

# **Individual Investors Psychology and Investment Decision in NEPSE**

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## **Abstract**

*This study attempts to examine individual investor's psychology and their investment decision in NEPSE with an objective to identify whether the individual psychological factors and their biases influence decision making in Nepalese stock market. The sample size of 347 was taken from broker office located in Butwal city for this study. Psychological factors named anchoring, herding, mental accounting, overconfidence; regret aversion and loss aversion were undertaken. These factors were further categorized as cognitive bias (anchoring, herding and mental accounting) and emotional bias (overconfidence, regret aversion and loss aversion). Self administered questionnaire were used to collect data. In the same way descriptive and analytical research design were used to analyze the data. Multiple regression analysis showed that overconfidence, herding and loss aversion have impact on investment decision whereas anchoring, mental accounting and regret aversion does not have an impact on individual investors investment decision. The result further showed that cognitive and emotion biases both have positive and significant influence on the investment decision making of individual investor in Nepalese stock exchange.*

*Keywords: Anchoring, Herding, Mental Accounting, Overconfidence, Regret Aversion, Loss Aversion, Cognitive Bias, Emotional Bias.*

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## **I. Introduction**

Investment is an action whereby fund is placed in some opportunity or instrument with the expectation of increase in its value and positive returns. The investment can be real investment or financial investment. Real investment involves tangible assets such as land, building, machinery, factories, etc. On the other hand, financial investment involves contract in paper or electronic form such as stocks, bonds etc. The attraction of an individual has increased towards financial investment. The financial investments are made in financial market and it's of two types: Primary Market and Secondary Market. Primary market is concerned with the dealing of IPO and secondary market is with FPO. Nepal stock market is termed as secondary market where the stocks or securities are transacted as FPO. It is the market for selling and buying of the stocks or shares of a firm (Kafayat, 2014).

Stock market in Nepal has a relatively short history. The modern development of stock market began with the establishment of Securities Exchange Centre (SEC) in 1976 for facilitating and promoting the growth of capital market (Gurung, 2004). K.C. (2010) in his study indicated that financial development does matter and stock markets do spur economic growth of Nepal. Dao and Ton (2014) showed that behavioral factors exists in individual investor commonly

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and affect their investment strategies. Kengatharan and Kengatharan (2014) based on their study argued that psychological factors play a significant role in behavioral finance theory. They further pointed out that behavioral finance studies psychological behavior such as emotion and panic, which may well influence the behavior of individual investors. According to behavioral finance, individual investors do not always behave in their personal best interests.

Malkiel (1973) stated that when it comes to investing, people generally follow their emotions and not their reason. Various capital assets pricing theory and portfolio theory are much known in Nepalese context as well and various researches and studies are carried out concerning this but the concept and importance of behavioral finance among the Nepalese investors still is in infancy stage and it needs to be explored. To know this studying Individual investors psychology and their investment decision in NEPSE is crucial. Thus, the psychological factors which are driven in this study which are assumed to have significant influence on individual investment decision making of individual investor in NEPSE are: Anchoring, Mental Accounting, Herding, Overconfidence, Regret Aversion and Loss Aversion. These factors were further categorized as cognitive bias (anchoring, herding and mental accounting) and emotional bias (overconfidence, regret aversion and loss aversion). The advocates of behavioral finance have been able to explain a number of psychological factors that have an effect on the decision making of investors in the stock market, (Bakar & Chui, 2016).

### **Statement of Problem**

Prior to the beginning of NEPSE, the volume of market activity was very low while it tended to surge at the latter period. Turnover got rose from Rs 2 million in 1984/85 to Rs 800 million by the year 1993 and it became more rapid with the commencement of NEPSE as market promotion and easier access permitted a significantly the greater number of players to enter the market. Dao and Ton (2014) showed that behavioral factors exists in individual investor commonly and affect their investment strategies. Thaler (1980) identified several observable decision-making mistakes that people make such as under weighting opportunity costs, failing to ignore sunk costs, and regret aversion. The advocates of behavioral finance have been able to explain a number of psychological factors that have an effect on the decision making of investors in the stock market. (Bakar & Chui, 2016). This provides the new research path for other researchers to explain the behaviors of investors better as well as further assess the negative impact of psychology factors to limit these behaviors. By making connection between psychological theory and practice of finance, behavioral finance has helped to explain difficult and sophisticate problems which cannot be illustrated clearly by traditional economic theory and traditional finance theory (Dao & Ton, 2014). Capital asset pricing theory and portfolio theory have been studied widely in the field of finance to determine the decision pattern of investors while making investments whereas the behavioral and psychological aspects pertaining to the individual investor's composition of a portfolio is still unexplored in Nepal. Therefore, the study regarding the role of psychological factors in determining individual investment decision needs to be undertaken. Thus this study seeks to answer following questions:

- What are the psychological factors that influence the investors' decision in NEPSE?
- What is the effect of investors' biases on investment decision in NEPSE?

