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Article:	**Emotional and Cognitive Behaviour biases and Individual Investors Investment Decision in Islamabad Stock Market**
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ABSTRACT

The objective of this study is to investigate the influence of emotional and cognitive behavioural factors on the investment decisions of individual investors in Islamabad stock market. Data for this research study was collected from 150 individual investors the response rate of the respondents was 80%. There are two categories of behavioural factors of individual investors at the Islamabad Stock Market: Emotional behavioural factors such as overconfidence, loss aversion, Self-control, and optimism while cognitive-behavioural factors such as anchoring, mental accounting, representativeness, hindsight. The result of the study shown that emotional and cognitive-behavioural biases have moderating relationship with Indivisual investor investment decision in Islamabad stock market. Further the results of the study show that securities companies may also better for understanding of investors' investment decision and to give better recommendations for future investment scenario. Stock prices reflect real value of stock and Islamabad stock market becomes the yardstick of the economy's wealth and helps enterprises to raise capital for business activities.

Keywords: Behavioral finance, cognitive and emotional biases, investor decisions, Islamabad stock market

INTRODUCTION

In his modern era the stock market has been the most essential commercial sector in the country. Economy grow subsequently through a well-established financial market to expand further by increasing investment and attracting more foreign investment and reducing risk; it also plays a key role in liberating valuable investors. Furthermore, investors are major players in the stock market and the functioning of the stock market cannot be enlightened without clarifying investor decisions on buying and selling shares (Ali & Rehman, 2013). The definition of a successful market hypothesis is based on modern financial theory and assumes that due to rationality shareholder can maximize their wealth by using all available information (Ritter, 2003). Scholars of economics and finance have begun to focus on the behavioural and psychological dimensions of investor investment decisions. The two renowned physiologists Kahneman and Tversky (1979) stated that individual's don't act rational while dealing with the emotional and cognitive behaviour biases that can affect the uncertainty of decision-making process. This observation became the central principle called financial behaviour in the modern field of finance. Therefore, the social and psychological elements of behavioural finance mix with finance. Behavioural finance studies how investors bring together all available information about financial markets and how they evaluate and perceive this information. (Kumari, 2016) established the relationship between conventional financial theories and various behavioural biases. Besides, behavioural finance examines the decision-making patterns behind investor decisions when they buy or sell stocks. It is also about examining the psychological reasons why investors can make irrational decisions (Ali & Tariq, 2013).The stock market and a country's economy are closely associated with each other. A booming stock market has a positive impact on a country's growth and development. Therefore, stock market investment decisions play important part in the economy. This study explores the effect of behavioural bias on investor decisions on the Islamabad Stock Exchange (ISX). Emotional biases (such as overconfidence, loss aversion, self-control and optimism) and cognitive biases (such as anchoring, mental accounting, representation and hindsight) involve behavioural bias.

2. Literature Review

Theoretical framework and Hypothesis Development

2.1 Prospect Theory

(Kahneman & Tversky, 1979) (Kahneman & Tversky, 1979) established a model known as prospect theory as an alternative to expected utility theory which is a descriptive model of investor decision-making in risk. According to the prospect hypothesis investors make decisions based on the potential worth of losses and gains rather than the ultimate result. It is essentially a behavioural economic theory that explains how people choose between risky alternatives. According to the prospect hypothesis avoiding losses is more valuable to an investor than making a profit, thus investors make decisions based on perceived profits and losses.

2.2 Heuristic Theory

Heuristics are simple rules of thumb that make decision-making easier especially in challenging or ambiguous situations (Ritter, 2003). It becomes easier to appraise a situation by minimizing the challenges and increasing the probability. According to (Kahneman and

Tversky, 1979) heuristic are very valuable for individuals especially in situations where time is limited and a decision need to be made quickly but they can also lead to biasness in investment decisions. Heuristics theory includes anchoring, overconfidence, and the gambler's fallacy.

