CHAPTER-2 REVIEW OF LITERATURE

This chapter provides a review of literature on individual investor behaviour and behavioural biases. First of all research on behavioural biases has been discussed. Various studies on factors affecting individual investor behaviour have also been explored. At the end, the research gaps and objectives of the study have been highlighted.

2.1 STUDIES ON BEHAVIOURAL BIASES

The section presents the literature on various behavioural biases. These biases distort the behaviour of investors which in turn causes them to behave in irrational manner.

2.1.1 Anchoring Bias

Tversky and Kahneman (1974) define anchoring bias as the tendency of people to make estimates by starting with an initial value or anchor which is adjusted to get the final answer. According to the researchers, the value estimates are biased towards the starting point or the initial value. So, anchoring has been defined as basing decisions or estimates on an initial anchor which is typically a value known to them.

Researchers have found evidence that anchoring bias influences financial and other decisions of individuals. Degeorge, Patel, and Zeckhauser (1999) found that executives use a specific level of EPS as an anchor and they try to exceed the threshold EPS. George and Hwang (2004) documented that when stock prices are at or near their peak historical prices, investors are not willing to bid a price higher than the historical peak price. This indicates that investors use historical high as an anchor. Cen, Hilary, and Wei (2013) found that firms who have high industry median-adjusted forecasted earnings per share tend to earn higher stock returns compared to firms who have low industry median-adjusted forecasted earnings per share. The researchers termed this phenomenon as cross sectional anchoring effect.

Kaustia, Alho, and Puttonen (2008) observed Scandinavian stock market and found prominent anchoring effects in long-term future stock return estimates in the market. Campbell and Sharpe (2009) found the presence of anchoring bias in predictions of macroeconomic variables such as the consumer price index or non-farm payroll employment by professionals. The results also indicated that such anchoring effects
lead to significant forecast errors. Baker, Pan, and Wurgler (2009) documented that corporate acquisitions are also affected by anchoring bias.

Black and Diaz (1996); Diaz (2009) documented that potential homebuyers use the property’s asking price as an anchor to estimate its value. Moreover, the expert estimates affect the real estate appraisal. In these studies, the participants were provided with different asking prices and it was found that investors used these asking prices as reference points or anchors to form an opinion about the value of the property without considering their relevance.

Oberlechner (2004) documented that traders not only base their trading approach on previous trading experience but they are not likely to change their approach despite experiencing losses in previous trading strategy.

Some researchers have tried to correlate anchoring with different personality types. Eroglu and Croxton (2010) found that people who are highly agreeable and conscientious are more likely to be affected by anchoring bias whereas those who are high in extroversion are less likely to be affected by it.

2.1.2 Availability Bias
Availability Bias is a tendency of individuals to estimate the probability of an event based on how easily they can recall instances of occurrences related to that event (Tversky & Kahneman, 1974).

Nofsinger and Varma (2013) analyzed the effect of availability bias on repurchase behaviour of individual investors in the United States and found that a form of availability bias known as the recency effect plays a significant role in repurchase behaviour of investors. Recency effect is the tendency of people to estimate the likelihood of an event based on their recent experience. The influence of availability bias remains strong even during circumstances when informed trading can be done.

Lee, Obrien, and Sivaramakrishnan (2005) find that analysts’ forecasts about long-term EPS growth of shares tend to be relatively optimistic when the economy is expanding while when the economy is contracting, the same forecasts tend to be relatively pessimistic. These findings can be explained with the help of recency effect of availability bias.
Another aspect of availability bias which is closely related to the recency effect is called priming. Priming is basically an unconscious remembering process in which any external stimulus or event triggers the availability of specific informative category. Priming has been found to influence information processing as well as decision making. Baron and Byrne (1997); Gilad and Kliger (2008) found that priming manipulations affects investors' risk attitudes and as a result end up affecting their investment decisions.

Another aspect affecting availability is vividness or ‘imagery’. Keller, Siegrist, and Gutscher (2005) explored vividness aspect of availability bias and found that the participants who were shown photographs of houses in flood area estimated the flood risk to be higher than those participants who were shown normal photographs.

Frieder (2003) found that following unexpected large positive earnings, stock traders tend to buy while following unexpected large negative earnings, stock traders tend to sell. The researchers proposed that this tendency of traders can be explained by availability bias and that the magnitude of the effect of availability bias increases during earnings surprises.

Availability bias has been observed by many researchers in analysts’ recommendations. Jegadeesh and Kim (2006) found that analyst recommendations in the G7 countries cause stock prices to react significantly. Daniel, Hirshleifer, and Teoh (2002) found that when analysts and investors examine a value indicator, they tend to overweigh it due to the influence of availability bias.

Mikhail, Walther, and Wills (2007) found that large and small traders react to analyst recommendations but large traders are observed to trade more following analyst recommendations. Ganzach (2001) found that analysts find stocks to have high return and low risk if those stocks are generally perceived to be good stocks while those stocks which are generally perceived to be bad stocks are judged to have low return and high risk by the analysts. The researcher proposed that this is caused by availability bias.

Kahneman and Tversky (1982) discuss the mental operation of ‘construction of examples or scenarios’ which is involved in availability bias. The authors talk about a mental heuristic called the simulation heuristic which individuals use to make
predictions, to do counterfactual reasoning and evaluate the probability of an event. Many consider this heuristic to be a form of availability bias.

Jarell and Peltzman (1985) documented that drug and auto recalls negatively affect the company’s stock prices and lead to adverse effects even for the competitors. The researchers proposed that since these recent recalls make the risk of buying a defective product of the same kind more available, it prevents consumers from buying these products and negatively affects the whole industry.

2.1.3 Disposition Effect
Disposition effect is the tendency of investors to sell stocks or other assets that have increased in value and to hold on to stocks or other assets that have lost value. Disposition effect is based on the prospect theory developed by Kahneman and Tversky (1979). Two aspects of prospect theory can explain disposition effect. First aspect is that people evaluate gains and losses relative to a reference point which is usually the purchase price of the asset. And the second aspect is that losses are more painful to people compared to the pleasure derived from a gain of a similar magnitude. This causes people to become risk averse for gains and risk seeking for losses.

Many studies have been done to document the presence of this bias. Odean (1998) found that investors preferred to sell winning stocks by using purchase price as the reference point. The researcher found that investors sell winning stocks too early and hold on to losing stocks for too long. Kaustia (2004) found, after analyzing the performance of Initial Public Offerings in US, that the trading volume of stocks rises when these stocks trade above the offer price.

