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# Psychological Biases which influence Investment Decisions of Investors: A Comparative Study of Rohtak and Ambala City

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**Abstract:** Decision-making can be defined as the process of choosing a particular alternative from many available alternatives. Investment Decision is usually based on different factors such as demographic and psychological factors. In this particular paper is based on psychological biases which influence investors. The study of Behavior or psychology of investors while making investment decision is known as Behavior finance. This study aims to investigate the impact of cognitive and emotional bias on the investor's financial decision. Investors are always assumed to be rational thinkers as per the traditional economic theories but the volatile market behavior has challenged the efficient market hypothesis. Behavioral finance is a newly developed approach in response to the difficulties faced by the traditional investors. Investment markets are becoming increasingly risky making the investors behave differently upon different market dynamic forces. Recent researches on individual investor's behavior have shown that people do not act rationally while making decisions, rather several factors influence their decisions. The present study is based on the psychological biases which influence individual investor's preferences of Rohtak and Ambala city. Data of 100 respondents have been collected through structured questionnaire from both cities. Chi-Square analysis tool have been employed by researcher with the help of SPSS software. The present study revealed that there is significant association between investors of Rohtak and Ambala on gender bases with respect to psychological biases.

**Keywords:** Psychological Biases, Behavioural finance, irrational, rational.

## INTRODUCTION

Investment is defined as accumulating money into asset with the expectation of capital appreciation, dividends and interest earnings. People start investing to secure their life from uncertainties. Investors have a variety of avenues to park their hard earned money. Choice or selection of investor depends upon their risk and return profile. Investment is a serious act which is conducted by people after getting knowledge about that particular act. Investment depends upon saving motives and saving derives through behavior and behavior derives from perception. It also depends upon demographic variables and psychological biases. In this particular paper researcher would discuss how psychological biases influence specifically on gender.

Before the introduction of behavioural theory everyone thought that traditional finance theory is accurate because it states that investor think rationally and make deliberate decisions, based on various estimations or using economic models. However after a number of investigations, it have been noticed that human decisions often depend on their nature intuitions, and habits, cognitive or emotional biases hidden deeply at the back of one's mind. The new discipline 'Behavioural Finance' have began after gathering enough information that confirm particular human behaviour which is contrary to traditional finance theory. Behavior finance is the study of how psychology affects financial decision making process of an investor. Since psychology explores human judgment, behavior and welfare, it can also provide important facts about how human actions differ from traditional economic.

Evidence and explanation exposed in the theory of bounded rationality explain that individuals are not always able to obtain all the relevant information, which is required to make possible decisions.(Kinoshita, Suzuki, and Shimokawa, 2013)[1] .

## BEHAVIOUR BIASES

Behavioral finance studies the psychological aspect of financial decision making and explains the irrationality of investors in investment decision making. Usually, the investor's behavior deviates from making rational or logical decisions and leans towards being influenced by various behavioral biases. These biases influence investor's rationality in investment decision making. (Kahneman and Tversky 1979)[2] developed prospect theory and examined that investor's decision making

is based on potential gains and losses rather than on final outcomes. This phenomenon occurs because of the cognitive biases that affect the judgments of these gains and losses. Various types of behavioral biases based on a heuristic theme and frame dependence bias.

