debt ratio will not attract the investors to invest because the company is not able to satisfy their debts, for 153 investors debt to equity ratio is somewhat important, for 62 investors' debt to equity ratio is slightly important and for 31 investors' debt to equity ratio is not important.
- There are 66 investors whom return on equity is very important, for 147 investors return on equity is important because the investors look at the past earnings of the company and they can check the benefits which are given by the company to their investors, for 152 investors return on equity is somewhat important, for 110 investors' return on equity is slightly important and for 25 investors' return on equity is not important.

7.3 RELATIONSHIP BETWEEN RISK TOLERANCE AND INVESTMENT DECISIONS

Correlation statistics has been used to study the relation between investors risk tolerance and their investment decisions. Correlation is a statistical technique to find out whether there is any relation between two different variables.

Hypothesis H₀: There is no significant relation between Risk Tolerance and Investment Decisions of the investors

H₅: There is significant relation between Risk Tolerance and Investment Decisions of the investors

The table 7.11 presents the relation among the investors risk tolerance and their investment decisions with the significance value 0.000 (which is less than 0.05) at 95 percent confidence level. Thus, the alternative hypothesis (H₅) is accepted. It reveals that there is a significant relation among the investors' investment decisions and their risk tolerance. When there is increase of one point in Risk tolerance it will result into positive increase of 0.649 points in investors' investment decisions. The value of $r = 0.649$ which means that there is moderate degree of positive correlation between the investment decisions and risk tolerance of the investors. The investors who take more risk they invest more in stock market and vice versa.

Table 7.11: Correlation between Risk Tolerance and Investment Decisions of the investors

		Investment Decisions	Risk Tolerance
Investment Decisions	Pearson Correlation	1	.649
	Sig. (2-tailed)		.000
	N	500	500
Risk Tolerance	Pearson Correlation	.649	1
	Sig. (2-tailed)	.000	
	N	500	500

Source: Primary Data

The value of $r = 0.649$ which means that the risk tolerance is related with the investment decisions of investors.

The investors who think that the risk is danger and uncertainty they invest more in stock market. The investors who think that they are extremely high risk takers they invest more in stock market. If the investors think that they can accept the sharp ups and downs in the value of their investments for which they get higher return, they invest more in stock market.

Some investors hold their investment comfortably when their investment value drops down. They think that they can take more risk and invest more in stock market. If the investor is willing to take the risks for which they get more return than the inflation rate then he invest more in stock market.

If the investor considers that he has knowledge regarding the risks and returns while investing in stocks and other types of securities then he take more risk and invest more in stock market. If the investor's personal investment changed mostly towards the high risk then he is a risk taker and invests more in stock market.

7.4 RISK TOLERANCE AS MEDIATING VARIABLE

This section has attempted to identify whether the risk tolerance plays as a mediator among the independent variables (Demographic Attributes, Personality Traits, Emotional Intelligence and Behavioral Biases) and the dependent variable (Investment Decisions). From the results of the study, we have found that there is positive or negative relation between the risk tolerance and the investment decisions and the personality traits, emotional intelligence and behavioral biases of the investors. The Process Macro technique by Andrew F. Hayes has been used in order to check whether there is partial mediation or full mediation present among the dependent and independent variable. Mediation is a situation in which the effect of the independent variable on the dependent variable is explained better by using the mediator variable. A mediator variable is caused by the independent variable and a cause for the dependent variable. This study observes the relationship between an independent variable (X) and a dependent variable (Y) both before

and after controlling for a mediator (M). A significant indirect effect, if there is no significant direct effect of X on Y, then there is case of perfectly, completely, or fully mediator and if there is a significant direct X on Y after controlling the mediator then there is a case of partial mediation (Rucker *et al.*, 2011)

The following conditions for mediation in PROCESS MACRO need to be fulfilled:

- The independent variable is significantly related to the dependent variable. (path c)
- The dependent variable is significantly related to the mediating variable. (path a)
- The mediating variable is significantly related to the independent variable. (path b)
- The effect of the independent variable on the dependent variable is no longer significant controlling the mediating variable. (path c')

As, there are three independent variable in our study, they will be studied one by one.

7.4.1 Personality Traits

In this, X is Personality Traits (independent variable), Y is Investment Decisions (Dependent Variable) and M is Risk Tolerance (Mediating Variable) as given in fig 7.1. All the conditions of process macro has been studied. The sheet is shown in Annexure 2. Therefore, the following hypothesis is framed and tested.

