

Behavioral Biases And Their Impact On The Satisfaction Of The Investor: A Case Of Small Investors Of Lahore Stock Exchange

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Abstract

Pakistan stock markets are quite volatile and there have been some incidents like the crash of 2008 which call for research in this domain of knowledge so, in order to fill the gap this study tries to see whether behavioral biases exist among the small investors at Lahore Stock Exchange and how these behavioral biases play their role with regard to the investment outcomes of the investors and their relative satisfaction with the outcomes.

Survey methodology was used in the study using questionnaire as data collection tool. The study considers the behavioral biases of overconfidence, overtrading, disposition effect, herding behavior and anchoring and assesses their impact on the satisfaction of the investor with its investment results. Statistical Package for the Social Sciences version-16 (SPSS) was used for analysis and simple descriptive along with the regression analysis techniques are employed to draw inferences from the data.

Key words: Overconfidence, Overtrading, Disposition effect, Herd behavior, Anchoring.

Introduction

Stock market movements are considered a mysterious puzzle in the literature of investment finance as the models and theories proposed to predict such movement have been proved to be ineffective in one way or the other. Efficient Market Hypothesis which has dominated with regard to the pricing of securities in the stock market has also been challenged by behavioral finance proponents and discussion on the topic has moved from the rationality of the investors to the behavioral biases that could provoke irrationality among the investors and thus, market may deviate from its actual value.

Pakistan is a developing economy with Stock Markets which are relatively small as compared to the stock markets of the developed economies. Yet, Pakistani stock markets have performed well in the past and Karachi Stock Exchange was awarded 'Best Performing Stock Market of the Emerging Markets' - 'many times in the last decade. But this stock market is allegedly said to be volatile and in 2008 Pakistani stock markets witnessed the worst crash in their history which resulted in a loss of \$36.9 billion in just four months. KSE100 index also nosedived and lost more than 2/3rds of its point during that period. And now after five years, stock markets in Pakistan are setting new records and indexes have crossed many psychological barriers and all of this is despite rising inflation, sluggish economic growth, electricity problems, political uncertainty and ongoing war on terrorism. Stock markets provide a mechanism for channelization of the savings of people, pooling the individualized fund to create wealth and sharing of risk. Moreover, these markets act as a means of fund creation for the firms comparatively at a lower cost as compared to other sources of financing.

The importance of a well-established stock market in the development of the economy of any country is a well documented debate. Stock markets provide a mechanism for channelization of the savings of people, pooling the individualized fund to create wealth and sharing of risk. Moreover,

these markets act as a mean of fund creation for the firms comparatively at a lower cost as compared to other sources of financing. Stock markets provide two types of functions: the first is to bridge the gap between firms needing the capital investments and individuals willing to invest their savings and the second is to provide a market place for trading of the stocks of the firms in a way to ensure the liquidity of the investments made by the investors, while prices in the stock markets are determined by the demand and supply forces. Furthermore, stock markets ensure flow of the relevant information from corporate sector to the general public and investors, as to facilitate the investors for better evaluation and pricing of a particular stock. Theoretically, stock markets function in a way that every piece of relevant information is exhibited in the value of the stocks at a given point in time.

Apart from that development of stock market is considered as an indicator of the financial development of any economy which in turn has potential to accelerate economic prosperity of that economy by boosting domestic saving at public level and increasing quality and quantity of the investments. Economic growth is supported by the stock markets in a sense that these markets ensure that growing corporation get adequate long term finance at lower costs. Moreover, a developed stock market reduces the dependency of the corporations on the loan financing from the banks that in turn could reduce the risk of credit crunch and related financial difficulties for the economy. So proper functioning of the stock markets is very much important in a mechanized and systematic way in order to ensure that not only money of the individual investor is protected but also so that the business and financial sector could flourish and sustain economic development of the country.

Literature Review

This literature review provides an overview of the literature on the behavioral finance and related concept in order to provide a theoretical view and discussion on the phenomenon as to better grasp the issues of behavioral finance.

Overconfidence in the context of behavioral finance is defined as unrelenting over-valuation of one's own investment decision. Overconfidence increases as one makes a less accurate investment decision i.e. deviates from optimal investment opportunity and it decreases as one perceives investment to be more risky i.e. increase in uncertainty (Dittrich, Gütha, & Maciejovsky, 2005).

All the models which assume that overconfidence exists argue that overconfident traders trade excessively and males are more susceptible to overconfidence than females and overconfident males' trade more than overconfident females and get smaller returns as compared to females. This gender behavior is more prominent in singles (Barber & Odean, 2001).