In an experimental study Weber and Camerer (1998) found that participants sold less when stock prices declined and when the stock price was below the purchase price. The researchers also observed that participants sold more when stock prices increased and then stock price was above the purchase price. Chen, Kim, Nofsinger, and Rui (2007) found that investors in Chinese stock market are more likely to sell winning stocks compared to losing stocks. This indicated that Chinese investors are influence by disposition effect.
Zuchel (2001) attempted to provide an explanation for disposition effect. The author proposed that individuals are averse to sell losing stocks due to the need to justify or rationalize their decisions. People are reluctant to admit that their previous decisions were wrong and that is why they become susceptible to disposition effect.

Oehler, Heilmann, Lager, and Oberlander (2002) conducted an experimental study in 36 stock markets with 490 participants and found that participants displayed a strong tendency to sell winners rather than losers. Furthermore, it was observed that the participants who exhibited disposition effect used purchase price as a reference point.

Grinblatt and Keloharju (2000) analyzed the trading transactions of individual and institutional investors in Finnish stock market and found that investors are reluctant to realize losses. The researchers also found that in the short run, domestic investors tend to sell stocks that have appreciated in value.

Zur and Venezia (2001) compared the behaviour of investors whose accounts were being managed by professionals to the behaviour of investors who made independent investment decisions and found that both professional investors and investors who managed their accounts independently exhibit disposition effect. The researchers found the disposition effect to be stronger for investors who managed their accounts independently.

Dhar and Zhu (2006) propose that the effect of disposition effect on individuals depends on certain underlying characteristics of individual investors. The researchers documented that individuals who are wealthy and have professional occupation are affected less by disposition effect and that trading experience reduces the effect of disposition effect. Feng and Seasholes (2005) found that a combination of sophistication and trading experience eliminates the reluctance of investors to realize losses. However, the researchers also found evidence that sophistication and trading experience eliminates the tendency to sell winning stocks to realize gains by 37 percent but fails to eliminate this tendency completely.

Summers and Duxbury (2007) carried out an experimental study and found that if investors do not choose which stocks to buy in their portfolios, they exhibit no disposition effect. The researchers suggest that investors do not tend to sell winners if
they do not feel responsible for their decisions and the gains and losses associated with that decision. According to the researchers, this suggests that the emotion of regret which is usually caused by buying a bad stock, and the emotion of pride which is caused by buying a good stock, contribute to the disposition effect.

Lin (2011) found evidence of significant level of disposition effect in Taiwanese and Chinese stock markets during the Asian Financial crisis of 1997. During the global financial crisis of 2008, the researcher found disposition effect only in Chinese stock market. The researcher also found the disposition effect to be significant when stock prices are on a rise but not significant when stock prices are going down during both the financial crises. Moreover, the researchers found the effect to be equal for type A share and type B shares.

Weber and Camerer (1998) carried out an experimental study and found that the participants tend to sell winning stocks and held on to losing stocks in each period which had fluctuating stock prices. The researchers also observed that the disposition effect was significantly reduced when stocks were sold automatically after each period.

2.1.4 Herd Behaviour
Herd behaviour is the tendency of people to imitate the observed actions of a crowd. It is usually believed that price fluctuations in stock prices are caused due to new information or changes in fundamentals of the economy or the company. However, scholars have observed that these price fluctuations are not always related to changes in fundamental economic variables (Shiller, 1989) or new information (Cutler, Poterba, & Summers, 1989). This may suggest that volatility in the stock market may be related to people irrationally following actions of the crowd out of greed or fear. Cont and Bouchaud (2000) carried out a study on the implication of herding and found significant influence of herding on investor behaviour and price fluctuations in the stock market.

Scharfstein and Stein (1990) analyzed the factors that may cause herding in the investment decisions made by professional money managers. The researchers categorized managers as ‘smart managers’ and ‘biased managers’ and documented that ‘reputational concern’ and ‘sharing the blame’ were some of the factors that
caused managers to engage in herding behaviour. Devenow and Welch (1996) carried out a similar study and found that professional money managers engage in herding intentionally and follow the actions of a benchmark manager who is followed by the majority of people. The researchers proposed that money managers do this to protect their reputation.

Christie and Huang (1995) found that in order to reduce the anxiety that investors experience during market stress when the uncertainty is higher, they look for conformity and certainty. This causes them to become doubtful of their own beliefs and exhibit a tendency to follow the herd.

Chang, Cheng, and Khorana (2000); Hwang and Salmon (2001) documented that investors exhibit herding not only during periods of market stress but also during normal conditions. The researchers go on to say that the herding effect becomes more prominent during the periods of market stress.

Bikhchandani and Sharma (2001) found that investors tend to learn from the actions of their predecessors and follow in their footsteps while ignoring private information. The researchers propose that informational learning and information cascade cause investors to engage in herd behavior.

Nofsinger and Sias (1999) defined herding as a phenomenon which occurs when investors trade in the same direction over a period of time. The researchers used positive feedback trading as a measure of herding and observed that institutional investors use positive feedback trading frequently which is an indication of herd behaviour.

Hwang and Salmon (2001) developed a measure called H-statistic to measure the intensity of herding. The researchers documented that herding exists even when the market conditions are normal.

2.1.5 Limited Attention Bias
Limited attention bias is the tendency of investors to make investment decisions based on all the events and information which caught their attention.
Barber and Odean (2008) found that investors tend to consider purchasing those stocks that have recently caught their attention. According to the researchers, attention grabbing stocks tend to be the stocks that report high trading volume and high returns. Seasholes and Wu (2007) found that smart traders tend to earn profits due to attention based buying of unsophisticated investors.

Corwin and Coughenour (2008) found that analysts tend to pay more attention towards stocks whose trading volume has increased. As a result, they pay less attention to other stocks in their portfolio. This leads to increase in transaction costs and less frequent price movements in stocks which are not paid attention to.

Dellavigna and Pollet (2009) found that when earnings of firms are announced on Friday, investors show a 15% lower immediate response and a 70% greater delayed response compared to when the earnings are announced on other weekdays. Moreover, the researchers also found that trading volume is 8% lower around Friday earning announcement and that this ‘post-earnings announcement drift’ is caused due to the underreaction of investors to information. According to the researchers, limited attention of investors is the cause behind this underreaction and delayed response.