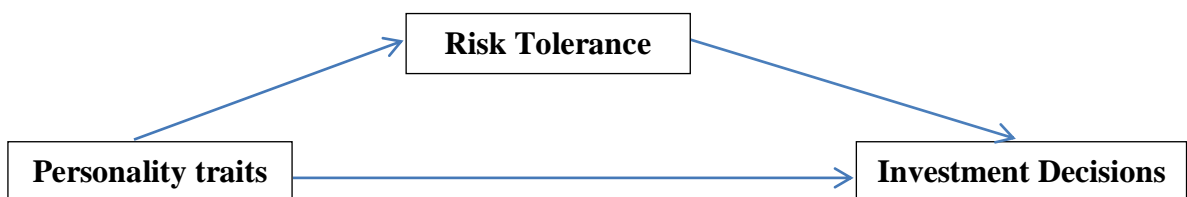


Fig 7.1: Relation of Personality Traits and Investment Decisions through Risk Tolerance as mediator

Hypothesis H₁₀: The Personality Traits - Investment Decisions relationship is mediated by Risk Tolerance

1. X variable predicts Y – path c

a) $F(1,498) = 48.3395, p < 0.05, R^2 = 0.0885$

b) $b = 0.4210$, $t(498) = 6.95$, $p < 0.05$

2. X variable predicts M – path a

a) $F(1,498) = 20.667$, $p < 0.05$, $R^2 = 0.0398$

b) $b = 0.2898$, $t(498) = 4.55$, $p = 0.00$

3. X and M together predicting Y

$F(2,497) = 203.72$, $p < 0.05$, $R^2 = 0.45$

a) M variable predicts y---path b

$b = 0.5985$, $t(497) = 18.09$, $p = 0.000$

b) X variable no longer predicts y or lessened predicts y—path c'

$b = 0.25$, $t(497) = 5.15$, $p = 0.000$

4. Indirect effect = 0.1735, $z = 4.4026$, $p = 0.000$

First of all the relation between the personality traits of the investors and the investment decisions are checked. The F-value is 48.3395, R-square is 0.0885, As the p value is 0.000 which is less than 0.05, so there is significant relation between the personality traits and the investment decisions of the investors. The beta coefficient is 0.4210 which is used to determine the size and the direction of the relationship. It shows that when there is one point increase in the personality traits, the investment decisions will increase by 0.4210.

Now the relation between the risk tolerance and the personality traits of the investors are considered. The F-value is 20.6657; R-square is 0.398, As the p value is 0.000 which is less than 0.05, so there is significant relation between the risk tolerance and the personality traits of the investors. The beta coefficient is 0.2898 which is used to determine the size and the direction of the relationship. It shows that when there is one point increase in the personality traits, the risk tolerance will increase by 0.2898.

Now the relation between risk tolerance and the investment decisions of the investors are considered by controlling the personality traits of the investors. The F-value is 203.7197, R-square is 0.45. As the p value is 0.000 which is less than 0.05, so there is significant relation between the risk tolerance and the investment decisions of the investors. The beta coefficient is 0.5985 which is used to determine the size and the direction of the

relationship. It shows that when there is one point increase in the risk tolerance, the investment decisions change by 0.5985.

Now the relation between investment decisions and the personality traits of the investors are considered by controlling the risk tolerance of the investors. The F-value is 203.7197, R-square is 0.45. As the p value is 0.000 which is less than 0.05, so there is significant relation between the investment decisions and the personality traits of the investors and the personality traits still predict the investment decisions of the investors but with the reduced value while controlling the risk tolerance of the investors. The beta coefficient is 0.25 which is used to determine the size and the direction of the relationship. As the beta value has been reduced from the direct relation between the investment decisions and the personality traits of the investors. Therefore, it shows that there is partial mediation. The risk tolerance plays partial mediator role in the personality traits and the investment decisions of the investors. Therefore, the hypothesis H_{10} is accepted, the Personality Traits - Investment Decisions relationship is partially mediated by Risk Tolerance.

The indirect effect of the personality traits on the investment decisions of the investors is done by applying Sobel test. As the p value is 0.000 which is less than 0.05 so there is an indirect effect of the personality traits on the investment decisions of the investors. It shows that there is partial mediation present in the personality traits and the investment decisions of the investors. The effect is 0.1735 and the z value is 4.4026.

7.4.2 Behavioral Biases

In this, X is Behavioral Biases (independent variable), Y is Investment Decisions (Dependent Variable) and M is Risk Tolerance (Mediating Variable) as given in fig 7.2. All the conditions of process macro have been studied. The sheet is shown in Annexure 2. Therefore, the following hypothesis is framed and tested.

H_{11} : The Behavioral Biases - Investment Decisions relationship is mediated by Risk Tolerance

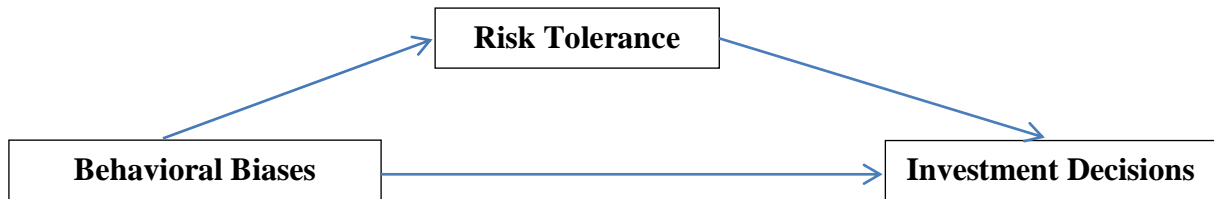


Fig 7.2: Relation of Behavioral Biases and Investment Decisions through Risk Tolerance as mediator