2.3 Hypothesis Development

The amendments made to a standard financial system are well-defined in behavioural finance. Statman (2014) provided a general description of normal individuals in standard finance from an alternative in behavioural finance for rational individuals. It replaces the mean-variance portfolio theory with the theory of the behavioural portfolio and the CAPM and other models with models of behavioural asset valuation in which only risk-based expected returns are measured. Behavioural finance expands the finance scope beyond portfolios valuation of assets and success of business. It directly and indirectly investigates the conduct of investors, managers, and business evaluating desires, mistakes, attitudes and behaviors through questionnaire. Behavioral finance explores behaviour in terms of savings and expenditure and explores financial decisions influenced by culture, equality, social responsibility, and other emotional and cognitive desires. Subash (2012) shows that overconfidence lead individuals to overemphasize their understanding and undervalue their capability to influence events while undervaluing the risks.

Al-Wattar, Almagtome and Al-Shafeay (2019) studied financial market which can be the single most important component of behaviour when it comes to understanding the anomalies of financial relations and extreme certainty clarifies the oddities in exchanges and it enhances the confidence of individuals in the contrast and information of their decisions. Mahina et al. (2017) assessed that investing in the Rwandan equity market was strongly influenced by the loss aversion bias. This study further examined the fact that stock market investors seem to regret holding losing stocks for too long rather than selling winning stocks too quickly. Kumar et al. (2018) studied the large gender influence of investors on the incidence of loss aversion in investors and the influence of loss aversion bias on investment decisions made by investors.

Cummins and Nistico (2002) found that the desire for power is positively connected with life satisfaction. Findings from the exploratory study also revealed that people who invested in systematic investment strategies, retirement plans, or invested their money stuck in day-to-day investment paths expressed confidence in having to make arrangements for their future. Zurlo's study (2009) showed that the relationships between demographic and socioeconomic variables and financial satisfaction are not controlled by the influence on health and finances. Fabre and François-Heude (2009) defined optimism as "the propensity or inclination to see an event or action as more likely to lead to a favorable consequence regardless of the empirical probability of the actual occurrence of such an outcome". That is, without paying attention to how the product would be made with the given quality of assets the optimism was just the hope of favorable performance.

Bracha and Brown (2012) made it clear that in risky circumstances optimism plays an important role and also includes knowledge of the situation, i.e. endogenous uncertainty. Uncertainty would be seen as an advantage by an optimistic person and therefore it was a search for uncertainty while a negative person would see it as a disadvantage and therefore averse to

ambiguity. Waweru et al (2008) anchoring allow investors to define a range based on historical trends for a company's share price or income causing in insufficient response to unanticipated variations. Andersen et al. (2010) defined anchoring as a general propensity of investors to depend too much on any information on the decision-making process coming from the financial market. Ritter (2000), Representativeness can lead to certain biases when individual gives more preference to his or her experience. A typical example of this bias is that investors often assume the high long-term growth rate of companies after just a few quarters of growth.

Waweru et al (2008) M. M. Pompian, (2017) clarified that when analyzing new information the representativeness bias normally arises due to an imperfect emotional structure. Some investors project consequences that influence their pre-existing ideas and decision making to facilitate the processing of new knowledge. Shah et al. (2018) clarified that the bias in representativeness has a insignificant negative effect on investment decisions made by investors who regularly trade in the PSX and on perceived market performance. This behaviour is accelerated by the fact that actual results are more easily grasped from people's minds than the infinite range of results that could but have not materialized. Pompian (2006) People therefore tend to overestimate the accuracy of their predictions this does not mean that individuals do not make accurate predictions just that individuals can assume that they have made an accurate prediction in hindsight. In past so many studies some of which will be discussed shortly as well as in various other contexts such as politics, medical, and environmental studies a retrospective bias has been observed. This study identifies cognitive and emotional biases influence investors' decisions in the financial markets. The information was obtained through questionnaire on cognitive and emotional behavioural biases. The following hypothesis was made for research assuming that cognitive and emotional biases influence investor behaviour in stock market investment decision. . From the above discussion the following hypothesis is formulated:

Hypothesis 1: Overconfidence bias has significant positive impact on stock market investment decisions.
Hypothesis 2: Loss aversion bias has significant positive impact on stock market investment decisions.
Hypothesis 3: Self-control bias has significant positive impact on stock market investment decisions.
Hypothesis 4: Optimism bias has significant positive impact on stock market investment decisions.
Hypothesis 5: Anchoring bias has significant positive impact on stock market investment decisions.
Hypothesis 6: Mental accounting bias has significant positive impact on stock market investment decisions.
Hypothesis 7: Representativeness bias has significant positive impact on stock market investment decisions.
Hypothesis 8: Hindsight bias has significant positive impact on stock market investment decisions.

2.4 Conceptual Framework of the Study

The study examines the impact of behavioural biases (i.e. emotional cognitive and biases) on investor decisions at the Islamabad Stock Exchange. Emotional biases include overconfidence, loss aversion, self-control and optimism. In the other hand, anchoring, mental accounting, representativeness, and hindsight bias are cognitive biases.

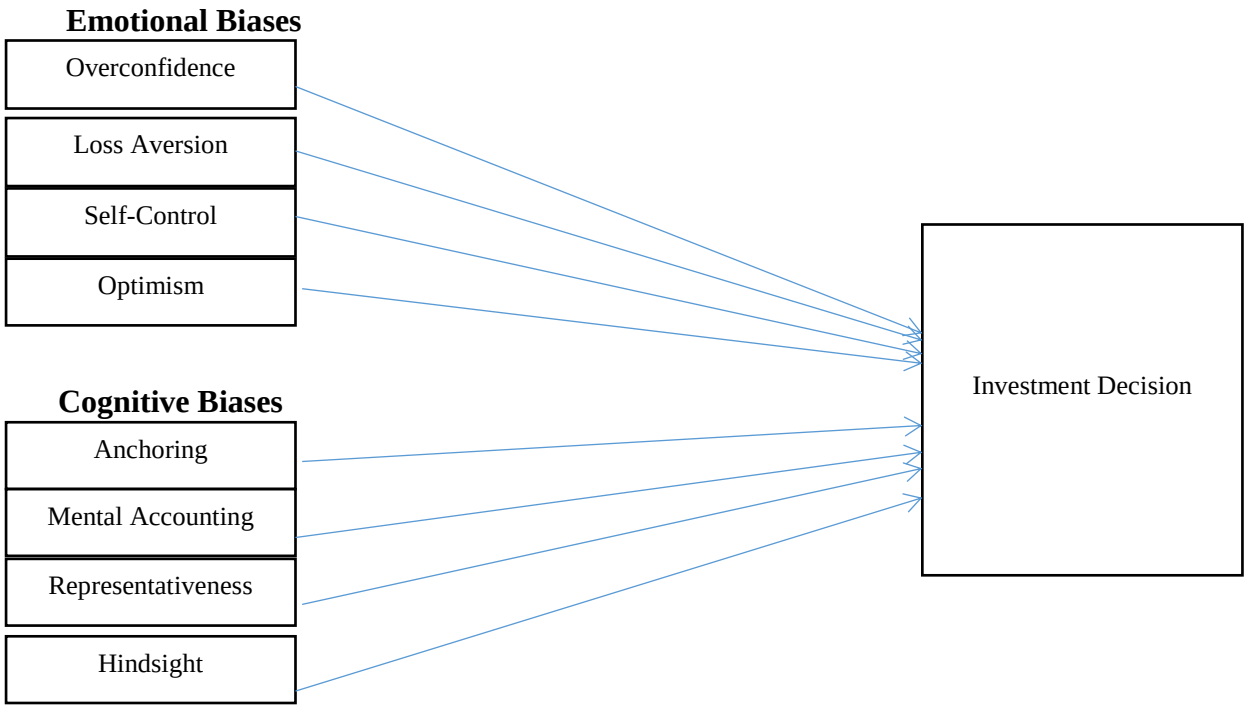

Figure 1 presents conceptual framework of the study.