Loh (2008) found that stocks that garner low investor attention react less to stock recommendations compared to stocks that garner high investor attention three days around these recommendations. The researcher goes on to say that this post recommendation drift is twice as strong for low attention stocks compared to high attention stocks. The researcher proposes that limited attention of investors causes this post recommendation drift.

Hou, Peng, and Xiong (2009) found that underreaction to earning related news in terms of fluctuation in stock price gets reduced with investor attention. However, if there is a price continuation caused by the overreaction of investors, it gets stronger with attention.

Seasholes and Wu (2007) found that active individual investors buy stocks previously not owned by them due to attention grabbing events. The researchers also go on to say that all attention grabbing events do not cause investors to behave in a predictable
manner. Attention grabbing events that help the investors narrow down the set of stocks under considerations cause attention based stock purchase.

### 2.1.6 Mental Accounting

Thaler (1999) defined mental accounting as a set of cognitive operations which are used by people to organize, evaluate and keep track of their financial activities. The researcher concluded that mental accounting influences people's choices.

Lim (2006) found that investors tend to bundle the sale of losing stocks rather than that of winning stocks due to mental accounting. Thaler (1985) found that investors exhibit a tendency to club their losses and segregate their gains. The researcher goes on to say that mental accounting is likely to be an influencing factor in trading decisions.

Thaler (1999) provides explanation behind the preference of investors for cash dividends rather than capital gains even though both have similar tax treatments. This could be due to the fact that investors keep dividend payment in a separate mental account called ‘current income’ and they keep capital gains in a separate mental account.

Shefrin and Statman (2000) propose that investors separate their assets into different mental accounts based on their investment objectives such as retirement account or improvement in the living standard account or get rich account. The investors may exhibit risk seeking behaviour for get rich account and they may exhibit risk averse behaviour for retirement account. The researchers developed ‘Behavioural Portfolio Theory’ which was based on this type of mental accounting. Das, Markowitz, Scheid, and Statman (2010) developed a theory of portfolio optimization with the help of mental accounting.

Shefrin and Thaler (1988) propose that investors separate their wealth into different mental accounts such as future income, current assets and spendable income. The researchers say that placing money in different accounts may result in different outcomes. If the investors want to withdraw from current income account today, they will make different decisions regarding spending or saving decisions.
Thaler (1999) proposed a policy on mental accounting which will create different mental accounts for managing debt, cash flow and savings. Mental accounting has an aspect called narrow framing which causes people to evaluate the performance of their portfolio too frequently. Kahneman and Lovallo (1993) propose that the evaluation of each and every risky asset prevents the reduction of risk which can be obtained by combining these assets.

Thaler (1985; 1999) documented that mental accounting causes investors to consider their assets separately rather than jointly. Due to the effect of this bias, investors are unable to see interactions between different asset classes.

Langer and Weber (2001) documented that when it comes to evaluating a portfolio or a sequence of lotteries by individuals, there is a difference between segregate evaluation and aggregate evaluation. These differences exist due to mental accounting.

Haigh and List (2005) compared the behaviour of students and professionals to investigate the extent of myopic loss aversion which is a combination of two behavioural biases, namely mental accounting and loss aversion. The researchers wanted to see whether myopic loss aversion is less prominent in the behaviour of professionals compared to that of students. The researchers found that myopic loss aversion was present in the behaviour of professionals to a greater extent than students.

Gneezy and Potters (1997) found that individuals tend to become more risk averse if they evaluate the returns of their investments more frequently. The researchers suggested that this happens due to a tendency of investors called ‘myopic loss aversion’ which causes them to be more sensitive to losses than to gains and therefore more risk averse.

Thaler, Tversky, Kahneman, and Schwartz (1997) defined myopic loss aversion as a combination of the tendency of investors to evaluate outcomes very frequently and the tendency of investors to be more sensitive to losses compared to gains. In an experimental study, the researchers found evidence which suggested that investors who are influenced by myopic loss aversion would be willing to take more risk if they
evaluate their portfolio less frequently. Gneezy, Kapteyn, and Potters (2003) found that more feedback about the performance of their portfolio and higher flexibility to change the investments in their portfolio causes individuals to take less risk.

2.1.7 Naive Reinforcement Learning

Naïve reinforcement learning is a tendency of people to repeat past actions that resulted in pleasure and to avoid past actions that resulted in pain. Strahilevitz, Odean, and Barber (2011) found that investors show a tendency to repurchase stocks they previously sold for a gain rather than repurchasing stocks they previously sold for a loss. According to the researchers, investors do this because repurchasing a stock which they previously sold for a gain at a lower price makes them think that they are better off.

Choi, Laibson, Madrian, and Metrick (2009) found that investors whose experience of investing in 401(k) has been rewarding tend to increase their savings in 401(k) compared to investors whose experience has been less rewarding. According to the researchers, this pattern is consistent with naïve reinforcement learning which causes people to expect success from assets in which they have personally experienced success in the past.

Kaustia and Knupfer (2008) found that investors in Finland who have experienced good IPO returns in the past tend to subscribe to IPOs in future as well. Chiang, Hirshleifer, Qian, and Sherman (2011) found that investors who earn high returns in previous IPO auctions are more likely to participate in future auctions. The researchers also found that the return of investors tends to decrease as they participate in more and more auctions; investors with more experience bid more aggressively and as they get more and more experienced, their selection ability deteriorates. The researchers didn’t find any significant evidence of this behaviour in institutional investors.

Jegadeesh and Titman (1993) propose that the stocks which individual investors sell for a gain tend to outperform the losing stocks which they keep. The researchers show that stocks which have experienced strong returns in the recent past go on to experience strong returns in the future. Weber and Welfens (2011) carried out laboratory experiments and found that participants repurchased stocks which they had
previously sold for a gain if the price of those stocks had dropped since being sold and that this behaviour can be explained by naïve reinforcement learning.

### 2.1.8 Overconfidence Bias

Overconfidence bias is the tendency of investors to have too much confidence in their abilities and skills. Overconfidence causes investors to have the illusion that everything is under their control.

Barber and Odean (2001) found that men are more overconfident than women and therefore trade more than women. This causes men to earn lower returns compared to women. The researchers found that too much trading reduces the net returns of men by 2.65 percentage and that of women by 1.72 percentage. These differences were found to be prominent among single men and single women. Mittal and Vyaas (2011) had similar findings for their study. The researchers found that men engage in more risk taking as they are more overconfident than women. Women invest majority of their savings in safe or low risk-low return investments. The researchers also suggested that there is no difference in information processing and accumulation styles of women and men.