### **Objectives of the Study**

The objective of this study is to investigate the psychological factors that impact on the investment decision-making of Nepalese investors through Nepal Stock Exchange. The specific research aims are to address the following issues concerning Individual shareholders are as follows:

- To examine psychological factors/biases that influences investor's decision in NEPSE.
- To evaluate the effect of investors biases on investment decision in NEPSE.

#### Hypothesis

Hypothesis undertaken to meet the objective of this study are;

- H1 – Anchoring (Cognitive Bias) has significant effect on investment decision.
- H2 – Herding (Cognitive Bias) has significant effect on investment decision.
- H3 – Mental Accounting (Cognitive Bias) has significant effect on investment decision.
- H4 – Loss Aversion (Emotion Bias) has significant effect on investment decision.
- H5 – Regret Aversion (Emotion Bias) has significant effect on investment decision.
- H6 – Overconfidence (Emotion Bias) has significant effect on investment decision.
- H7 – Cognitive bias has significant effect on investment decision.

## II. Theoretical Framework

Stock market is best known for being the most effective channel for company's capital raise (Zuravicky, 2005). The cognitive psychologists Kahneman and Tversky (1979) are considered as the father of behavioral finance. Since their contributions in this sector is valuable since 1960s. Numerous studies from ASEAN, Middle East and Western countries have in fact has established that psychological factors do have relationships and impacts on the decision making of investors in their stock markets (Bakar & Chui Yi, 2016). The psychologists have found that human beings do not behave as rationally as economists suppose. The frequent occurring of stock market anomalies and empirical researches conducted by Babajide & Adetiloye (2012). Azam et. Al (2013) in their study revealed that investors are not always as rational as they are portrayed to be. These anomalies can be explained by a new emerging area of finance termed as behavioral finance. Behavioral finance explains how various psychological traits affect, how individuals or groups act as investors, analysts and portfolio managers. It further tries to understand how emotions and cognitive errors influence behaviors of individual investors (Kengatharan & Kengatharan, 2014). Moreover, it also seeks to explain why and how investors can act beyond the boundary of rationality in various ways that oppose to what they are supposed to.

A cognitive bias is simply defined as a systematic discrepancy between the "correct" answer in a judgmental task, which is given by a formal normative rule, and the decision maker's or experts actual answer to such a task (Von & Edward, 1986). A cognitive bias is said to be the mistake made in evaluating, reasoning, remembering or other cognitive processes frequently appears as an outcome of holding one's beliefs and preferences irrespective of contrary information about it. Emotional biases rise out of the intuition or impulse spontaneously and not through the conscious effort. Emotions biases cause suboptimal decisions of the investors and they are harder to correct comparing to the cognitive biases (Pompian, 2012). It occurs spontaneously based on the personal feelings of the individual at the time when a decision is made. Emotions frequently overpower investors thinking during times of stress.

Anchoring is a common human tendency to rely too heavily on one attribute or piece of information when making decisions. Anchoring refers to people's propensity to make estimates about the chances of uncertain events. Herding simply means following the actions

of others without any logic/reason behind it, resulting in amplified mass reaction. Herding investors act the same ways as prehistoric men who had a little knowledge and information of the surrounding environment and gathered in groups to support each other and get safety (Arcangelis, Caparrelli, & Cassuto, 2004). Mental accounting violates the rational economic concept of fungibility. Mental Accounting makes the investors ignore chances to decrease risk by way of integrating assets with low correlation and to irrationally distinguish between returns derived from capital appreciation and income (Pompian, 2012). Overconfidence occurs when investor over estimate the reliability of their knowledge, skills, accuracy and experience of their information or over optimistic about the future outcome and the ability to control any adverse situations (Camerer & Lovallo, 1999; Daniel, Hirshleifer & Subrahmanyam, 2001). Regret is an emotion that generally occurs after people make mistakes. Investor tries to avoid regret by refusing to sell decreasing shares and willing to sell increasing ones. Loss aversion is the idea that leads to investment losses move an investor's emotional needle more than equivalent investment gains, making investors reluctant to sell any investment that could further result in a loss (Doviak, 2016; Dolvin, Jordan, & Miller, 2015). The loss aversion shows the asymmetry of individual behavior in the treatment of losses compared to gains.