- **Overconfidence Bias:** Confidence can be described as the "belief in oneself and one's abilities with full conviction" while overconfidence can be taken one step further in which overconfidence talks this self- reliant behavior to an extreme"(Ricciardi and Simon,2000)[3]. The tendency of people to overvalued their skills and predictions for success. Overconfidence causes investors to overestimate their knowledge, underestimate risks, and exaggerate their ability to control events. (Hirschey, Mark and John Nofsinger, 2010, p.224)[4].
- **Representativeness Bias:** Representativeness refers to the tendency to form a judgment based on stereotypes. Representative bias occurs when it is required to assess the probability of an object. A belonging to B. The heuristic rule says that if object A is highly representative of the class, the probability of A originating from B is judged as high, and vice versa (Tversky and Kahneman, 1974, p.1124-1131)[5]. They showed that the representative is insensitive to the prior probability of outcomes when the description is provided. Representativeness and sample size neglect, bias is where individuals are too quick to conclude that they understand developments on the bases of too little information and limited data. This heuristics leads people to judge the stock market changes as a bull or bear market without valuing the likelihood that particular sequences happen rarely.
- **Anchoring**: Anchoring is the tendency to hold on to a belief and then apply it as a subjective reference point for making future judgments. Anchoring occurs when an individual lets a specific piece of information that controls his cognitive decision-making process. People often base their decisions on the first source of information to which they are exposed and feeling difficult to adjust their point of view.
- **Familiarity Bias:** This bias occurs when investors have a preference for familiar investments despite the seemingly obvious gains from diversification. Investors display a preference for local assets with which he/she is more familiar.
- **Regret (loss) aversion:** Regret aversion describes the emotion of regret experienced after making a choice that turns out to be either a bad or inferior choice. Investors who are influenced by anticipated regret are motivated to take less risk because this lessens the potential of poor outcomes. Regret aversion can explain investor reluctance to sell "losing" investment because it gives them feedback that they have made bad decisions.
- **Conservatism Bias:** Another bias is conservatism, which arises when it is widely recognized that the available data are inadequate to support strong conclusions. In this case, it is a common error to place too little weight on the available evidence, or even to disregard it and to rely solely on prior expectations (Styaner, Peter,2007,p.14)[6]. In this way, individuals demonstrate a reluctance to search for evidence that contradicts their earlier views, because they are unwilling to change their own judgment.
- **Self- Attribution Bias**: Investors who suffer from self-attribution bias tend to spot successful outcomes to their own actions and bad outcomes to external factors. They often exhibit this bias as a means of self-protection or self-enhancement. An investor who afflicted with self-attribution bias may become overconfident, which can lead to overtrading and underperformance. To overcome self-attribution bias investor should track their mistakes and develop accountability mechanisms such as seeking constructive feedback from others. It can help investors to gain awareness about self-attribution bias.
- **Availability Bias:** The availability heuristic is a mental shortcut that relies on immediate examples that come to a given person's mind when evaluating a specific topic, concept, method or decision. The availability bias results from a cognitive shortcut.
- **Mental Accounting:** Mental accounting attempts to express the process whereby people code, classify and appraise economic outcomes. The concept was first named by Richard Thaler. It also deals with budgeting and categorization of expenditures. People budget money into mental accounts for expenses. In other words, mental accounting refers to the different values people place on money, based on subjective criteria that often have detrimental results.

## LITERATURE REVIEW

Financial products act as an investment avenue and provide the required financial security to the investors based on the risk-return profile of the financial products. In the past, traditional financial products were offered in India by banks (deposit account, credit account), Life Insurance Corporation (LIC), and postal department (recurring deposit, National Saving Certificate, Kisan Vikas Patra). However, in recent years with the advent of liberalization of financial services industry, diverse financial products have been introduced such as mutual funds, shares, derivatives, life and non-life insurance schemes (Unit Linked Investment Plans (ULIPs), pension plans, children education plans, etc.). Investment preference differs from person to person, as every individual behaves differently while investing. Investment behaviour of an individual is guided by his own set of circumstances. With an expectation of generating high returns over a

period of time and certain levels of risk, individuals invest in different financial products. The present study is an attempt to analyze the investment preferences of salaried individuals towards financial products based on various demographic factors Financial products act as an investment avenue and provide the required financial security to the investors based on the risk-return profile of the financial products. In the past, traditional financial products were offered in India by banks (deposit account, credit account), Life Insurance Corporation (LIC), and postal department (recurring deposit, National Saving Certificate, Kisan Vikas Patra). However, in recent years with the advent of liberalization of financial services industry, diverse financial products have been introduced such as mutual funds, shares, derivatives, life and non-life insurance schemes (Unit Linked Investment Plans (ULIPs), pension plans, children education plans, etc.). Investment preference differs from person to person, as every individual behaves differently while investing. Investment behaviour of an individual is guided by his own set of circumstances. With an expectation of generating high returns over a period of time and certain levels of risk, individuals invest in different financial products.