Statman, Thorley, and Vorkink (2006) found that investors are overconfident about their valuation skills and trading skills and that overconfidence is the main cause behind the excessive trading done by these overconfident investors.

Sembel and Trinugroho (2011) found that investors who are highly overconfident tend to trade more than investors who are less overconfident. Moreover, highly overconfident investors show no difference in trading activity before and after announcement of bad news while less overconfident investors trade less following announcement of bad news. The researchers found that highly overconfident investors earn significantly lower returns compared to less overconfident investors.

Merkle (2017) studied investors who have online brokerage account and found them to be overconfident based on their responses to a survey. The researcher also compared the responses of investors in survey with their actual transactions and portfolio and found that investors who were found to be overconfident based on their
response in survey exhibited increased trading, greater risk taking and less diversification in their portfolio.

Griffin and Tversky (1992) suggested that investors who are less informed trade too aggressively based on their information because they suffer from overconfidence. Bloomfield, Libby, and Nelson (1999) carried out two experiments and found that if professional investors are provided information and other investors are not, it may harm the welfare of less informed investors if they don’t become aware of the extent to which they are at a disadvantage on account of having less information compared to professional investors.

Statman, Thorley, and Vorkink (2006) found that following high market returns and stock market shocks, the turnover of securities tends to go up. So trading activity seems to be sensitive to past returns. Glaser and Weber (2007) carried out a survey and found that investors who believe that they have above average investment skills or have had above average past performance tend to trade more.

Barber, Lee, Liu, and Odean (2006) found that the collective portfolio of individual investors suffers an annual performance loss which is equivalent to 2.2 percent of Taiwan’s GDP while the portfolio of institutional investors increases their returns by 1.5 percentage points every year. The researchers tested and confirmed the hypothesis that individual investors incur losses while institutional investors earn profits from trading and proposed that overconfidence can explain high trading and consequent poor performance of individual investors.

Barber and Odean (2002) documented that the investors who switch to online trading accounts exhibit more active and speculative trading and 3% less returns than the market on an annual basis. The same investors were found to be earning 2 % more returns than the market on an annual basis before switching to online trading account. The researchers argue that this increase in trading and deterioration in performance can be explained by overconfidence, illusion of control and illusion of knowledge.

Graham, Campbell, and Huang (2009) found that investors who believe that they are highly competent when it comes to investing in foreign assets are more likely to make
international investments whereas investors who don’t feel very competent are not likely to invest in international assets.

2.1.9 Representativeness Bias

Representativeness bias is a tendency of people whereby they make judgements and categorize events based on stereotypes or they look for patterns in a series of random events. This bias usually causes people to evaluate a company based on certain factors such as type of management and recent returns. Investors who are affected by this bias tend to consider companies with quality product and high returns to be companies worth investing in.

In their experimental studies, Kahneman and Tversky (1974) found that when people are asked to formulate judgements under uncertainty, they make decisions based on representative information.

Shefrin (2000) defines representativeness as a heuristic which is based on stereotypes. De Bondt and Thaler (1985; 1987) found that investors who are affected by representativeness bias tend to become overly pessimistic about stocks that have not performed well in the past and overly optimistic about stocks that have performed well in the past. This results in overreaction to both good news and bad news and due to this overreaction, stocks that have not performed well in the past become undervalued and stock that have performed well in the past become overvalued. Ganzach (2001) found that investors derive their preference for risk and return for unfamiliar assets based on global preference towards those assets. Wu, Wu, and Liu (2009) carried out a study on Taiwanese stock market and found a weak evidence of representativeness in the time period during 1988 to 2006.

Goldberg and Von Nitsch (2001) found that investors tend to over extrapolate from empirical relationships and convert them into causal relationship even though these relationships may simply be based on illusory correlations.

2.1.10 Status Quo Bias

Status quo bias is a tendency of people to be unwilling to change an existing situation despite having enough reasons to do so. It refers to the irrational preference of people for the current state of affairs.
Oberlechner (2004) found that traders are not willing to change their trading approach even after experiencing an unsuccessful strategy. According to the researchers, status quo bias causes traders to follow unsuccessful trading strategies, styles and preferences for an extended period of time.

Many times traders not only maintain their losing positions but they tend to expand those positions. This phenomenon is known as ‘sunk cost effect’ or ‘throwing good money after bad money’ (Arkes & Blumer, 1985). Endowment effect is another tendency which is related to the status quo bias. Endowment effect is the tendency of people to see value in something more if they already possess it than what they are willing to pay in order to acquire it. Endowment effect together with status quo bias may help explain the tendency of stock market participants to maintain and escalate an initial trading position rather than changing it on account of new information. Kahneman, Knetsch, and Thaler (1990) propose that due to status quo bias, most of the investors do not make annual adjustments to retirement accounts.

Samuelson and Zeckhauser (1988) carried out laboratory experiments and found that status quo bias is not only prominently present when transaction costs are high and calculations are difficult but it is also found even in the face of minimum transactions costs and calculations.

2.2 STUDIES ON INVESTOR BEHAVIOUR AND PERFORMANCE

This section explains various studies done on investor behaviour and their performance in the stock market. Behaviour of professional investors has also been reviewed.

2.2.1 Investor Behaviour And Stock Market Movements

Many researchers have found that individual investor trading activities significantly affect stock market returns. Kaniel, Saar, and Titman (2008) found that when individual investors aggressively buy stocks, prices increase in the preceding month and when individual investors aggressively sell stocks, prices decline in the preceding month. Kelley and Tetlock (2011) analyzed the trading of individual investors and documented that daily order imbalance of individual investors who trade, can predict returns for a period up to the next 20 days. Baker and Wurgler (2007) found that
waves of sentiment have clearly visible and regular effects on the stock market as a whole, especially on stocks that are difficult to arbitrage or to value

Griffin, Nardari, and Stulz (2007) suggested that individual investors tend to trade more if stocks have performed well by analyzing the correlation between market-wide trading activity and returns in 46 markets. The researchers found that there is a strong positive relationship between turnover and past returns. Graham and Kumar (2006) documented that older and low-income investors purchase stocks after dividend announcements and that this explains the price rise which is usually observed following dividend announcements.

2.2.2 Deviation From Norms And Diversification

Fischer and Gerhardt (2007) found that individual investors don’t take decisions as per the recommendations of traditional financial models. This leads to adverse affects in their portfolio performance and significant welfare losses. The researchers go on to propose that financial advice can play a role of being a potentially correcting factor in this process.