1. X variable predicts Y – path c

a) $F(1,498) = 130.5036, p < 0.05, R^2 = 0.2076$

b) $b = 0.4704, t(498) = 11.4238, p = 0.000$

2. X variable predicts M – path a

a) $F(1,498) = 95.68, p < 0.05, R^2 = 0.0862$

b) $b = 0.3109, t(498) = 6.85, p = 0.000$

3. X and M together predicting Y

$F(2,497) = 246.59, p < 0.05, R^2 = 0.498$

a) M variable predicts y---path b

$b = 0.5495, t(497) = 16.9579, p = 0.000$

b) X variable no longer predicts y or lessened predicts y—path c'

$b = 0.2995, t(497) = 8.7287, p = 0.000$

4. Indirect Effect = 0.1708, $z = 6.3445, p = 0.000$

First of all the relation between the behavioral biases of the investors and the investment decisions are checked. The F-value is 130.5036, R-square is 0.2076, As the p value is 0.000 which is less than 0.05, so there is significant relation between the behavioral biases and the investment decisions of the investors and there is mediation between the behavioral biases and the investment decisions of the investors. The beta coefficient is 0.4704 which is used to determine the size and the direction of the relationship. It shows that when there is one point increase in the behavioral biases, the investment decisions will change by 0.4704.

Now the relation between the risk tolerance and the behavioral biases of the investors are considered. The F-value is 46.9670; R-square is 0.0862, As the p value is 0.000 which is less than 0.05, so there is significant relation between the risk tolerance and the behavioral biases of the investors. The beta coefficient is 0.3109 which is used to determine the size and the direction of the relationship. It shows that when there is one point increase in the behavioral biases, the risk tolerance will change by 0.3109.

Now the relation between risk tolerance and the investment decisions of the investors are considered by controlling the behavioral biases of the investors. The F-value is 246.5861, R-square is 0.4981. As the p value is 0.000 which is less than 0.05, so there is significant relation between the risk tolerance and the investment decisions of the investors. The beta coefficient is 0.5495 which is used to determine the size and the direction of the relationship. It shows that when there is one point increase in the risk tolerance, the investment decisions will change by 0.5495.

Now the relation between investment decisions and the behavioral biases of the investors are considered by controlling the risk tolerance of the investors. The F-value is 246.5861, R-square is 0.4981. As the p value is 0.000 which is less than 0.05, so there is significant relation between the investment decisions and the behavioral biases of the investors and the behavioral biases predict the investment decisions of the investors in a lessened value while controlling the risk tolerance of the investors. The beta coefficient is 0.2995 which is used to determine the size and the direction of the relationship. As the beta value has been reduced from the direct relation between the investment decisions and the behavioral biases of the investors. Therefore, it shows that there is partial mediation. The risk tolerance plays partial mediator role in the behavioral biases and the investment decisions of the investors. Therefore, the hypothesis H_{11} is accepted, the Behavioral Biases - Investment Decisions relationship is partially mediated by Risk Tolerance.

The indirect effect of the behavioral biases on the investment decisions of the investors is done by applying Sobel test. As the p value is 0.000 which is less than 0.05 so there is an indirect effect of the emotional intelligence on the investment decisions of the investors. It

shows that there is partial mediation present in the emotional intelligence and the investment decisions of the investors. The effect is 0.1708 and the z value is 6.3445.

7.4.3 Emotional Intelligence

In this, X is Emotional Intelligence (independent variable), Y is Investment Decisions (Dependent Variable) and M is Risk Tolerance (Mediating Variable) as given in fig 7.3. All the conditions of process macro have been studied. The sheet is shown in Annexure 2. Therefore, the following hypothesis is framed and tested:

H₁₂: The Emotional Intelligence - Investment Decisions relationship is mediated by Risk Tolerance

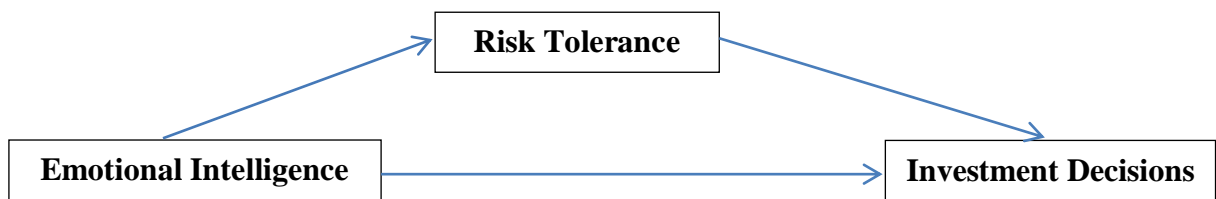


Fig 7.3: Relation of Emotional Intelligence and Investment Decisions through Risk Tolerance as mediator

1. X variable predicts Y – path c

- a) $F(1,498) = 337.358, p < 0.05, R^2 = 0.4038$
- b) $b = 0.6808, t(498) = 18.3673, p = 0.000$

2. X variable predicts M – path a

- a) $F(1,498) = 95.68, p < 0.05, R^2 = 0.1612$
- b) $b = 0.4412, t(498) = 9.78, p = 0.000$

3. X and M together predicting Y

$$F(2,497) = 355.75, p < 0.05, R^2 = 0.588$$

- a) M variable predicts y---path b
 $b = 0.4576, t(497) = 14.948, p = 0.000$
- b) X variable no longer predicts y or lessened predicts y—path c'

$$b = 0.4789, t(497) = 14.2327, p = 0.000$$

4. Indirect Effect = 0.2019, $z = 8.1720$, $p = 0.000$

First of all the relation between the emotional intelligence of the investors and the investment decisions are checked. The F-value is 337.35, R-square is 0.1392, As the p value is 0.000 which is less than 0.05, so there is significant relation between the emotional intelligence and the investment decisions of the investors and there is mediation between the emotional intelligence and the investment decisions of the investors. The beta coefficient is 0.6808 which is used to determine the size and the direction of the relationship. It shows that when there is one point increase in the emotional intelligence, the investment decisions will change by 0.6808.