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**Himalekha Thambireddy *et al.*(2021)** proposed a paper on psychological influence investment decision. The data was collected through a structural questionnaire of 214 respondents. Further it was analyzed through SPSS and Excel. After analysis the study found that even experienced investors have to deal with biases and that some of investors do not even acknowledge the fact that their decision was affected due to the one of psychological biases.

**Raheja & Dhiman (2020)** proposed a study on emotional intelligence and behaviour biases of investors which determine their investment decisions. The main objective of research was to explore the impact of behavioural factors and investor psychology on their investment decision making. The information is gathered from financial specialists members which expertise in their field. The study found that there was positive connection between emotional intelligence and behavioural biases.

**Madaan & Singh (2019)** studied on behavioural biases in investment decision making. Response of 385 respondents was collected through questionnaire. Out of that only 243 respondents data have been taken rest was not taken due to inadequate data. The behavioural biases like overconfidence, herd behaviour anchoring and herd behaviour have been taken as a part of consideration. The study found that overconfidence and herding have significant positive impact on the investment decisions as compared with others biases like loss aversion, anchoring etc. The result conclude that the individuals have limited knowledge and more prone towards making psychological errors.

**Sahi (2017)** conducted a study on psychological biases which influence investor's financial satisfaction. The main motive of study was to found out that biases were not always bad at all times but at other times these biases can help the individuals to choose and invest best course of action from multiple possibilities and enable committing the less costly

mistakes. For this the depth interviews have been conducted from 30 investors to know their investment decision making process. The study found that over confidence bias, reliance on expert decision and self control bias have a positive significant impact with financial satisfaction levels. The study provides further insights on investor behaviour and paves a way for various possibilities for future research.

**Kumar and Goyal (2016)** studied on evidence on rationality and behaviour biases in investment decision. The purpose of this paper is to investigate the relationship between rational decision making and behavioural biases among individual investors in India. 386 respondents have been collected and it is seen that investors mainly take rational decisions while investing. In this study ANOVA, T-test, Fisher's least significant difference test have been considered for statistically calculations. It was found that male investors of India prone to overconfidence and herding bias. Further, the study found that if the investors would aware about biases they may be careful while taking decisions during investment.

**Panga and Malpani (2016)** proposed a study on impact of behavioural factors on investment decision process. The study considered behavioural biases such as anchoring, overconfidence, herd behaviour over and under reaction and loss aversion influencing investment decisions of investors. The research revealed that overconfidence, loss aversion and herd behaviour influence a lot as compared to other biases. Further the study also revealed that investment decision was influenced by these behavioural factors which differ from person to person.

**Mishra & Meltida (2015)** measured the impact of investment experience, gender, level of education on overconfidence and self-attribution bias. Data was collected from a sample of 309 investors in Mutual Funds was analyzed. The findings of study showed that overconfidence among male has been found to be more than as compared to female and it increases with the experience of investment and education. Further the study found that with the education and self – attribution increases but there is no more important association between the self-attribution bias and investor's experience. The study found that significant association between self attribution and overconfidence.

**Objectives of the study**
To analyze the psychological biases which influence the investors of Rohtak and Ambala on gender bases.

**Hypothesis of the study**
$H_{01}$: There is no significant association between psychological biases of investors of Rohtak and Ambala on gender bases.

**Research Methodology**
The research methodology depicts the flow of research process and serves as guidance for researcher to carry out the research smoothly.

**Research Design**
The research design is the set of methods and procedures used in collection and analysis the data. The present research design is descriptive by nature. It is the simplest type of research and is more specific.

**Scope of the study**
The study is mainly planed to know about psychological biases which influence investors of Rohtak specifically on gender bases.

**Area of the study**
The present study is conducted in Rohtak and Ambala the city of Haryana. These cities are one of the major populated cities and the selection of them on the bases of population census of 2011.