De Bondt (1998) reviewed prior studies on individual investors and found that many investors notice price movement patterns even when they are non-existent; they don’t use any financial models to value and select stocks, rely on herd behaviour and other conformist methods such as selecting stocks of companies who have a good public image. The researcher also observed that small individual investors are not properly diversified; they trade in suboptimal ways and they tend to sell stocks that perform well and hold on the stocks that perform poorly, which is known as the disposition effect.

Hoffman, Thomas, and Pennings (2013) found that during the worst months of the 2008-09 crisis, investors’ risk perceptions increase, while their return expectations and risk tolerance decrease. However, the researchers found a recovery in investor perception towards the end of the crisis. It was also found that throughout the crisis, individual investors continue to trade actively without de-risking their investment portfolios.

Contrary to the recommendations of traditional finance models, individual investors tend to be under diversified. This tendency adversely affects their performance.
Goetzmann and Kumar (2008) found that U.S. individual investors hold under-diversified portfolios. The level of diversification was found to be correlated with overconfidence, trend following behaviour and local bias. The level of under-diversification was found to be greater among younger, low-income, less-educated, and less-sophisticated investors. The researchers found that under-diversification adversely affects the returns of investors but there are some investors who under-diversify due to superior information.

Kumar (2007) found that stock returns are affected by the diversification choices made by individual investors. The affect on return was found to be more pronounced on smaller and low institutionally owned stocks that are hard to arbitrage.

Contrary to the previous studies, Ivkovic, Sialm, and Weisbenner (2008) found that households who invest in few stocks outperform the ones who have a diversified portfolio. The researchers found that the trades and holdings of households performed better when they had a stock portfolio with fewer stocks.

The behavior of institutional investors often deviates from established norms. Many researchers have documented that this could be due to superior information. Huang, Yang Wang, and Zang (2012) found that Chinese mutual funds hold lottery type stocks, which are characterized by low average returns and high risk, due to the managers’ ability to capitalize on private information rather than due to behavioural biases. Kumar and Page (2014) found that when institutions that are gambling averse invest in lottery type stocks, they outperform gambling tolerant institutions. The researchers also found that when speculative stock averse institutions hold on to speculative stocks, they earn higher abnormal returns on those stocks. The researchers proposed that such instances indicate informed trading. Page (2010) found that trades which indicate a deviation from institutional investor’s tastes are more likely to reflect information.

**2.2.3 Performance Of Investors**

Several studies have found that individual investors lose money if they trade excessively. Barber and Odean (2002) found that Individual investors pay a significant performance penalty for active trading by earning returns that are significantly lower than the market returns. Barber, Lee, Liu, and Odean (2006)
documented that the aggregate portfolio of individual investors in Taiwan suffers an annual performance loss which can be traced to the aggressive orders placed by the investors. The researchers also found that passive orders placed by individual investors are profitable in the short run but suffer modest losses in the long run. In contrast, it was found that both the aggressive and passive orders placed by institutional investors receive an annual performance boost of 1.5 percentage points.

Odean (1999) found that the stocks bought by individual investors underperform the ones they sell by 23 basis points per month in the 12 months preceding the transaction. The researcher goes on to say that there is a group of investors who systematically earn subpar returns before costs due to their poor security selection ability. Moreover, individual investors seem to trade frequently after they have performed poorly.

Oh, Parwada, and Walter (2004) propose that online traders are noise traders who provide liquidity to other investors. The researchers found that long run performance of online investors is below that of other investor types. Oh, Parwada, and Walter (2008) found that online investors in Korea perform poorly compared to non-online investors. The researchers had a similar finding as Oh et al. (2004) that when Individual investors trade online, they provide liquidity to other investor types.

Barber, Lee, Liu, and Odean (2012) found that the spread in returns between top-ranked and bottom-ranked speculators in Taiwan is 70 bps which they considered as an indicator of cross-section variation in investor skills in the financial markets. Barber, Lee, Liu, and Odean (2004) analyzed the performance of day traders in Taiwan and found that in the typical six month period, more than eight out of ten day traders lost money. However, the researchers documented that the traders with strong past performance continued to earn strong returns.

Khoroshilov (2008) investigated how investors with very little or no knowledge of finance are affected by the basic financial data which is available online and documented that individual investors invest more in stocks with extremely high or low short-term realized returns. Hvidkjaer (2008) documented that stocks heavily bought by individual investors over a period from one month to one year go on to underperform stocks heavily sold by them.
2.2.4 Behaviour Of Professional Investors

Professional analysts who specialise in the field of finance are also affected by behavioural biases. Eastwood and Nutt (1999) found that analysts under react to negative information and overreact to positive information. Stevens and Williams (2003) found that analysts under-react to both positive and negative information, and the under reaction was found to be generally greater for positive information compared to negative information.

Conrad, Cornell, Landsman, and Rountree (2006) found that after large stock price increases, analysts are equally likely to upgrade or downgrade whereas after large stock price declines, analysts are more likely to downgrade.

Mokoaleli-Mokoteli, Taffler, and Agarwal (2009) documented that analysts are prone to behavioral biases as well as potential conflicts of interest in their new stock buy recommendation decisions. Chan, Karczeski, and Lakonishok (2007) found that analysts’ earnings forecasts are not only biased but are influenced by their desire to win investment banking clients.

Barber, Lehavy, McNichols, and Trueman (2001) document that stocks highly recommended by analysts outperform the market, while those that are unfavourably recommended underperform the market.

2.2.5 Classification Of Individual Investors Based On Their Behaviour

Many researchers have attempted to classify investors based on different criteria. Following are some of the classifications of individual investors done by researchers. Sahi and Arora (2012) attempted to segment the individual investors in India into distinct behavioural groups based on their biases and found four main segments of individual investors which they termed as the Novice Learner, the Competent Confirmer, the Cautious Anticipator and the Efficient Planner.

Mittal and Vyas (2008) classified Indian investors into four dominant investment personalities namely casual, technical, informed and cautious. Bailey, Kumar, and Ng (2011) found that behaviorally-biased investors typically make poor decisions about mutual fund investment which results in poor performance. The researchers found that
biased investors can be characterized as ‘gambler’, ‘smart’, ‘overconfident’, ‘narrow-framer’, and ‘mature’.