(Johnson & Fowler, 2011), provided that over confidence is a decision making error which leads towards the over estimation of one's abilities and capabilities. It may be of value in some cases such as in sports, job performance, combat and mental health but in other cases it surely yields negative results such as wars, disasters, policy failures, financial collapse

and market bubbles. They argued that overconfident people tend to make more challenges, particularly in case of uncertainty, while people who are less confident may avoid conflict and that could also lead towards their failure in a particular conflict that might win. They also posited that people could not gauge their abilities in a true, unbiased and rational way and overconfidence persists in the society at larger particularly in finance, business and politics, despite the fact that this overconfidence occasionally leads towards disaster.

(Hall, Ariss, & Todorov, 2005) found that confidence increases as more information becomes available; They conducted some experiments and empirically proved that people tend to overlook statistics when favorable information is available to them but this reduces the accuracy of prediction giving other than expected results.

Psychological literature relates the illusion of control with the very common classes of egocentric biases like overconfidence and unrealistic optimism and it is basically assigning inappropriately higher probability to chances of your success than actual probability would warrant. Feelings of skill and competence work as the major sources for the illusion of control to exist. However, there are situations where illusion of control is not as persistent (Fellner, 2004).

A person who is self-deceiving himself has two differing views about anything. He believes that both exist at the same time. He is ignorant to the fact that there is only one viewpoint about anything whether it is or it is not but he is motivated to stick to what he thinks. It has similarity with the interpersonal deception where one intentionally deceives others. The point highlighted by interpersonal analogy is difference between a belief which is reached by error and the one which is intentionally made to be believed (Gur & Sackeim, 1979).

Anchoring is an intuitive approach that helps people save time spend in calculations especially for investment purposes. People promptly respond to a situation they know they have previously faced. These responses are determined by themselves or adapted from some outside resource. There are some situations where people think that they have some sort of expertise regarding some issue and so rely on their own and where they feel they have some weakness they tried to avoid the situation and respond less. In both extremes there is a higher level of anchoring (Epley & Gilovich, 2010).

Investors disregard their own information and start following the other investors' investment decisions taken by them in some specific time. By monitoring their actions the presence and impact of herding can be observed (Cipriani & Guarino, 2005).

Problem statement

This study aims at exploring the behavioral biases of the small investors in Lahore Stock Exchange in order to determine the impact of these behavioral biases on the investment performance and relative satisfaction of the investors with that performance.

Research Design

Participants:

The study aimed to assess the investment behavior of the small investors at Lahore Stock Exchange. Small investor in this regard is an investor who is not an institutional investor and whose primary activity is not stock trading. Thus, all the small investors who trade at Lahore Stock Exchange constitute the population of the study. Snowball sampling was used in this study and a sample of 180 respondents was drawn. The researcher personally visited the Lahore Stock Exchange and visited stock brokers and requested them to refer the researcher to investors after explaining the purpose of the study to the brokers.

Data Collection:

Survey methodology mostly relies on one of the two basic tools of data collection i.e. questionnaires and interviews. The questionnaire was adopted from Shaukat (2011) who conducted the same type of study on Karachi Stock Exchange.

Data Analysis:

In order to provide description of the sample characteristics i.e. demographics and investment preferences, frequency distribution tables along with the bar charts are used in the study. Description on the variables of the study i.e. overconfidence, herding behavior, anchoring and satisfaction with trading is provided through mean and standard deviation except disposition effect from which again frequency distribution and graph is used as a means of description. After description of the variables regression is used to test the relationship among the variables.

Two regressions are run; the first regression assesses the impact of overconfidence on trading volume of the respondents as to whether overconfident respondents have tendency to overtrade or not. The second regression predicts the investment satisfaction of the respondents with their investment results through predictors of overtrading, herding behavior, anchoring and disposition effect.

Instrumentation:

The questionnaire was constructed in close ended format in which main behaviors of the investors which are over confidence, herding behavior, anchoring and satisfaction were

measured using five points. The variable of over confidence contained 9 items and had a reliability score of .91 which was calculated using Cronbach's Alpha. The second variable of the study was herding behavior which had three items and Cronbach's Alpha's value of .80. The third variable anchoring also had three items and its reliability score using Cronbach's Alpha was .67. The scale is said to be reliable if its value of Cronbach's Alpha surpasses value of .6. So, all these three scales were reliable. The main dependent variable of the study was satisfaction of the investor with trading results which was measured directly through one statement asking respondents to provide their satisfaction with regard to their investment activity on a 5 point Likert scale. Disposition effect was measured by asking respondents if in case of uncertainty whether they prefer to sell stock which has yielded a profit or the stock which has yielded a loss. Trading activity was measured by asking the respondents to provide their trading volume on predefined categories constructed through class limits. Apart from these variables and demographical and investment characteristics section was also included in the study. The demographical section asked respondents to provide their demographical details such as gender, age, education, income and occupation while the investment section asked respondents about their investment preference for company type if it is multinational or national, trade volume and amount of investment in the stocks. The questionnaire was adopted from Shaukat (2011) who conducted the same type of study on Karachi Stock Exchange.