3. Research Methodology

3.1 Research Approach: Quantitative research which comprises acquiring quantitative or qualitative data and evaluating statistical techniques is most usually associated with deductive reasoning. It also works well with quantitative research methods (Bryman & Bell, 2007, p. 11-13).

3.2 Sample size: A sample size of the study consists of 150 Individual investors at Islamabad stock market. The larger the sample size is more representative and more reliable will be the result (Saunders et al., 2009).

3.3 Research instrument: The 24-item questionnaire was used based on emotional and cognitive behaviour biases. Respondents' thoughts and attitudes are elicited using a 5-point Likert scale (Fisher, 2010).

4. Results and Discussions

4.1 Evaluation of Behavioral Factors

Since 5-point scales are used to calculate the impact levels of these variables the mean values of these variables can be calculated by the following rules:

1. The variables must be very small if the mean value is less than 2.
2. The mean values of the variables are between 2 and 3, indicating that they are low.
3. The mean values of the variables are between 3 and 4, indicating that they are moderate.
4. The mean values of the variable are between 4 to 5, indicating that the variables are dominant.
5. The variables are very large if the mean values are more than 5.

Table1. Effects of Overconfidence and investment decision

Factors	Variables	Mean	Std. Deviation
Overconfidence	**X1.** My skills and knowledge of the stock market guide my decision To either sell or buy securities.	3.5000	1.46892
	X2. My skills and knowledge of the securities market helps me to Outperform the market.	3.3600	1.24394
	X3. I am normally able to anticipate the end market returns as the CSX as either good or poor.	3.9067	1.11335

Note: X3 has high impact-highest among Overconfidence Bias variable (mean = 3.9067, standard deviation = 1.11335)

Table1 shows the descriptive analysis such as mean and standard deviation among overconfidence factor and its sub-variables the highest mean and standard deviation were noted in X3 sub variable of overconfidence its mean and standard deviation value were 3.9067 and 1.11335 respectively. The lowest Mean and standard deviation was noted in X1 sub variable of overconfidence its mean and standard deviation value were 3.5000 and 1.46892 respectively. The degree of trust at the moderate level of individual investors at the ISE Simon and Odean (2001) says that individuals commonly trust in their abilities and experience to outperform the market. Studies indicated that Asian individuals appear to be more over-confident than European or American individuals are also not strongly endorsed (Yates et al., 1997). However, investors at the ISE need to be certain that their investment decisions will successful.

Table2. Effects of Loss aversion and investment decision

Factors	Variables	Mean	Std. Deviation
Loss Aversion	**X4.** After a prior loss, I become more risk-averse.		3.9067 1.05134
	X5. After a prior gain, I become more of a risk-taker.		3.7800 1.20330
	X6. I am more stressed about losses as compared to the the happiness I derive from a gain of an equal amount.		3.1600 1.47952

Note: X4 has high impact-highest among Loss Aversion Bias variable (mean = 3.9067, standard deviation = 1.05134)

Table2 shows the descriptive analysis such as mean and standard deviation among loss aversion factor and its sub-variables the highest mean and standard deviation were noted in X4 sub variable of loss aversion its mean and standard deviation value were 3.9067 and 1.05134 respectively. The lowest mean and standard deviation was noted in X6 sub variable of loss aversion its mean and standard deviation value were 3.1600 and 1.47952 respectively. The research demonstrated that whenever al loss occurs investor becomes more conscious to avoid the loss in their investment decisions. These are natural investor responses as they are so motivated by the prior investment performance while the loss surely depresses them a lot. Loss aversion however due to the concept of "high risk-high return," is not always a successful strategy. Odean (1998) point out that loss aversion has significant negative impacts on investor investment decisions in stock market.