People raised in Asian cultures are trapped by behavioral biases more than in Western cultures (Bush, Lee, & Yates, 1997). Chandra (2008) in his study explored that investment decision-making is get influenced, largely, by behavioral factors like greed and fear, heuristics, cognitive dissonance, mental accounting, and anchoring. Kahneman and Tversky (1974) in their study stated that the anchoring bias consists of a cognitive shortcut that happens when the investors have to make estimates or decide about some amount and tend to adjust their answer based on some initially available value. Macgoun (1992) said that investor's behavior in decision making is widely influenced by the several non-rational factors like culture, emotion, ideology, religion etc. It has been argued that collectivist societies cause individuals to be trapped more by behavioral biases (Kim & Nofsinger, 2008). Odean (1998) found that overconfident investors have a tendency to believe that they are superior to others about the possibility of choosing the best stocks as well as the best time to join and exit the stock market. In Nepalese context, Kandariya (2012) examined the market reactions to tangible information and intangible information in Nepalese stock market. The study revealed that the capital structure and average pricing method influences the investment decisions most followed by political and media coverage, belief on luck and the financial education, and market movement trend. Rana (2013) in his study found that there is existence of disposition effect, loss aversion, behavior of shifting responsibility to avoid regret, blue-chip fallacy and crowd psychology among the sample investors. In his findings he further provided additional evidence from stock market of Nepal that investors do not always behave rationally while making stock investment decision.

Bakar and Chui Yi (2016) findings shows that overconfidence, conservatism and availability bias have significant impacts on the investors' decision making while herding behavior has no significant impact on the investors' decision making. Luong and Thu Ha (2011) in their study said that the herding individual will base his investment decision on the crowd actions of buying and selling, creating speculative bubbles phenomenon thus making the stock market to be inefficient. Although the herd is almost always wrong, this leads to excess volatility in the market. Furthermore, Block and Hirt (2012) in their study found that herding is more prevalent with institutional investor than with individual investors. Wamae (2013) in his study concludes that herding have positive significant impact on investment decision making. Lim (2012) in his study had examined the relationship between psychological biases, namely the overconfidence bias, conservatism bias, herding and regret and the decision making of investors in the Malaysian share market and found out that overconfidence, conservatism bias and regret have positive significant impacts on investors' decision making. But, herding behavior was found to have no impact on investors' decision making. Qureshi, Rehman and Hunjra (2012)

examined the effects of behavioral factors such as heuristics (representativeness, anchoring, gambler's fallacy, overconfidence, and availability bias) and risk aversion on the decision making of equity fund managers of Pakistan. The results concluded a positive and significant relationship exist between the behavioral factors and investment decision making.

Tripathy (2014) conducted study on the role of psychological biases on the cognitive decision making process of individual investors. The findings recommended that investors of Bhubaneshwar Stock Exchange are victims of psychological biases namely: anchoring, overconfidence, loss aversion and regret and hence their decision making are affected. Dao and Ton (2014) in his study argued that overconfident investors believe that they can gain more from the market by using their emotions, even if this is impossible. He in his study further found that 70% of the Vietnamese Stock Exchange investors are overconfident about managing their portfolio. In their study they found that overconfidence, optimism, herd behavior, psychology of risk and pessimistic have influence on investment decisions. Mokhtar (2014) in his findings concluded that cognitive errors and emotional biases have a significant impact in the investment decision result the irrational price performance and constant mispricing does not cover within the efficient framework. Sherpa (2016) in her study "Behavioral factors influencing individual investors decision making in Nepal stock exchange", found that there is significant and positive impact of loss aversion and mental accounting on investors behavior which revealed that higher the loss aversion and mental accounting, better would be the investment performance. Aggrawal and Kanagasabai (2018) in their study found that cognitive biases are the systematic errors that impact the way an individual makes judgments or decisions while making investments.

### III. Methodology

The research methodology generally describes various research methods, approaches and designs in detail with highlight of those used throughout the study. Descriptive and analytical research design along with regression analysis including reliability statistics (Cronbach Alpha) is used under this study. Both primary and secondary sources of data are taken to meet study objectives. Convenience sampling is used here as primary data and various journals, articles and websites were used as secondary source. The data are analyzed using the Statistical Package of the Social Science (SPSS, 20.0).