**Sampling size**
The sampling size is restricted to total 100 respondents further 50 have been selected from Rohtak and fifty from Ambala.

**Sampling Technique**
Convenient sampling technique is used by researcher.

**Data collection**
The present study is based on primary and secondary data. The required data were collected through structured questionnaire certain documents and websites etc.

**Data Analysis :** The collected data has been analyzed through Chi-Square analysis with the help of SPSS.

**PSYCHOLOGICAL BIASES INFLUENCE INVESTORS SPECIFIC ON GENDER BASES.**

**Table no.1.1 Cross Section Relation of Confirmation Bias with Gender**

| City of Respondents | Variables | To find out such information which confirms existing opinion and ignore opposite one | | | | | |
|---|---|---|---|---|---|---|---|
| | Gender | Strongly Agree | Agree | Neutral | Disagree | Strongly Disagree | Total |
| **Rohtak** | Male | 22(78.6) | 5(17.9) | 0(0.0) | 1(3.6) | 0(0.0) | 28(100.0) |
| | Female | 16(72.7) | 4(18.2) | 2(4.0) | 0(0.0) | 0(0.0) | 22(100.0) |
| | Total | 38(76.0) | 9(18.0) | 2(4.0) | 1(2.0) | 0(0.0) | 50(100.0) |
| **Ambala** | Male | 9(25.7) | 21(60.0) | 1(2.9) | 4(11.4) | 0(0.0) | 35(100.0) |
| | Female | 4(26.7) | 9(60.0) | 1(6.7) | 1(6.7) | 0(0.0) | 15(100.0) |
| | Total | 13(26.0) | 30(60.0) | 2(4.0) | 5(10.0) | 0(0.0) | 50(100.0) |

Source: Computed Data from Primary Data
Note: Values in Parentheses are in Percentage

In table no. 1.1 has been depicted that investors of Rohtak majorly influenced with confirmation bias behaviour and even they are around 22(78.6) percent males and 16(72.7) percent of females were found to be strongly agree. On the other majority of males 21(60.0) percent and 9(60.0) percent of female respondents of Ambala also suffered with confirmation bias behaviour.

**Table no.1.2 Cross Section Relation of Representativeness Bias with Gender**

| City of Respondents | Variables | Depend on one type of information and past references while making investment decisions. | | | | | |
|---|---|---|---|---|---|---|---|
| | Gender | Strongly Agree | Agree | Neutral | Disagree | Strongly Disagree | Total |
| **Rohtak** | Male | 7(25.0) | 17(60.7) | 4(14.3) | 0(0.0) | 0(0.0) | 28(100.0) |
| | Female | 7(31.8) | 12(54.5) | 3(13.6) | 0(0.0) | 0(0.0) | 22(100.0) |
| | Total | 14(28.0) | 29(58.0) | 7(14.0) | 1(2.0) | 0(0.0) | 50(100.0) |
| **Ambala** | Male | 1(2.9) | 9(25.7) | 5(14.3) | 17(48.6) | 3(8.6) | 35(100.0) |
| | Female | 3(20.0) | 5(33.3) | 1(6.7) | 6(40.0) | 0(0.0) | 15(100.0) |
| | Total | 4(8.0) | 14(28.0) | 6(12.0) | 23(46.0) | 3(6.0) | 50(100.0) |

Source: Computed Data from Primary Data
Note: Values in Parentheses are in Percentage

In table no. 1.2 has been described that investors of Rohtak are also influenced with representative bias behaviour and even majority of respondents which are agree the statement around 17(60.7) percent males and 12(54.5) percent of females were found to be agree that representative bias behaviour influence their investment decisions. On the other majority of males 17(48.6) percent and 6(40.0) percent of respondents of Ambala disagree with this statement that they would not like to relay on past and references while investing.