Table3. Effects of Self-control bias on investment decision

Factors	Variables	Mean	Std. Deviation
	X7. Current savings and cash reduce consumption and decrease In total utility.	3.3600	1.24394
Self-control Bias	**X8.** Current savings is negatively associated with financial Satisfaction.	3.9067	1.11335
	X9. Future planning and an increase in savings will lead to increase of in future financial satisfaction.	3.1600	1.47952

Note: X8 has high impact-highest among Self Control bias variable (mean = 3.9067, standard deviation = 1.11335)

Table3 shows the descriptive analysis such as mean and standard deviation among self-control factor and its sub-variables the highest mean and standard deviation were noted in X8 sub variable of self-control its mean and standard deviation value were 3.9067 and 1.11335 respectively. The lowest mean and standard deviation was noted in X9 sub variable of self-control its mean and standard deviation value were 3.1600 and 1.47952 respectively. With regard to self-control its moderate effect (mean = 3.9067) indicates investors should not very conscious about their systematic investment strategies retirement plans or placed their money locked in daily investment avenues that expressed confidence that they should make arrangements for their future.

Table4. Effects of Optimism bias on investment decision

Factors	Variables	Mean	Std. Deviation
	X10. Individuals believed that they were more likely to experience Positive events than negative events are true.	3.9067	1.05134
Optimism Bias	**X11.** Decision-based on perception normally lead to negative outcome	3.7800	1.20330
	X12. The decision of perception leads to higher return than normal return.	3.3600	1.24394

Note: X10 has high impact-highest among Optimism bias variable (mean = 3.9067, standard deviation = 1.05134)

Table4 shows the descriptive analysis such as mean and standard deviation among optimism factor and its sub-variables the highest mean and standard deviation were noted in X10 sub variable of optimism its mean and standard deviation value were 3.9067 and 1.05134 respectively. The lowest Mean and standard deviation was noted in X12 sub variable of optimism its mean and standard deviation value were 3.3600 and 1.24394 respectively. With regard to optimism its moderate effect (mean = 3.9067) investors should focus more on the optimistic results they predicted from their investment portfolio since the empirical investigation most clearly indicates the projected future return of the investment.

Table5. Effects of Anchoring bias on investment decision

Factors	Variables	Mean	Std. Deviation
	X13. I forecast the changes in stock prices in the future based on the recent stock prices.	3.1600	1.47952
Anchoring Bias	**X14.** I buy 'hot' stocks and avoid stocks that have performed poorly in the recent past.	3.9067	1.11335
	X15. Good companies have good stocks.	3.3600	1.24394

Note: X14 has high impact-highest among Anchoring Bias variable (mean = 3.9067, standard deviation = 1.11335)

Table5 shows the descriptive analysis such as mean and standard deviation among anchoring factor and its sub-variables the highest mean and standard deviation were noted in X14 sub variable of anchoring its mean and standard deviation value was 3.9067 and 1.11335 respectively. The lowest mean and standard deviation are noted in X13 sub variable of loss aversion its mean and standard deviation value were 3.1600 and 1.47952 respectively. With regard to anchoring its moderate effect (mean = 3.9067) it shown that the future stock prices for investment decision making are predicted by two different thoughts. This represents the current state of the Islamabad stock market in which various individuals employ strategies to investigate and estimate future variations in stock values based on recent prices, while others choose to focus on other factors. This can be explained by the fact that the strong and unpredictable volatility in the pattern of stock prices at the ISE make investors think of ways to forecast stock price movements more accurately than the prices they have seen in the past.

Table6. Effects of Mental accounting bias on investment decision

Factors	Variables	Mean	Std. Deviation
	X16. I usually manage every aspects of portfolio separately	3.5000	1.46892
Mental Accounting	**X17.** I ignore the connection between different investment possibilities.	3.3600	1.24394
	X18. I separate my finances into different accounts and monitor them separately and differently.	3.9067	1.11335

Note: X18 has high impact-highest among Mental Accounting Bias variable (mean = 3.9067, standard deviation = 1.11335)

Table6 shows the descriptive analysis such as mean and standard deviation among mental accounting factor and its sub-variables the highest mean and standard deviation were noted in X18 sub variable of mental accounting its mean and standard deviation value were 3.9067 and 1.11335 respectively. The lowest mean and standard deviation was noted in X17 sub variable of mental accounting its mean and standard deviation value were 3.3600 and 1.24394 respectively. With regard to mental accounting its moderate effect (mean = 3.9067) mental accounting bias shown low effect on investors' decision-making at the ISE. This outcome endorses that stakeholders prefer to manage collectively each and every aspect of the securities allocations in stock market.