Now the relation between the risk tolerance and the emotional intelligence of the investors are considered. The F-value is 95.6751, R-square is 0.161, As the p value is 0.000 which is less than 0.05, so there is significant relation between the risk tolerance and the emotional intelligence of the investors. The beta coefficient is 0.4412 which is used to determine the size and the direction of the relationship. It shows that when there is one point increase in the emotional intelligence, the risk tolerance will change by 0.4412.

Now the relation between risk tolerance and the investment decisions of the investors are considered by controlling the emotional intelligence of the investors. The F-value is 355.7462, R-square is 0.5887. As the p value is 0.000 which is less than 0.05, so there is significant relation between the risk tolerance and the investment decisions of the investors. The beta coefficient is 0.4576 which is used to determine the size and the direction of the relationship. It shows that when there is one point increase in the risk tolerance, the investment decisions will change by 0.4576.

Now the relation between investment decisions and the emotional intelligence of the investors are considered by controlling the risk tolerance of the investors. The F-value is 203.7197, R-square is 0.45. As the p value is 0.000 which is less than 0.05, so there is significant relation between the investment decisions and the emotional intelligence of the investors and the emotional intelligence predict the investment decisions of the investors in a reduced value, while controlling the risk tolerance of the investors. The beta coefficient is

0.4789 which is used to determine the size and the direction of the relationship. As the beta value has been reduced from the direct relation between the investment decisions and the emotional intelligence of the investors. Therefore, it shows that there is partial mediation. The risk tolerance plays partial mediator role in the emotional intelligence and the investment decisions of the investors. Therefore, the hypothesis H_{12} is accepted, the Emotional intelligence - Investment Decisions relationship is partially mediated by Risk Tolerance.

The indirect effect of the emotional intelligence on the investment decisions of the investors is done by applying Sobel test. As the p value is 0.000 which is less than 0.05 so there is an indirect effect of the emotional intelligence on the investment decisions of the investors. It shows that there is partial mediation present in the emotional intelligence and the investment decisions of the investors. The effect is 0.2019 and the z value is 8.1720.

The study has already found that there is no relation between the demographic attributes and the investment decisions of the investors. There is no relation between the demographic attributes and the risk tolerance of the investors. So there can be no mediation. The process macro cannot be applied. So H_{13} is not accepted.

From the above discussion, it has been found that the risk tolerance of the investors acts as a partial mediator between emotional intelligence and the investment decisions of the investors. However, there is relation between the risk tolerance and the investment decisions of the investors and the emotional intelligence and the risk tolerance of the investors. The personality traits of the investors can better predict the investment decisions of the investors through the mediator (risk tolerance). The risk tolerance of the investors acts as a partial mediator between personality traits and the investment decisions of the investors. The behavioral biases of the investors can better predict the investment decisions of the investors through the mediator (risk tolerance). The emotional intelligence of the investors can better predict the investment decisions of the investors through the mediator (risk tolerance).

Chapter- 8

FINDINGS, SUGGESTIONS AND CONCLUSION

This chapter concludes the study with key findings, suggestions, their implications to financial advisors, brokers, investment advisors and future researchers.

Every person has his or her personality traits and faces with the different behavioral biases. Likewise, the risk tolerance depends on the personality traits. The most important is that the investors must have the knowledge of their own personality, psychological biases and their emotional intelligence. Every individual has a different personality and they invest according to their personality. Some are extrovert in nature, some are introvert and they differ according to their personality. The personalities of the individual vary them from the other individual. Accordingly, they take risk which may vary from one individual to another. It is known that every individual has different emotional intelligence. Moreover, the individual invest in different avenues according to their emotional intelligence. In this study, the relation between investment decisions and personality traits, emotional intelligence, demographic attributes and behavioral biases are found. Moreover, our study provides a better understanding of the personality traits, emotional intelligence and behavioral biases of the investors affect the investment decisions through the risk tolerance of the investors.

8.1 FINDINGS

Based upon the analysis and interpretation of data, in the previous chapters, the study comes out with following prominent findings:

- It can be observed from the results that five most preferred investment strategies as perceived by the investors are: Buy stock for which good news is expected, Buy stock which is most actively traded, Buy stock which is expected to announce bonus issue and/or stock split, Contrarian effect (buy past losers) and Buy stock which has announced good quarterly results.