**Table no.1.3 Cross Section Relation of Familiarity Bias with Gender**

| City of Respondents | Variables | Worry to diversify between well known security to less known security | | | | | |
|---|---|---|---|---|---|---|---|
| | Gender | Strongly Agree | Agree | Neutral | Disagree | Strongly Disagree | Total |
| **Rohtak** | Male | 6(21.4) | 17(60.7) | 4(14.3) | 1(3.6) | 0(0.0) | 28(100.0) |
| | Female | 5(22.7) | 10(45.5) | 7(31.8) | 0(0.0) | 0(0.0) | 22(100.0) |
| | Total | 11(22.0) | 27(54.0) | 11(22.0) | 1(2.0) | 0(0.0) | 50(100.0) |
| **Ambala** | Male | 3(8.6) | 26(74.3) | 2(5.7) | 4(11.4) | 0(0.0) | 35(100.0) |
| | Female | 1(6.7) | 11(73.3) | 0(0.0) | 2(13.3) | 1(6.7) | 15(100.0) |
| | Total | 4(8.0) | 37(74.0) | 2(4.0) | 6(12.0) | 1(2.0) | 50(100.0) |

Source: Computed Data from Primary Data
Note: Values in Parentheses are in Percentage

In table no. 1.3 has been portrayed that investors of Rohtak are also influenced with familiarity bias behaviour and even majority of respondents which are agree the statement around 17(60.7) percent males and 10(45.5) percent of females were found to be agree with the statement they feel worried to invest less known security. On the other majority of males 26(74.3) percent and 11(73.3) percent of respondents of Ambala agree with this statement that they also feel worry while diversify well known to less known security.

**Table no.1.4 Cross Section Relation of Overconfidence Bias with Gender**

| **City of Respondents** | **Variables** | **Rate own performance as higher than actually it is** | | | | | |
|---|---|---|---|---|---|---|---|
| | Gender | Strongly Agree | Agree | Neutral | Disagree | Strongly Disagree | Total |
| **Rohtak** | Male | 5(17.9) | 8(28.6) | 13(46.4) | 2(7.1) | 0(0.0) | 28(100.0) |
| | Female | 0(0.0) | 13(59.1) | 8(36.4) | 1(4.5) | 0(0.0) | 22(100.0) |
| | Total | 5(10.0) | 21(42.0) | 21(42.0) | 3(6.0) | 0(0.0) | 50(100.0) |
| **Ambala** | Male | 1(2.9) | 24(68.6) | 6(17.1) | 1(2.9) | 0(0.0) | 35(100.0) |
| | Female | 2(13.3) | 14(66.7) | 2(13.3) | 0(0.0) | 0(0.0) | 15(100.0) |
| | Total | 3(6.0) | 34(68.0) | 8(16.0) | 1(2.0) | 0(0.0) | 50(100.0) |

Source: Computed Data from Primary Data
Note: Values in Parentheses are in Percentage

In table no. 1.4 has been revealed that investors of Rohtak are 8(28.6) percent and 13(59.1) percent found to rate their performance as higher than actually it is. But along with it is also found that 13(59.1) percent and 8(36.4) percent that equal number of respondents also considered on neutral mode. On the other majority of males 24(68.6) percent and 14(66.7) percent of respondents of Ambala rate their own performance high than actually it is.

**Table no.1.5 Cross Section Relation of illusionary Superiority Bias with Gender**

| **City of Respondents** | **Variables** | **Thinking and controlling over factors which affect your performance** | | | | | |
|---|---|---|---|---|---|---|---|
| | Gender | Strongly Agree | Agree | Neutral | Disagree | Strongly Disagree | Total |
| **Rohtak** | Male | 3(10.7) | 12(42.9) | 7(25.0) | 6(21.4) | 0(0.0) | 28(100.0) |
| | Female | 1(4.5) | 5(22.7) | 13(59.1) | 3(13.6) | 0(0.0) | 22(100.0) |
| | Total | 4(8.0) | 17(34.4) | 20(40.0) | 9(18.0) | 0(0.0) | 50(100.0) |
| **Ambala** | Male | 2(5.7) | 23(65.7) | 6(17.1) | 2(5.7) | 2(5.7) | 35(100.0) |
| | Female | 2(13.3) | 8(53.3) | 3(20.0) | 1(6.7) | 1(6.7) | 15(100.0) |
| | Total | 4(8.0) | 31(62.0) | 9(18.0) | 3(6.0) | 3(6.0) | 50(100.0) |