Description of behavioral biases of the respondents

This part of the analysis provides the description of the variables of the study which represent the behavior of the respondents in the stock market. These behaviors are related to the disposition effect, over confidence, herding behavior, anchoring and satisfaction of the respondents with the results. Following is the discussion related to these behaviors. Disposition effect is discussed with the help of frequency distribution table and bar chart while remaining behaviors are explained by the descriptive of mean and standard deviation.

Table 1 below provides the results of the investor's tendency to fall under disposition effect which propose that in a period of uncertainty, investors are likely to sell securities which have yielded a profit and retain those that have yielded a loss, thus realizing the gains and avoiding recognizing the losses. Respondents were asked if in a period of uncertainty which security would they prefer to sell and almost half of the respondents replied that they would like to sell a security which

Table 1: Disposition Effect

	Frequency	Percent	Cumulative Percent
The one that yielded a loss	40	49.4	49.4
The one that yielded a profit	41	50.6	100.0
Total	81	100.0	

have yielded a profit and retain those that have yielded a loss, thus realizing the gains and avoiding recognizing the losses. Respondents were asked if in a period of uncertainty which security would they prefer to sell and almost half of the respondents replied that they would like to sell a security which has yielded a profit (41 respondents) while the other half of the respondents (40 respondents) said that they would like to sell the security which yielded a loss. Although half of the respondents show tendency of disposition effect, but overall the results are mixed. This would further be probed in the following section while establishing the satisfaction of the respondents with regard to their investment results as whether disposition effect somehow contributes towards the dissatisfaction of the respondents or not. The following graph provides the pictorial representation of the behavior of the respondents with regard to disposition effect.

Figure 1: Disposition effect

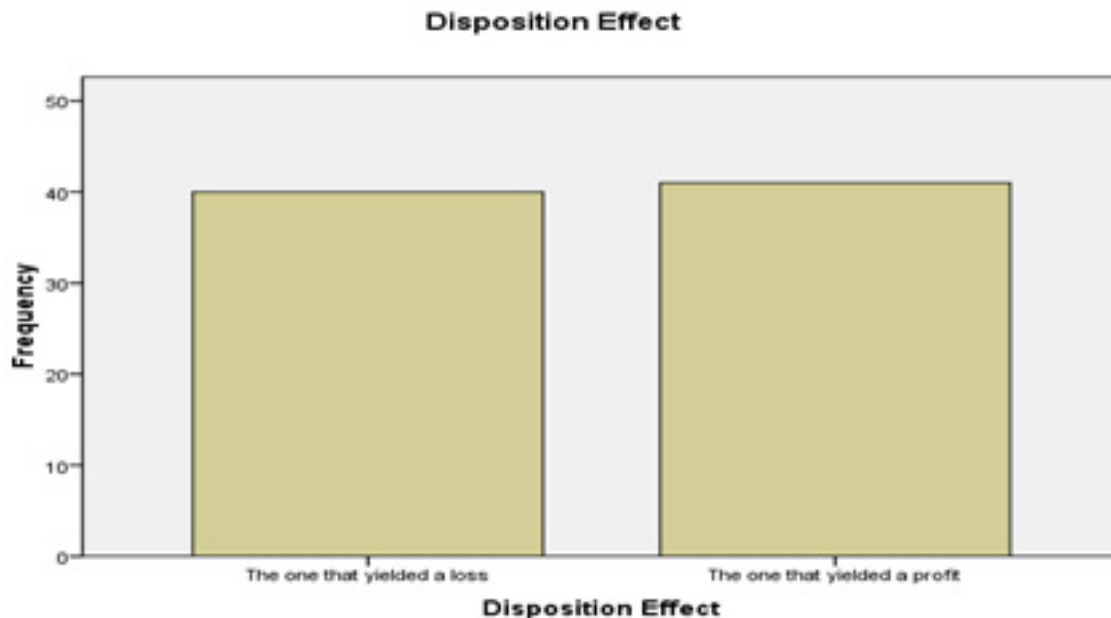


Table 2: Behavioral biases of respondents

	N	Mean	Std. Deviation
Over Confidence	81	3.4883	.70704
Herding Behavior	81	3.5432	.79834
Anchoring	81	3.4815	.64118
Satisfaction with Trading Results	81	3.0000	.93541
Valid N (list wise)	81		