- There are certain strategies which are least preferred by the investor while investing in the stock market. These strategies are Day of the week effect, April effect, Leverage effect, and Value effect.
- The investors of age group below or equal to 30 and 31-40 are strongly agree with the P/E effect strategy. The investors of age group of 31-40 are strongly agreed with the strategy for which good news is expected.
- There is positive correlation between the investor's investment decisions and their risk tolerance. The investors who take more risk they invest more in stock market and vice versa.
- The investor considers that he has knowledge about the risks and returns while investing in stocks and other securities then he takes more risk and invests more in stock market.
- There is significant relation between Investors Personality traits and their risk tolerance. There is a significant relation among Investors Emotional Intelligence and their risk tolerance. There is a relation between Investors Behavioral Biases and their risk tolerance.
- The Behavioral Biases of the investors are considered to be an important factor for Investors risk tolerance.
- There is no relation between the demographic attributes and investors risk tolerance.
- There is no change in the investors risk tolerance with any income group whether the annual income of the investor is less than 200000, 200001-500000, 500001-1000000 and above 1000000 while investing in stock market.
- The investors with any age group take same risk while investing in stock market.
- It means that there is a relation among agreeableness trait and investors risk tolerance, extroversion trait and investors risk tolerance, openness to experience trait and investors risk tolerance. There is no relation among conscientiousness trait and investors risk tolerance, neuroticism trait and investors risk tolerance.
- The investors who are extrovert enjoy spending time with the other people and they have positive emotions and are energetic persons. The investors who have high score on extraversion take more risk.

- The investors who have high score on agreeableness take more risk. They are cooperative; respect every person and their opinion. They are more reliable persons.
- Investors who score high on openness to experience they are always ready for new things. He is always ready to accept the change in the market regarding the investment and change his portfolio according to the changes occurs in the situation of the market and take more risk.
- There is a relation between self awareness and investors risk tolerance, handling emotions and investors risk tolerance, motivation and investors risk tolerance. There is no relation between empathy and investors risk tolerance, social skills and investors risk tolerance.
- The investors recognize their strong points and their weaknesses will take more risk. The investors who don't recognize their strong points and weaknesses will take less risk.
- The investors who are positive will take more risk when they are under pressure. The investors who are always ready to work hard to achieve their goals and don't have negative view point take more risk.
- Handling emotions will help the individual investors to take correct decision when they are in difficult situations and when they can't handle their emotions they will have to suffer losses in future.
- There is a relation among overconfidence and investors risk tolerance, regret and investors risk tolerance. There is no relation among conservatism and investors risk tolerance, herding and investors risk tolerance.
- Investors are over-confident regarding the decisions they have taken for the investment. They think that they take all the right decisions regarding investment.
- The investors who consider their past experience invest more and invest very securely in stock market and take more risk. Every person experienced the regret bias in life.
- There is a significant relation among Investors Personality traits and their Investment Decisions. There is a significant relation among Investors Emotional Intelligence and their Investment Decisions. There is a significant relation among Investors Behavioral Biases and their Investment Decisions. There is no relation between demographic attributes and Investment Decisions of investors.

- Investors' emotional intelligence is the main predictor of investors' investment decisions. The Investors who have high score on emotional intelligence can take good decisions.
- Investors Investment Decisions does not depend on any of the demographic attributes. There is no disparity in the Investors Investment Decisions regarding different age groups, gender, marital status, different educational qualification and different income groups of the investors.
- There is no change in the Investors Investment Decisions with any income group whether the annual income of the investor is less than 200000, 200001-500000, 500001-1000000 and above 1000000 while investing in stock market.
- There is a significant relation between agreeableness trait and investor's investment decisions, extroversion trait and investor's investment decisions, openness to experience trait and investor's investment decisions. There is no significant relation between conscientiousness trait and investors investment decisions, neuroticism trait and investor's investment decisions.
- The investors who have high score on agreeableness take more risk. They are cooperative; respect every person and their opinion. They are more reliable. They invest more in stock market. they type of people rely more on the opinion of the others
- The investors who are extrovert enjoy spending time with the other people and they have positive emotions and are energetic persons. The investors who have high score on extraversion invest more in stock market.
- The people are conscientious they invest less in stock market. These people have confidence in themselves, they care for others, and they have to achieve their goals in life. There is a significant relation between conscientiousness trait and investors investment decisions.
- Investors who score high on openness to experience they are always ready for new things. He is always ready to accept the change in the market regarding the investment and he change his portfolio according to the changes occur in the situation of the market. They take more risk and invest more in the stock market.
- There is a relation between self awareness and investor's investment decisions, handling emotions and investor's investment decisions, motivation and investor's

investment decisions, empathy and investor's investment decisions, social skills and investor's investment decisions.

- The investors who are positive when they are under pressure will invest more in the stock market. The investors who are always ready to work hard to achieve their goals and don't have negative view point take more risk.
- There is relation between overconfidence and Investors Investment decisions, regret and Investors Investment decisions. There is no relation between conservatism and investors investment decisions, herding and investors Investment decisions.
- This is the mentality of people to be conservative or risk averse and stick to their prior views and they find newer options to be costly. The investors are regret about their decisions when they purchase the stock at high price and sell the stock at a price lower than their purchase price. They hold the stock for a long time till the price will reach at the price which is lower than their purchase price.
- The risk tolerance of the investors acts as a partial mediator between emotional intelligence and the investors investment decisions.
- The personality traits of the investors can better predict the investor's investment decisions through the mediator (risk tolerance).
- The behavioral biases of the investors can better predict the investor's investment decisions through the mediator (risk tolerance).
- As there is no relation between the demographic attributes and the investment decisions and risk tolerance, so the risk tolerance does not act as a mediator between the demographic and the investors investment decisions.