2.3 STUDIES ON FACTORS AFFECTING INDIVIDUAL INVESTOR BEHAVIOUR

The following studies have been done to analyze the impact of exogenous factors, personality related factors, physiological factors, and a variety of other factors on the behaviour of individual investors. Collectively, these studies demonstrate that factors like the political party in power, BMI, cognitive aging, IQ, market level uncertainty, genetic factors and many other factors significantly affect individual investors’ behaviour.

2.3.1 External Environmental Factors

Bonaparte, Kumar, and Page (2012) concluded that individual investor behaviour is greatly influenced by the political party in power. Individual investors prefer to invest more in risky assets and become more optimistic when the political party supported by them is in power. On account of these portfolio reallocations, the performance of investors’ portfolio improves when their preferred party is in power. However, the improvement in risk-adjusted performance is relatively small.

Kumar (2009) found that uncertainty at both stock and market level amplifies the behavioural biases of individual investors. The researchers also suggested that relatively better informed investors attempt to exploit these behavioural biases of other investors.

2.3.2 Physiological and Genetic Factors, IQ and Personality

Addoum, Korniotis, and Kumar (2017) found that individuals who are taller and have normal-weight are more likely to participate in financial markets, and when they do, they are likely to hold riskier financial portfolios. It was also found that obese people prefer to invest in less risky investments.

Korniotis and Kumar (2010) found that households with high cognitive abilities participate more in the stock market and create more financial wealth compared to households with low cognitive abilities. The researchers go on to say that portfolio performance tends to improve with experience but it is also adversely affected by
cognitive aging. Moreover, portfolio distortions of smart investors reflect superior information and earns high risk adjusted returns whereas portfolio distortions of investors with low cognitive abilities; reflect behavioural biases and earns low risk adjusted returns.

Grinblatt, Keloharju and, Linnainmaa (2011) found that high-IQ Finnish male investors are influenced less by disposition effect and are more likely to supply liquidity when stocks prices are at a one-month high. It was also found that high-IQ investors exhibit superior performance when it comes to market timing, stock-picking skills, and execution of trades.

Kumar and Korniotis (2011) found that older and experienced investors are more likely to have greater investment knowledge. However, they are less effective in applying their investment knowledge as the adverse effects of cognitive aging dominate the positive effects of experience.

Cronqvist and Siegel (2014) found that genetic differences explain up to 45% of the variation across individual investors in terms of diversification, trading and disposition effect. The researchers also found that work experience with finance reduces genetic predispositions to various investment behavioural biases.

Sadi, Ghalibaf Asl, Rostami, Gholipour, and Gholipour (2011) documented that hindsight bias and over confidence bias are directly correlated. Moreover, the researchers found that neuroticism and randomness bias as well as escalation of commitment and availability biases are also directly correlated. The researchers also observed a reverse correlation between openness and availability bias.

2.3.3 Demographic Factors
Kabra, Mishra, and Dash (2010) concluded that age and gender significantly influence the financial decisions of investors. Korniotis, Kumar, and Page (2012) documented that geographical area of residence influences the behaviour of individual investors. The researchers found that, depending on whether local economic conditions are abnormally good or bad, the returns of firms which have their headquarters in less sophisticated areas are more strongly correlated. Barber and Odean (2001) found that men are more overconfident than women and therefore trade more than women.
Kumar and Korniotis (2011) found that older and experienced investors are more likely to have greater investment knowledge.

Sundén and Surette (1998) found that gender and marital status significantly influence how individuals decide to allocate assets in defined contribution plans. The researchers found that a combination of gender and marital status drives investment decisions in defined contribution plans. The researchers found that single women and married men are less likely compared to single men to invest their entire contribution amount in mostly stocks.

Khan, Tan, Chong, and Ong (2017) found that factors such as active trading, usage of internet and telephone, and saving for retirement objective tends to improve the portfolio diversification of finance professional whereas factors such as spending less time on doing research on investments tend to worsen their portfolio diversification. Moreover, the researchers also found that these predictors of portfolio diversification differ based on the finance professionals’ gender, income and experience.

Mishra and Metilda (2015) analyzed the effect of gender, education, and investment experience on overconfidence bias and self attribution bias. The researchers found that men are more overconfident than women and overconfidence tends to increase with investment experience and level of education. Moreover, the researchers found that self attribution bias also increases with level of education. Liivamagi (2016) found that education of investors affects their trading activity in the stock market. The researchers found that investors with an academic degree tend to trade stocks more actively compared to investors with no academic degree. The researchers go on to say that trading experience leads to higher returns in the stock market.

2.3.4 Equity Portfolio & Trading Related Factors

Dhar and Zhu (2006) documented that individuals with more trading experience are affected less by disposition effect and that trading experience reduces the influence of disposition effect on investors.

Nicolosi, Peng, and Zhu (2009) found that individual investors learn from their trading experience. The researchers found evidence that the forecasting ability, trade profitability, and investment performance of individual investors improve with more
experience in the stock market. Khan, Tan, Chong, and Ong (2017) found that the predictors of portfolio diversification of finance professionals differ based on their experience. Mishra and Metilda (2015) found that overconfidence tends to increase with investment experience. Investors with more stock market experience tend to be more overconfident.

Goetzmann and Kumar (2008) found that the level of diversification is correlated with overconfidence, trend following behaviour and local bias. The level of under-diversification was found to be greater among younger, low-income, less-educated, and less-sophisticated investors. The researchers found that under-diversification adversely affects the returns of investors but there are some investors who under-diversify due to superior information.

2.3.5 Other Factors
Kumar and Lim (2008) found that investment decisions of individual investors are influenced by choice of decision frames. The researchers go on to say that investors who exhibit weaker disposition effect and hold better-diversified portfolios are observed to execute more clustered trades.

Kumar (2009) found that stock categorization is an important factor which influences investors’ portfolio decisions and stock returns. The researchers documented that investors shift their preferences across different styles such as growth investing and value investing. Moreover, these style preferences are influenced by past returns of that particular style, differences in earnings and advice from various investment newsletters. However, the preferences are not influenced by changes in expected future cash flows and macroeconomic variables.

Mishra and Kumar (2009) suggested that the level of purchase decision involvement significantly influences the investment behaviour of mutual fund investors. The researchers found that investors who have a low level of purchase decision involvement use very few sources to collect information and rely more on banks for investment advice in comparison to investors who have a high level of purchase decision involvement. Moreover, investors with low purchase decision involvement analyze fewer aspects related to mutual funds compared to investors with high purchase decision involvement.
Sobolev, Chan, Harvey, and McMillan (2017) found that the buying, selling, and holding decisions of individual investors were influenced by news items and price trends. The researchers found that news items influenced the decisions of individuals more than price trends.