#### Population and Sample Selection

Total five broker office is located in the Butwal city and their entire clients are considered as population of the study. It is found that the potential clients who frequently visited branch and traded through branch resources and online platform are approximately around 3650 clients. For a population size of approximately 3650 clients the Sample Size is determined to be around 347 clients with 95% confidence level was identified using Yamane (1973) stated procedure. Self – administered questionnaire was constructed to collect the data from respondents. The questionnaire contains 40 question out of which 11 were designed to capture demographic information and remaining 29 were meant to obtain a measure of investor attitude and their preferences. These 29 were constructed based on likert scale basis, where the descriptors ranged from 1 (strongly disagree) to 5 (strongly agree) and investment decision was analyzed using three Likert scale form which ranges from 1 (Not at all) to 3 (Exclusively). The data is gathered through questionnaire and collecting the data through both direct interaction with share market investors as well as through mail questionnaire. Questionnaire is filled through both personal visits in the brokers' office and email as well. The email was sent after preparing the questionnaire in electronic form. Along with direct visit in broker office located in Butwal sub-metropolitan city, data was collected by distributing questionnaire electronically by the social sites and gmail. This all is done as per the convenience of respondents.

## IV. Results and Conclusion

### Reliability Analysis

The reliability and the internal consistency of data were checked by using Cronbach alpha. The reliability statistics were presented in table 2 and depicts that Cronbach's Alpha is 0.865 which implies internal consistency.

### Descriptive Statistics

Out of 347 respondents, participation of male investor (84.15%) was found higher than female investor (15.85%). Engagement of age group 18-30 years were found higher. Thus, it showed that youth were more risk - taker. The participation of married investors (53.61%) was found higher than unmarried (46.39%) individual investor. Result further showed that proportion of involvement of individuals who have gained master education is quite higher (42.36%) than of others then it is followed by individuals who have gained bachelor degree. In comparison to other fields (govt./public, private, self employed and others) the individuals whose profession belongs to private sectors are found more engaged in making investment in share market. Regarding the purpose of making investment i.e. savings, tax benefits, high investment growth and wealth creation. The result shows that the main reason for share market attraction is wealth creation. The result further showed that the majority of individual investors who have participated in the study have allocated 10% to 20% of their income in share market and in return majority of investors wants 15% to 20% of return on their investment.

**Table 1**

Biases, Effects on Investor and Consequences

Name of Bias	Key Effects on Investor	Consequence
Overconfidence	Too many trades, too much risk, failure to diversify	Pay too much brokerage and taxes, chance of high losses
Herding	Lack of individuality in decision making	Bubbles, and bubble bursts
Anchoring	Tendency to consider logically irrelevant price level as important in the process of decision making	Missed investment opportunities, or bad entry timing into the market
Regret Aversion	Selling winners too soon, holding losers too long	Reduced returns
Mental Accounting	Low or no diversification	Irrational and negative effects on returns
Loss Aversion	Fear to grab opportunity due to risk-averse nature	Good return projects slip from hand.

**Table 2**

## Reliability Statistics

Cronbach's Alpha	No of Items
0.865	29

**Table 3**

## Multiple Regression for Investment Decision based on Individual Investors Psychological Factor

Independent Variables	Unstandardized Coefficients		Standardized Coefficients			Statistical Inference	
	B	Std. Error	Beta	T	P value	F value*	
(Constant)	.996	.122		8.154	.000	R=0.577	28.317
X1	-.034	.029	-.059	-1.169	.243	R <sup>2</sup> =0.333	
X2	.091	.027	.189	3.385	.001*	Adjusted R <sup>2</sup> =0.321	
X3	-.015	.026	-.029	-.565	.572		
X4	.175	.028	.342	6.212	.000*		
X5	-.002	.027	-.003	-.066	.948		
X6	.149	.031	.277	4.840	.000*		

\* Significant at 0.05 level.

**Table 4**

## Multiple Regression for Individual Investor Biases on Investment Decision

Model	Unstandardized Coefficient		Standard Coefficient	T	Sig	Statistical Inference
	B	Std. Error	Beta			
(Constant)	.887	.125		7.077	.000	F= 61.980
Cognitive	.088	.044	.118	2.005	.046	R <sup>2</sup> =0.265
Emotion	.311	.042	.433	7.355	.000	Adjusted R <sup>2</sup> =0.261

**Table 5**

## Hypothesis of the Study and Their Results

	Hypothesis	P-values	Result
H1	Anchoring (Cognitive Bias) has significant effect on investment decision.	0.243	Rejected

H2	Herding (Cognitive Bias) has significant effect on investment decision	0.001 <sup>*</sup>	Accepted
H3	Mental Accounting (Cognitive Bias) has significant effect on with investment decision	0.572	Rejected
H4	Overconfidence (Emotion Bias) has significant effect on investment decision	0.000 <sup>*</sup>	Accepted
H5	Regret Aversion (Emotion Bias) has significant effect on investment decision	0.948	Rejected
H6	Loss Aversion (Emotion Bias) has significant effect on investment decision	0.000 <sup>*</sup>	Accepted
H7	Cognitive bias/behavior has significant effect on investment decision	0.046 <sup>*</sup>	Accepted
H8	Emotional bias/behavior has significant effect on investment decision.	0.000 <sup>*</sup>	Accepted