Source: Computed Data from Primary Data
Note: Values in Parentheses are in Percentage

In table no. 1.5 has been revealed that investors of Rohtak are 7(25.0) percent and 13(59.1) percent found that they has neutral response on this statement of illusionary superiority bias behaviour. On the contrast the respondents of Ambala 23(65.7) percent of males and 8(53.3) percent of female found to be perceived to control over factors which affect their performance.

In table no. 1.6 has been revealed that investors of Rohtak are 15(53.6) percent of males and 9(40.9) percent of females found that they has neutral response on this statement of regret aversion bias behaviour. On the contrast the respondents of

Ambala 26(74.3) percent of males and 10(66.7) percent of females feeling of fear that decision which have been taken by them have proved to be wrong in near future.

**Table no. 1.6: Cross Section Relation of Regret Aversion Bias with Gender**

| City of Respondents | Variables | Feeling of fear that decision will turn out to be wrong in near future | | | | | |
|---|---|---|---|---|---|---|---|
| | Gender | Strongly Agree | Agree | Neutral | Disagree | Strongly Disagree | Total |
| **Rohtak** | Male | 1(36.6) | 5(17.9) | 15(53.6) | 7(25.0) | 0(0.0) | 28(100.0) |
| | Female | 1(4.5) | 10(45.5) | 9(40.9) | 2(9.1) | 0(0.0) | 22(100.0) |
| | Total | 2(4.0) | 15(18.0) | 24(48.0) | 9(18.0) | 0(0.0) | 50(100.0) |
| **Ambala** | Male | 1(2.9) | 26(74.3) | 3(8.6) | 3(8.6) | 2(5.7) | 35(100.0) |
| | Female | 1(6.7) | 10(66.7) | 3(20.0) | 1(6.7) | 0(0.0) | 15(100.0) |
| | Total | 2(4.0) | 36(72.0) | 6(12.0) | 4(8.0) | 2(4.0) | 50(100.0) |

Source: Computed Data from Primary Data
Note: Values in Parentheses are in Percentage

**Table no. 1.7 Cross Section Relation of Herding Bias with Gender**

| City of Respondents | Variables | Follow and copy what most others investors are doing | | | | | |
|---|---|---|---|---|---|---|---|
| | Gender | Strongly Agree | Agree | Neutral | Disagree | Strongly Disagree | Total |
| **Rohtak** | Male | 2(7.1) | 7(25.0) | 8(28.6) | 11(39.3) | 0(0.0) | 28(100.0) |
| | Female | 3(13.6) | 3(13.6) | 4(18.2) | 12(54.5) | 0(0.0) | 22(100.0) |
| | Total | 5(10.0) | 10(20.0) | 12(24.0) | 23(46.0) | 0(0.0) | 50(100.0) |
| **Ambala** | Male | 4(11.4) | 6(17.1) | 5(14.3) | 18(51.4) | 2(5.7) | 35(100.0) |
| | Female | 2(13.3) | 4(26.4) | 2(13.3) | 6(40.0) | 1(6.7) | 15(100.0) |
| | Total | 6(12.0) | 10(20.0) | 7(14.0) | 24(48.0) | 3(6.0) | 50(100.0) |

Source: Computed Data from Primary Data
Note: Values in Parentheses are in Percentage

In table no. 1.7 has been revealed that investors of Rohtak are 11(39.3) percent of males and 12(54.5) percent of females found to be disagree with statement that they follow other investors while investing. On the other the respondents of Ambala 18(51.4) percent of males and 6(40.0) percent of females found to be disagree with the statement that they follow other investors while investing.