Goetzmann and Zhu (2005) conducted a study to check the effect of weather on investor behaviour and found that weather does not have any significant effect on investor behaviour in the US.

Many surveys have been done to identify the factors influencing individual investor behavior. The following are studies from around the world which attempt to indentify factors influencing individual investor behavior.

Usmani (2012) found that the most important factors influencing individual investor behavior in Karachi, Pakistan, while purchasing equity shares are Social relevance and Image, Stock Performance, Accounting Information, Friend/Co-worker Influence, Evaluation, Affordable Share Price, Expected Dividends and Stock Broker Influence.

Merikas and Prasad (2003) found that Greek individuals base their stock purchase decisions on economic criteria and overall trends prevailing at the time purchase.

Baghdadabad, Tanha, and Halid (2011) found that financial statements of companies, accounting instruments, past stock price (return), firms’ public information, profitability variables, financial ratios and past trading volume of stocks are some of the key determinants for stock selection considered by small investors in Kuala-Lumpur, Malaysia.

Al–Tamimi (2006) found that expected corporate earnings, get rich quick attitude, stock marketability, past performance of the firm’s stock, government holdings in the stock and the creation of the organised financial markets influenced the behaviour of the UAE investors the most.

Meditinos, Sevic, and Theriou (2007) found that individual investors in Athens, prefer to think more about the media, newspapers and noise in market while making investment decisions.
Kathuria and Singhania (2012) documented that both male and female employees use magazines, internet and television channels as the three most important sources for making investment decisions.

Rooji, Lusardi, and Alessie (2011) found that financial literacy affects financial decision making and stock market participation of individuals. So, financial literacy is a factor which affects individual investor behaviour.

2.4 INDIVIDUAL INVESTOR BIASES OBSERVED IN DIFFERENT COUNTRIES

Many studies have been done all over the world to analyse the overall behaviour of individual investors.

2.4.1 USA
Barber and Odean (2013) found that American individual investors underperform benchmark indices; they are influenced by disposition effect, limited attention and naive reinforcement learning. They are also affected by past performance in their purchase decisions and they tend to hold undiversified stock portfolios.

2.4.2 Brazil
Decourt, Accorsi, and, Madeira Neto (2007) compared the investment behaviour of the Brazilian MBA students and physicians and documented that the physicians were affected by endowment effect while MBA students were affected by regret aversion and framing in their investment decisions. The researchers also documented that none of the participants were affected by the disposition effect.

2.4.3 France
Magron and Merli (2015) analyzed the repurchase behaviour of individual investors in France and found that French individual investors prefer to repurchase stocks they previously sold for a gain as well as stocks whose prices have gone down since being sold. The researchers documented that less sophisticated investors are more prone to behavioural biases while repurchasing stocks previously owned by them.
2.4.4 Portugal
Leal (2010) found that Portuguese individual investors prefer to repurchase stocks previously sold for a gain and stocks whose prices have declined since being sold. They purchase more stocks if the price of the stock goes down after the initial purchase. The researchers provided evidence that this type of behaviour was more prominent in less active and under diversified investors. The researchers proposed that these patterns can be explained with the help of mental accounting, naive reinforcement learning and regret aversion.

2.4.5 Turkey
Erdem, Yuksel, and Arik (2013) found that almost 70% of all individual investors in Istanbul cannot outperform the market. Moreover, Investors who trade more underperform those who trade less. Male investors trade more and lose more money compared to the female investors and older investors tend to earn higher returns. Tekce, Yilmaz, and Bildik (2016) documented that overconfidence, familiarity bias and status quo bias are prevalent among Turkish individual investors. The researchers found that male investors, younger investors, investors with lower portfolio value and investors who live in regions with low income and low education are affected more intensely by these biases.

2.4.6 South Korea
Park, Konana, Gu, Kumar, and Raghunathan (2010) found that investors in South Korea exhibit confirmation bias when they process information from message boards. The researchers demonstrated that investors who exhibit stronger confirmation bias are more overconfident and documented that participation in virtual communities makes investors more susceptible to investment mistakes and is likely to adversely affect their investment performance.

2.4.7 Japan
Kima and Nofsinger (2003) found that Japanese individual investors tend to own risky and high book-to-market stocks; they trade frequently and make sub-par trading decisions. They also tend to and buy stocks whose prices have gone up recently.
2.4.8 China
Lucarelli and Palomba (2007) found that Chinese investors and stock markets are largely driven by emotional behaviour. Stock market returns are influenced by speculative elements. Chen, Kim, Nofsinger and, Rui (2007) found that Chinese investors are influenced by disposition effect, overconfidence and representativeness bias. These biases cause investors to make poor trading decisions. Moreover, stocks sold by them perform better than the ones they purchase. The researchers also go on to suggest that experienced investors are not necessarily less prone to behavioural biases compared to inexperienced investors.

2.4.9 India
Chandra (2008) found that the individual investors' behaviour in India is driven by psychological factors such as conservatism, under confidence, opportunism, representativeness and informational inferiority complex. Chandra and Kumar (2011) documented that Indian individual investors consider price as an anchor before making decisions, they are overconfident, they are influenced by representativeness and they indulge in mental accounting by grouping their gains and losses. Prosad (2014) found that Indian investors are affected by optimism, overconfidence, disposition effect and herd behaviour. The researcher goes on to say that trading experience do not reduce the effect of these biases.

2.5 SOME MORE STUDIES
Tversky and Kahneman (1981) found that the preference of individuals between various alternatives changes depending upon how the alternative is framed. The researchers observed this reversal of choice even among groups such as academicians and physicians.

Thaler and Sunstein (2003) describe a concept called ‘libertarian paternalism’. This concept preserves the freedom of choice while at the same time steering individuals to make the right choice that will promote their welfare.

Arnott, Berkin, and Ye (2001) highlight the benefits of loss harvesting for a taxable portfolio. The researchers documented that investors can add 27% value to their portfolio by realizing losses. The researchers strongly recommend loss harvesting.
Rabin and Thaler (2001) proposed that expected utility theory should be replaced with an alternative theory. The scholars go on to suggest that the tendency of individuals to isolate each risky choice and a tendency for loss aversion should be the main aspects of the new theory.