### Multiple Regression Analysis

The model for multiple linear regression is formed on the basis of theoretical framework formed in this study, given 'n' observations, is:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \dots + \beta_n X_n + e_i$$

#### Effect of Psychological Factors on Investment Decision

This study, attempted to analyze the effect of psychological factors on investment decision. Investment decision (Y) is dependent variable; anchoring (X1), herding (X2), mental accounting (X3), overconfidence(X4), regret aversion (X5) and loss aversion (X6) are predictor or independent variables. The results were summarized in table 3.

The table 3 shows that the combination of six independent together contributed to 57.7% effect on investment decision. The R<sup>2</sup> for the overall study suggests that there is a effect (0.333) on this six independent variables on investment decision. However, based on the adjusted R square value of 0.321, these elements contribute 32.1% to dependent variables. The F value (28.317) is significant which implies that the model is fit. From the table, it is found that herding, overconfidence and loss aversion give significant impact to Investment decision. It is clear that independent variable with higher level of  $\beta$  has higher impact on dependent variable. In this study result reveal that the factor of overconfidence ( $\beta = 0.175$ ,  $p < 0.05$ ) is the most influential factor followed by loss aversion ( $\beta = 0.149$ ,  $p < 0.05$ ) and herding ( $\beta = 0.091$ ,  $p < 0.05$ ) exerted a statistically significant positive influence on investment decision. Other independent variables did not show any significant contribution. The standardized coefficients beta column, gives the coefficients of independent variables in the regression equation.

$$Y = 0.996 - 0.034 X_1 + 0.091 X_2 - 0.015 X_3 + 0.175 X_4 - 0.002 X_5 + 0.149 X_6$$

This suggests that overconfidence, loss aversion and herding behavior play a significant impact on investment decision.

#### Impact of Individual Investor Biases on Investment Decision

Study further examined the effect of individual investor's biases on investment decisions. The results of analysis were summarized into table 4.

The table 4 shows that the two investment biases i.e. Cognitive Biases and Emotion biases independent together contributed to 51.5% effect on investment decision. The R<sup>2</sup> for the overall study suggests that there is an effect (0.265) on investment decision. However, based on the adjusted R square value of 0.261, these elements contribute 25.5% to dependent variables. The F value (61.980) is significant which implies that the model is fit. From this table, it is found that both psychological biases i.e. cognitive bias and emotion bias give significant impact to Investment decision. It is clear that independent variable with higher level of  $\beta$  has higher impact on dependent variable. In this study result reveal that the factor of emotion biases ( $\beta = 0.311$ ,  $p < 0.05$ ) have more influence on investment decision making of the individual investor than cognitive biases. Thus, it can be said on the basis of result of the analysis that emotions have greater influence that is if we see from the biases representative perspective it shows that overconfidence, regret aversion and loss aversion in together than the variables taken anchoring, herding and mental accounting as a representative of cognitive biases respectively. The regression model is:

$$Y = 0.887 + 0.88 X_1 + 0.311 X_2$$

This suggest that both cognitive and emotion bias has significant impact on decision making of the individual investor.

### Hypothesis of the Study and Their Results

In table 5, it shows that in case of psychological factors undertaken in this study, it is found that herding, overconfidence and loss aversion has significant relationship with individual investor investment decision in NEPSE. But other psychological factors i.e. anchoring, mental accounting and regret aversion have no significant relationship with investment decision of individual investor in NEPSE. Moreover, both cognitive and emotion bias have significant relationship with individual investment decision in NEPSE.

### Conclusion

In overall, this study discussed about the approaches of behavioral finance and has drawn the overall picture of behavioral factors influencing individual investment decision. On the basis of the findings of the study, it is very clear that psychological factors in the form of biases exist among the individual investors which influence their investment decision. To greater extent overconfidence, loss aversion and herding have greater influence in decision making of the individual investors. Thus, it is advisable for individual investors to make proper financial planning first, rather believing on rumors or airy news it will be better to make analysis of related organization by them and take decision accordingly.

The psychological biases are not necessarily leads to make investors irrational but it depends on how the investor processes the information available and floating in the market and how they act on such information. In order to be successful, an investor should understand his own investment psychology and this is only possible when individual investor's starts recognizing it and avoiding these psychological biases from their own experiences and thus by setting of realistic and achievable objectives through a diversifiable portfolio along with taking the proper consideration of all the mechanisms of financial market.

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