8.2 SUGGESTIONS

- The investors must not follow the majority of the people. He should have knowledge about his investments while investing in any stock.
- The investors should not invest in a stock on the advice of the others. The investor should not base their investment depending on the performance of the stock in the past.

- The financial advisors should focus on the overconfidence and regret behavioral biases of investors while making investment decisions so that they can advise them accurately in order to lessen such type of biases.
- Investors should be patient before and after taking investment decisions.
- Investors should carefully identify and analyse the behavioral factors which affects the investment decisions of the investors.
- The financial planners and financial advisors should consider the personality traits of the different investors such as extroversion, agreeableness and openness to experience in order to perceive the type of investment which best suit the investors.
- The financial planners, financial managers and financial advisors should focus on the strategies which are most preferred by the investors such as Buy stock for which good news is expected, Buy stock which is most actively traded, Buy stock which is expected to announce bonus issue and/or stock split, Contrarian effect (buy past losers) and Buy stock which has announced good quarterly results and advice the investors accordingly.
- The companies should provide more information on the internet about the investment avenues. So, the individual investors should get all recent information about the investment avenues.
- The financial planners and financial advisors should consider the emotional intelligence of the different investors as all the dimensions of emotional intelligence are strongly related with the investment decisions, in order to perceive the type of investment which best suit these investors.
- The financial advisors should focus on the different personality traits of the investors which affect their risk tolerance so that they can advise them accordingly.
- The financial advisors should consider the behavioral factors which affect the risk tolerance of the investors so that they can advise them accordingly.
- As the risk tolerance partially mediates between the investment decisions and the risk tolerance so the companies should focus on the behavioral biases of the investors in order to have better decision making.
- The investor has to increase their knowledge regarding behavioral finance.
- The investors of all age group must have knowledge regarding the investment, so that they can select the best investment avenue accordingly.

- The companies should provide information to the investors regarding the benefits of making investment in stock market.

CONCLUSION

The study significantly enhances the investment decisions and risk tolerance literature. Though we do not claim the generalization of findings, the study has contributed in more than one ways. The study contributes to the literature by providing validated scales for risk tolerance, investment decisions, personality traits, emotional intelligence and behavioral biases. The results of the study extend the literature by producing empirical evidence in support of relationship among these variables in the Indian context. In the modern world, the risk management practices are gaining much impact and hence understanding the investment behavior becomes more crucial. The investors are so busy in their life so the portfolio companies should provide assistance and guide to them according to their behavior.

The future studies may consider the other stock exchanges for studying the relationship among these variables. The future researchers may study the relation between the investment avenues and personality traits, emotional intelligence and behavioral biases as in the present study only stock market is considered. The future studies may consider other states for studying relationship among these variables. The future researchers may study the relation between the investment decisions and financial literacy of the investors.

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QUESTIONNAIRE

Respected Sir/Madam,

I, Saloni Raheja, Ph.D scholar in Lovely Professional University, Phagwara, will be grateful if you could spare some time to assist in my research by completing the questionnaire given below. I assure that all the information given by you will be treated as confidential.

1. How important is each of the following factors to you in your decisions in investing or buying stocks? Please tick the corresponding block out of 5 given alternatives.

Sr. No	Factors	Not Imp 1	Slightly Imp 2	Somewhat Imp 3	Imp 4	Very Imp 5
	Objective Factors					
1	Short Term Capital Gains					
2.	Long Term Capital Appreciation					
3.	Dividend Income					
4.	Diversification					
5.	Minimising Risk					
	Sources of Information Factors					
6.	Family / Relative Opinion					
7.	Friends / Co-workers Recommendation					
8.	Brokers / Financial Advisors Recommendation					
9.	Newspapers / Magazines					
10.	Financial Statement / Annual Reports					
11.	Computer / Internet					
	Economic / Market Factors					
12.	Gross Domestic Product					
13.	Interest Rates					
14.	Inflation Rates					
15.	Strong Confidence on Economy					
16.	Government Stability					
17.	Stock Market Performance					
	Industry Factors					
18.	Past Performance of Industry					
19.	Growth rate of Industry					
20.	Firm's Status in Industry Life Cycle					
	Company Qualitative Factors					
21.	Size of Firm					
22.	Firm's Product / Services Quality					
23.	Reputation of Firm					
24.	Quality of Management					
25.	Perceived Ethics of the Firm					
26.	Firm's Local Operations					
27.	Firm's International Operations					
	Company Quantitative Factors					
28.	Stock Price per Share					
29.	Earnings Per Share (EPS)					
30.	Price to Earnings Ratio (P/E Ratio)					
31.	Dividend Payout Ratio					
32.	Book Value per Share					
33.	Current Ratio					
34.	Debt to Equity Ratio					
35.	Return on Equity					

2. Given below are the 21 statements regarding the strategies used by the investor. After reading each statement carefully, please tick the corresponding block out of 5 given alternatives, which you feel that effects

your decision. If you strongly disagree with the statement tick the block '1', if you strongly agree with the statement tick the block '5' and if you are undecided tick the block '3'.