Kahneman (1995) discusses counterfactuals which is the tendency of individuals to think about or imagine alternatives to past events that have already happened. This tendency may help to explain the regret that individuals feel when a stock they recently sold for a gain goes up further in price.

**Table 2.1 – Summary of Literature on Behavioural Biases**

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<th>Sr. No</th>
<th>Name of the Bias</th>
<th>Name of the Authors</th>
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<tbody>
<tr>
<td>1.</td>
<td>Anchoring</td>
<td>(Tversky &amp; Kahneman, 1974), (Degeorge, Patel, &amp; Zeckhauser, 1999), (George &amp; Hwang, 2004), (Cen, Hilary, &amp; Wei, (2013) (Kaustia, Alho, &amp; Puttonen, 2008), (Campbell &amp; Sharpe, 2009), (Baker, Pan, &amp; Wurgler, 2009), (Black &amp; Diaz, 1996), (Diaz, 2009), (Oberlechner, 2004), (Eroglu &amp; Croxton, 2010)</td>
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<td>2.</td>
<td>Availability</td>
<td>(Tversky &amp; Kahneman, 1974), (Nofsinger &amp; Varma, 2013), (Jegadeesh &amp; Kim, 2006), (Mikhail, Walther, &amp; Wills, 2007), (Baron &amp; Byrne, 1997), (Gilad &amp; Kliger, 2008), (Keller, Siegrist, &amp; Gutscher, 2005), (Daniel, Hirshleifer, &amp; Teoh, 2002), (Frieder, 2003), (Ganzach, 2001), (Lee, Obrien, &amp; Sivaramakrishnan, 2005), (Jarell &amp; Peltzman, 1985), (Kahneman &amp; Tversky, 1982)</td>
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<td>Sr. No</td>
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<td>4.</td>
<td>Herd Behaviour</td>
<td>(Cutler, Poterba, &amp; Summers,1989), (Shiller, 1989), (Cont &amp; Bouchaud, 2000), (Scharfstein &amp; Stein, 1990), (Devenow &amp; Welch, 1996), (Christie &amp; Huang, 1995), (Chang, Cheng, &amp; Khorana, 2000), (Hwang &amp; Salmon, 2001), (Bikhchandani &amp; Sharma, 2001), (Nofsinger &amp; Sias, 1999), (Hwang &amp; Salmon, 2001)</td>
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<td>5.</td>
<td>Limited Attention</td>
<td>(Barber &amp; Odean, 2008), (Seasholes &amp; Wu, 2007), (Corwin &amp; Coughnour, 2008), (Dellavigna &amp; Pollet, 2009), (Loh, 2008), (Hou, Peng, &amp; Xiong, 2009), (Seasholes &amp; Wu, 2007)</td>
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<td>7.</td>
<td>Naive reinforcement learning</td>
<td>(Strahilevitz, Odean, &amp; Barber, 2011), (Choi, Laibson, Madrian, &amp; Metrick, 2009), (Kaustia &amp; Knupfer, 2008), (Chiang, Hirshleifer, Qian, &amp; Sherman, 2011), (Jegadeesh &amp; Titman, 1993), (Weber &amp; Welfens, 2011)</td>
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<td>8.</td>
<td>Overconfidence</td>
<td>(Barber &amp; Odean, 2001), (Mittal &amp; Vyaas, 2011), (Statman, Thorley, &amp; Vorkink, 2006), (Sembel &amp; Trinugroho, 2011), (Merkle, 2017), (Griffin &amp; Tversky, 1992), (Bloomfield, Libby, &amp; Nelson, 1999), (Statman, Thorley, &amp; Vorkink, 2006), (Glaser &amp; Weber, 2007), (Barber, Lee, Liu, &amp; Odean, 2006), (Barber &amp; Odean, 2002), (Graham, Campbell, &amp; Huang, 2009)</td>
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<td>9.</td>
<td>Representativeness</td>
<td>(Kahneman &amp; Tversky, 1974), (Wu, Wu, &amp; Liu, 2009), (Tversky &amp; Kahneman, 1974), (Tversky &amp; Kahneman, 1983), (Shefrin, 2000), (De Bondt &amp; Thaler, 1985; 1987), (Ganzach, 2001), (Goldberg &amp; Von Nitsch, 2001)</td>
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<td>10.</td>
<td>Status Quo</td>
<td>(Oberlechner, 2004), (Arkes &amp; Blumer, 1985), (Kahneman, Knetsch, &amp; Thaler, 1990), (Samuelson &amp; Zeckhauser, 1988)</td>
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2.6 RESEARCH GAPS

➤ Many empirical studies have been done to analyze the biases exhibited by individual investor behaviour. However, most of these studies have been done in developed countries. Very few studies have been done in India, particularly in Gujarat. And to the researcher’s best knowledge no such study has been done in Surat.

➤ The reviewed studies have focused on exploring one or two biases. Very few have analyzed a number of biases in aggregate. Moreover, very few of the reviewed studies were survey based.

➤ No survey based study has been carried out to understand the influence of behavioural biases on individual investor behaviour, which devises a methodology to categorizes investors as biased or unbiased and which differentiates biased and unbiased respondents in terms of their demographic characteristics as well as equity portfolio and trading related characteristics. It has been documented by the researchers that the effect of biases on investors differs based on the demographic factors and many other factors. However, this matter has not been fully and comprehensively explored in the Indian context. The present study attempts to fill this gap.

2.7 RESEARCH OBJECTIVES

Based on the review of literature and the research gaps, following are the objectives of the study

1. To investigate which behavioural biases influence the behaviour of individual investors
   1.1. To identify the most prominent bias/biases in the Indian context
   1.2. To make a demographic profile of investors influenced by each bias
1.3. To analyze whether there is an association between biasness of the investors with respect to each bias and their demographic characteristics, the most influencing factor while making equity share buy/sell decisions, annual investment in direct equity, trading frequency, experience in the stock market, portfolio diversification, and return on equity portfolio.

2. To categorize investors as overall biased or overall unbiased based on their total bias score.

3. To analyze whether there is an association between overall biasness of the investors and their demographic characteristics.

4. To analyze whether there is an association between overall biasness of the investors and the most influencing factor while making equity share buy/sell decisions, annual investment in direct equity, trading frequency, experience in the stock market, portfolio diversification, and return on equity portfolio.

The methodology used to fulfil the objectives is discussed in the next chapter.