**Table no. 1.8 Cross Section Relation of illogical thinking Bias with Gender**

| City of Respondents | Variables | Largely influence by emotions and instinct rather than by your own independence analysis | | | | | |
|---|---|---|---|---|---|---|---|
| | Gender | Strongly Agree | Agree | Neutral | Disagree | Strongly Disagree | Total |
| **Rohtak** | Male | 2(7.1) | 7(25.0) | 15(53.6) | 4(14.3) | 0(0.0) | 28(100.0) |
| | Female | 1(4.5) | 3(13.6) | 14(63.6) | 4(18.2) | 0(0.0) | 22(100.0) |
| | Total | 3(6.0) | 10(20.0) | 92(58.0) | 8(16.0) | 0(0.0) | 50(100.0) |
| **Ambala** | Male | 3(8.6) | 25(71.4) | 3(8.6) | 0(0.0) | 4(11.4) | 35(100.0) |
| | Female | 1(6.7) | 4(26.7) | 3(20.0) | 5(33.3) | 2(13.3) | 15(100.0) |
| | Total | 4(8.0) | 29(58.0) | 6(12.0) | 5(10.0) | 6(12.0) | 50(100.0) |

Source: Computed Data from Primary Data
Note: Values in Parentheses are in Percentage

In table no. 1.8 has been revealed that investors of Rohtak are 15(53.6) percent of males and 14(63.6) percent of females found to be neither agree nor disagree with statement that they largely influence emotions rather than their own independent analysis. On the other the respondents of Ambala 25(71.4) percent of males and 4(26.7) percent of females found to be agree with the statement that emotions influenced them a lot while investing.

**Table no. 1.9 Cross Section Relation of Home Bias with Gender**

| **City of Respondents** | **Variables** | **Invest in those stocks and bonds which belongs to home country** | | | | | |
|---|---|---|---|---|---|---|---|
| | Gender | Strongly Agree | Agree | Neutral | Disagree | Strongly Disagree | Total |
| **Rohtak** | Male | 3(10.7) | 13(46.4) | 10(35.7) | 2(7.1) | 0(0.0) | 28(100.0) |
| | Female | 3(13.6) | 9(40.9) | 8(36.4) | 2(9.1) | 0(0.0) | 22(100.0) |
| | Total | 6(12.0) | 22(44.0) | 18(36.0) | 4(8.0) | 0(0.0) | 50(100.0) |
| **Ambala** | Male | 2(5.7) | 25(71.4) | 5(14.3) | 2(5.7) | 1(2.9) | 35(100.0) |
| | Female | 3(20.0) | 7(46.7) | 0(0.0) | 3(20.0) | 2(13.3) | 15(100.0) |
| | Total | 5(10.0) | 32(64.0) | 5(10.0) | 5(10.5) | 3(6.0) | 50(100.0) |

Source: Computed Data from Primary Data
Note: Values in Parentheses are in Percentage

In table no. 1.9 has been revealed that investors of Rohtak are 13(46.4) percent of males and 9(40.9) percent of females found to agree with statement that they would like to invest in those stocks or securities which belongs to home country. On the other the respondents of Ambala 25(71.4) percent of males and 7(46.7) percent of females found to be agree with the statement that they would like to invest only those securities which belongs to home country.

**Table no. 1.10 Cross Section Relation of Emotional Bias with Gender**

| **City of Respondents** | **Variables** | **Making decision based on feelings not on facts** | | | | | |
|---|---|---|---|---|---|---|---|
| | Gender | Strongly Agree | Agree | Neutral | Disagree | Strongly Disagree | Total |
| **Rohtak** | Male | 9(32.1) | 12(42.9) | 6(21.4) | 1(3.6) | 0(0.0) | 28(100.0) |
| | Female | 1 (4.5) | 11 (50.0) | 9(40.9) | 1(4.5) | 0(0.0) | 22(100.0) |
| | Total | 10(20.0) | 23(46.0) | 15(30.0) | 2(4.0) | 0(0.0) | 50(100.0) |
| **Ambala** | Male | 6(17.1) | 3(8.6) | 2(5.7) | 22(62.9) | 2(5.7) | 35(100.0) |
| | Female | 1(6.7) | 5(33.3) | 0(0.0) | 4(26.7) | 5(33.3) | 15(100.0) |
| | Total | 7(14.0) | 8(16.0) | 2(4.0) | 26(52.0) | 7(14.0) | 50(100.0) |