Table7. Effects of Representativeness bias on investment decision

Factors	Variables	Mean	Std. Deviation
	X19. History influences present investment decisions	3.7800	1.20330
Representativeness	**X20.** You buy well-performing securities and avoid stocks that have performed poorly in the recent past	3.9067	1.11335
	X21. You use trend analysis of some representative securities To make investment decisions for all securities	3.3600	1.24394

Note: X20 has high impact-highest among Representativeness Bias variable (mean = 3.9067, standard deviation = 1.11335)

Table7 shows the descriptive analysis such as mean and standard deviation among representativeness factor and its sub-variables the highest mean and standard deviation were noted in X20 sub variable of loss aversion its mean and standard deviation value were 3.9067 and 1.11335 respectively. The lowest mean and standard deviation was noted in X6 sub variable of representativeness its mean and standard deviation value were 3.3600 and 1.24394 respectively. With regard to representativeness its moderate effect (mean = 3.9067) shown that representativeness bias had low impact on investor investment decision for their future desire output. Shah et al. (2018) explained that representativeness bias has negative impact on investor investment decision at PSX.

Table8. Effects of Hindsight bias on investment decision

Factors	Variables	Mean	Std. Deviation
	X22. We feel we already knew what was going to happen after an event has occurred.	3.9067	1.11335
Hindsight Bias	**X23.** We interact with others in such a way that they react in a the way that confirms our expectations of their behaviour.	3.9067	1.11335
	X24. We believe we could have changed the outcome of a	3.9067	1.05134

the event had we done something slightly different.

Note: X22 has high impact-highest among Hindsight Bias variable (mean = 3.9067, standard deviation = 1.11335)

Table8 shows the descriptive analysis such as mean and standard Deviation among hindsight factor and its sub-variables the highest mean and standard deviation were noted in X22, X23 and X24 sub variable of hindsight bias. Their mean and standard deviation value were 3.9067 and 1.11335, 3.9067 and 1, 11335, 3.9067 and 1.05134 respectively. All these variables show the same mean and standard deviation values among themselves. With regard to hindsight its moderate effect (mean = 3.9067) it indicated that investors do not predict too much hindsight bias to predict the positive consequence of their investment decision this does not mean that individuals do not make accurate decisions about expected return but numerous studies in the field of finance medicine and environmental sciences shows the discrepancy exist between what Individual expected and what actual result declares.

5. Conclusion

Emotional and cognitive are the two prominent categories of behavioural biases that influence individual investor's investment decision at the Islamabad Stock market. Emotional behavioural factors are overconfidence, loss aversion, self-control and optimism, while cognitive-behavioural factors are anchoring, mental accounting, representativeness and hindsight, the result of the empirical analysis of the study suggest that emotional factor and its sub-variables as well as a cognitive factor and its sub-variables all moderately effect the Individual investment decision in Islamabad stock market. Besides this Individual investors at Islamabad stock market should consider all the emotional and cognitive behavioural variables in considerations while making a successful investment decision in the stock market because it is a universal principle that with the time there are fluctuations occur so market price, share price, investor preference, and Investment avenue absorbed changes over time.

5.1 Suggestions for Future Research

The following suggestions are suggested by the current study:

This study is an investigation into individual investors Islamabad stock market the study just randomly chose a sample. Future research studies are required to validate the results of this study with the larger sample size and the greater variety of defendants (Luu, 2013). It is also proposed that more research studies use behavioural finance to investigate the unexplored behavioural variables in the context of investment decisions at the Islamabad Stock market. The influence of corporate governance and corporate social responsibility and behavioural

factors on individual investor's decision is another interesting area to be discovered. Another important research avenue may be the relationship between behavioural factors of individual investors and market value.

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