Sr. No.	Particulars	1	2	3	4	5
1	Size effect (buy small cap stocks)					
2	Value effect(buy high Book to market equity stocks)					
3	Leverage effect(buy stocks of highly levered companies)					
4	P/E effect (buy low P/E stocks)					
5	January Seasonality effect (buy stocks in December and sell in January)					
6	April effect(buy stocks in March and sell in April)					
7	Day of the week effect (buy Monday sell Friday)					
8	Intra month effect					
9	Pre holiday effect					
10	Momentum effect (buy past winners)					
11	Contrarian effect(buy past losers)					
12	Follow the investment behavior of FIIs					
13	Buy stocks whose price has crossed 52 week high					
14	Buy stocks whose price has gone down by 20%					
15	Buy stock whose price has gone up by 20%					
16	Buy stock for which a good news is expected					
17	Buy stock which is expected to announce bonus issue and/or stock split					
18	Buy stock which is most actively traded					
19	Buy stock which has announced good quarterly results					
20	Buy stocks on the basis of 30 days moving average					
21	Buy stocks on the basis of Relative Strength Index					

3. Please signify your level of agreement with the following statements.

Sr. No.	STATEMENTS (i see myself as one who...)	Strongly agree	agree	neutral	disagree	Strongly disagree
1. E	Is talkative					
2 A	Tends to find fault with others					
3 C	Does a thorough job					
4 N	Is depressed					
5 O	Is original, comes up with new ideas					
6 E	Is reserved					
7A	Is helpful and unselfish with others					
8 C	Can be somewhat careless					
9 N	Is relaxed, handles stress well					
10 O	Is curious about many different things					
11 E	Is full of energy					
12 A	Starts fighting with others					
13 C	Is a reliable worker					
14 N	Can be tensed					
15 O	Is clever, a deep thinker					
16 E	Is Passionate in nature					
17 A	Has a forgiving nature					
18 C	Tends to be disorganized					
19 N	Worries a lot					
20 O	Has an active imagination					
21 E	Tends to be quiet					
22 A	Is generally trusting					
23 C	Tends to be lazy					
24 N	Is emotionally stable, not easily upset					
25 O	Is inventive					
26 E	Has a self-confident personality					
27 A	Can be cold and unfriendly					

28 C	Work hard until the task is finished					
29 N	Can be moody					
30 O	Gives value to aesthetic experiences					
31 E	Is sometimes shy					
32 A	Is caring and kind to almost everyone					
33 C	Does things efficiently					
34 N	Remains calm in tense situations					
35 O	Likes routine work					
36E	Is outgoing, sociable					
37 A	Is sometimes rude to others					
38 C	Makes plans and follows them					
39 N	Gets nervous easily					
40 O	Likes to reflect, play with ideas					
41O	Has few inventive interests					
42 A	Likes to cooperate with others					
43 C	Is easily distracted from work					
44 O	Seeks interest in art, music, or literature					

4. Given below are various statements regarding the behavioral biases of the investor. After reading each statement carefully, please tick the corresponding block out of 5 given alternatives, which you feel that effects your decision. If you strongly disagree with the statement tick the block '1', if you strongly agree with the statement tick the block '5' and if you are undecided tick the block '3'.

Sr. No.	STATEMENTS	1	2	3	4	5
OVR 1	Losses in my investments have frequently been caused by external circumstances such as macroeconomics developments.					
OVR 2	Gains in my investments must be attributed to my competence as an investor.					
OVR 3	My failed investments have often been the result of unfavourable circumstances					
OVR 4	My instinct has often helped me make good investment.					
OVR 5	I am capable of identifying the low point of the market.					
OVR 6	When I think about financial investment, I will spend more time thinking about potential gain rather than potential loss.					
OVR 7	I think I am a good or above average driver compare with the drivers I encounter on the road.					
CONS 1	I only invest in those familiar shares.					
CONS 2	I seldom invest in those unfamiliar shares.					
CONS 3	I invest mostly in well-known company with recognisable products.					
CONS 4	I believe the returns are higher for shares that I am familiar with.					
CONS 5	I believe share market in Malaysia will perform better than share market in other countries.					
CONS 6	I would invest in the share when its company announce good earnings even though I think its future earnings growth is going to be moderate.					
CONS 7	I would just continue to invest in a particular stock if I have invested a lot of money in it.					
HERD 1	I am interested in other investor's investment.					
HERD 2	There is an intentional herding in the financial market.					
HERD 3	The discussion of an investment decision with my peers and friends reduces the pressure of being successful.					
HERD 4	Herding is observable among the investors.					
HERD 5	I generally follow the trend.					
HERD 6	The most important contributing factor to the decline in the market up until today is Herd behavior, i.e. investors following the majority.					
REG 1	When I need money, I would sell my share that has earned high					

	return.					
REG 2	If the share price would only get back up to what I paid for it, I would sell it.					
REG 3	I would sell even if the share price is below the price that I paid for, when I receive bad news about the firm.					
REG 4	When I need money, I would sell my share that is losing money.					