Source: Computed Data from Primary Data
Note: Values in Parentheses are in Percentage

In table no. 1.10 has been revealed that investors of Rohtak are 12(42.9) percent of males and 11(50.0) percent of females found to be agree with statement that they frame their decisions on the bases of feelings not on facts. . On the other the respondents of Ambala 22(62.9) percent of males and 4(26.7) percent of females found to be disagree with the statement that feelings influenced them a lot while investing.

**Table no. 1.11: Chi – Square of Psychological Biases**

| **City of Respondents** | **Chi-Square Value** | **df** | **Table Value** | **Sig.** | **Remark** |
|---|---|---|---|---|---|
| **Confirmation Bias** | | | | | |
| Rohtak | 3.387 | 3 | 7.815 | .336 | Accepted |
| Ambala | .623 | 3 | 7.815 | .891 | Accepted |
| **Representative Bias** | | | | | |
| Rohtak | .289 | 2 | 5.991 | .865 | Accepted |
| Ambala | 6.036 | 4 | 9.488 | 1.96 | Accepted |
| **Familiarity Bias** | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| Rohtak | 3.048 | 3 | 7.815 | .384 | Accepted |
| Ambala | 3.271 | 4 | 9.488 | .514 | Accepted |
| **Overconfidence Bias** | | | | | |
| Rohtak | 7.096 | 3 | 7.815 | .069 | Rejected |
| Ambala | 2.498 | 4 | 9.488 | .645 | Accepted |
| **Illusionary Superiority** | | | | | |
| Rohtak | 6.049 | 3 | 7.815 | .109 | Accepted |
| Ambala | 1.101 | 4 | 9.488 | .894 | Accepted |
| **Regret Aversion Bias** | | | | | |
| Rohtak | 5.301 | 3 | 7.815 | .151 | Accepted |
| Ambala | 2.513 | 4 | 9.488 | .642 | Accepted |
| **Herding Behaviour Bias** | | | | | |
| Rohtak | 2.493 | 3 | 7.815 | .477 | Accepted |
| Ambala | .816 | 4 | 9.488 | .936 | Accepted |
| **Illogical Thinking** | | | | | |
| Rohtak | 1.266 | 3 | 7.815 | .737 | Accepted |
| Ambala | 16.516 | 4 | 9.488 | .002 | Rejected |
| **Home Bias** | | | | | |
| Rohtak | .233 | 3 | 7.815 | .972 | Accepted |
| Ambala | 9.355 | 4 | 9.488 | .053 | Accepted |
| **Emotional Bias** | | | | | |
| Rohtak | 6.416 | 4 | 9.488 | .093 | Accepted |
| Ambala | 14.070 | 3 | 7.815 | .007 | Rejected |

Source: Computed Data from Primary Data
Note: Values in Parentheses are in Percentage

Table no. 1.11 reveled that on the bases of confirmation, representative, familiarity, illusionary superiority, regret aversion bias, herding behaviour bias and home bias majority of accepted response depicts that there is significant association between the investors of Rohtak and Ambala on gender bases. So the framed hypothesis is accepted. In contrast overconfidence, illogical thinking and emotional bias have no significant association between investors of Rohtak and Ambala on gender bases.

## CONCLUSION

In nutshell, it has been found that confirmation, representative, familiarity, and illusionary superiority, regret aversion bias, herding behaviour bias and home bias, illogical and irrational behavior of investors have been attempted to be explained by author of the paper. Further the research found that there is significant association between psychological biases from which an investors have encountered while making decisions. These anomalies turned rational investor into irrational investors. A little bit efforts by investors can help them to become rational investors such as constant review of investment proposals, consult with expertise during investment.

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