5. Given below are the some statements regarding **risk tolerance** among individuals. After reading each statement carefully, please tick the corresponding block out of 5 given alternatives, which you feel that defines your risk tolerance.

Sr. No	STATEMENTS	1	2	3	4	5
1.	When you think of the word “risk” in a financial context, which of the following words comes to mind first?	Danger	uncertainty	opportunity	thrill	none
2	Compared to others, how do you rate your willingness to take financial risks?	Extremely high risk taker	High risk taker	Average risk taker	Low risk taker	Extremely low risk taker
3	I can tolerate sharp ups and downs in the short-term value of my investments in return for potential long-term gains	Strongly agree	agree	neutral	disagree	Strongly disagree
4	Hypothetically, I prefer an investment that has a 50 percent chance of losing five percent and a 50 percent chance of gaining 20 percent in one year, rather than an investment that will assure a 5 percent return in one year	Strongly agree	agree	neutral	disagree	Strongly disagree
5	I am comfortable holding on to an investment even though it drops sharply in value	Strongly agree	agree	neutral	disagree	Strongly disagree
6	I am willing to take the risks associated with stocks in order to earn a potential return greater than the rate of inflation.	Strongly agree	agree	neutral	disagree	Strongly disagree
7	I consider myself knowledgeable about the risks and potential returns associated with investing in stocks and other types of securities.	Strongly agree	agree	neutral	disagree	Strongly disagree
8	Investments can go up or down in value, and experts often say you should be prepared to weather a downturn. By how much could the total value of all your investments go down before you would begin to feel uncomfortable?	More than 50%	50%	33%	20%	10%
9	In recent years, how have your personal investments changed?	Always toward higher risk	Mostly toward higher risk	No changes	Mostly towards lower risk	Always toward lower risk

6. Read each statement and decide how strongly the statement applies to YOU. Score yourself 1 to 5 based on the following statement. 1 = Does not apply, 3 = Applies half the time, 5 = Always applies.

Sr. No	STATEMENTS	1	2	3	4	5
SA1	I realise immediately when I lose my temper					
SA2	I know when I am happy					
SA3	I usually recognise when I am stressed					
SA4	When I am being 'emotional' I am aware of this					
SA5	When I feel anxious I usually can account for the reason(s)					
SA6	I always know when I'm being unreasonable					
SA7	Awareness of my own emotions is very important to me at all times					
SA8	I can tell if someone has upset or annoyed me					
SA9	I can let anger 'go' quickly so that it no longer affects me					
SA10	I know what makes me happy					
HE1	I can 'reframe' bad situations quickly					
HE3	Others can rarely tell what kind of mood I am in					
HE4	I rarely 'fly off the handle' at other people					
HE5	Difficult people do not annoy me					
HE6	I can consciously alter my frame of mind or mood					
HE7	I do not let stressful situations or people affect me once I have left work					
HE8	I rarely worry about work or life in general					
HE9	I can suppress my emotions when I need to					
HE10	Others often do not know how I am feeling about things					
MO1	I am able to always motivate myself to do difficult tasks					
MO2	I am usually able to prioritise important activities at work and get on with them					
MO3	I always meet deadlines					
MO4	I never waste time					
MO5	I do not prevaricate					
MO6	I believe you should do the difficult things first					
MO7	Delayed gratification is a virtue that I hold to					
MO8	I believe in 'Action this Day'					
MO9	I can always motivate myself even when I feel low					
MO10	Motivations has been the key to my success					
EM1	I am always able to see things from the other person's viewpoint					
EM2	I am excellent at empathising with someone else's problem					
EM3	I can tell if someone is not happy with me					
EM4	I can tell if a team of people are not getting along with each other					
EM5	I can usually understand why people are being difficult towards me					
EM6	Other individuals are not 'difficult' just 'different'					
EM7	I can understand if I am being unreasonable					
EM8	I can understand why my actions sometimes offend others					
EM9	I can sometimes see things from others' point of view					
EM10	Reasons for disagreements are always clear to me					
SS1	I am an excellent listener					
SS2	I never interrupt other people's conversations					
SS3	I am good at adapting and mixing with a variety of people					
SS4	People are the most interesting thing in life for me					
SS5	I love to meet new people and get to know what makes them					
SS6	I need a variety of work colleagues to make my job interesting					
SS7	I like to ask questions to find out what it is important to people					
SS8	I see working with difficult people as simply a challenge to win them over					
SS9	I am good at reconciling differences with other people					
SS10	I generally build solid relationships with those I work with					

7. Personal details

➤ **Name of the respondent**

➤ **Gender**

a) Male

b) Female

➤ **Marital status**

a) Married

b) Unmarried

➤ **Please choose your relevant age group**

a) below or equal to 30 years

b) 31- 40 years

b) 41- 50 years

d) Above 50

➤ **Qualification**

a) Bachelors

b) Masters

c) M. Phil

d) Doctorate

Others, please specify

➤ **Income per annum**

a) Below 200000 ₹

b) 200000-500000 ₹

c) 500000-1000000 ₹

d) Above 1000000 ₹

*****THANKS FOR YOUR KIND COOPERATION*****