Table 2 provides descriptive statistics for the behavioral biases and investment satisfaction of the respondents. These biases also represent the variables of the study and were measured on a five points Likert scale. Overconfidence is the first behavioral bias of the respondents which entails that small investors overestimate their abilities or reliability of the information so as to make wrong investment decisions. The mean value of the over confidence is 3.4883 which is above 3 indicating that on average investors in Lahore Stock Exchange are moderately overconfident. The standard deviation for this variable was .70704 which indicates towards the inter-response variability of respondents. The second behavioral bias is related to the herding behavior which is a tendency of the respondents to chase trends in the stock market. Variables of herding behavior yielded a mean value of 3.5432 along with a standard deviation of .79834 indicating that trend chasing is also prevalent among the small investors in Lahore Stock Exchange. The next behavioral bias of small investors which is included in the study is anchoring which is a tendency of the respondent to make investment decisions and judgments without considering proper information on bases of some rule of thumb or criteria which is not rational. Mean value for anchoring is 3.4815 along with standard deviation of .64118. The mean for anchoring is above 3 which indicates that on average small investors in Lahore Stock Exchange fall to the anchoring behavior and make investment decisions on wrong and irrational criteria. Investors included in the study were also asked to rank their overall satisfaction with their investment performance on a scale of 1 to 5. The mean for this variable was found to be an exact

3 along with a standard deviation of .93541 which entails that in the average investors of Lahore Stock Market are unsure as to whether their investments in the Lahore Stock Exchange have performed well or not. This would play out as main dependent variable of the study which would be probed as to see whether behavioral biases have anything to do with the investment performance and relative satisfaction of small investors.

Impact of over-confidence on trading behavior

This part of the analysis provides the impact of overconfidence on the trading behavior of the respondents. Theory suggested a positive impact of overconfidence on the trading of the investors and investors who are more confident are said to have a behavior of overtrading. Following regression analysis provides evidence to this phenomenon:

Table 3: Model summary: Impact of overconfidence on trading behavior:

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.532 ^a	.283	.274	.82125

a. Predictors: (Constant), Over Confidence

Table 3 provides the model summary for the impact of overconfidence on the trading behavior of the respondents. The model yielded a R Square value of .283 which entails that almost 28% of variation in the trading behavior of investors is predicted by the overconfidence; Adjusted R Square of the model is .274.

Table 4: ANOVA: Impact of overconfidence on trading behavior:

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	21.039	1	21.039	31.194	.000 ^a
	Residual	53.282	79	.674		
	Total	74.321	80			

a. Predictors: (Constant), Over Confidence

b. Dependent Variable: Volume of Trade

Table 4 provides the ANOVA table which entails the goodness of fit of the model. F-statistic as provided by ANOVA table is 31.194 which indicated that the model is a good fit at 1% level of significance.

Table 5: Coefficients: Impact of overconfidence on trading behavior:

Model		Unstandardized Coefficients		Standardized Coefficients	
		B	Std. Error	Beta	t
1	(Constant)	.124	.462		.269
	Over Confidence	.725	.130	.532	5.585

a. Dependent Variable: Volume of Trade

Table 6 provides the regression results of the impact of overconfidence on trading behavior of the respondents. Volume of trade is a dependent variable of the model and overconfidence is a dependent variable. Beta coefficient of overconfidence for volume of trade is .752 along with a t-statistic of 5.585 which indicates that there is a positive and significant impact of overconfidence on volume of trade. Thus, this analysis establishes that overconfidence causes investors to over trade in the Lahore Stock Market.

Impact of behavioral biases on the satisfaction with investment results:

This part of the analysis analyzes the impact of behavioral biases i.e. disposition effect, herding behavior, anchoring behavior and overtrading on the satisfaction of investors with their satisfaction for their investment results. The following regression analysis provides evidence on that:

Table 6: Model summary: Impact of behavioral biases on satisfaction with investment results:

R	R Square	Adjusted R Square	Std. Error of the Estimate
.650 ^a	.423	.392	.72928

Table 6 provides model summary for the impact of behavioral biases on the satisfaction with investment results of respondents. The independent variables considered in the model are disposition effect, volume of trade, herding behavior and anchoring. R Square of the model is found to be .423 which indicates that more than 40% of the variation in the satisfaction with investment results of the small investors is driven by the independent variables which are previously mentioned. Adjusted R Square of the model is .392.

Table 7: ANOVA: Impact of behavioral biases on satisfaction with investment results:

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	29.579	4	7.395	13.904	.000 ^a
Residual	40.421	76	.532		
Total	70.000	80			

a. Predictors: (Constant), Disposition Effect, Volume of Trade, Herding Behavior, Anchoring

b. Dependent Variable: Satisfaction with Trading Results

Table 7 provides the ANOVA of model which predicts satisfaction of small investors with trading results through disposition effect, volume of trade, herding behavior and anchoring. ANOVA provides the measure of goodness of fit of model. F-statistic of the overall model is 13.904 which indicate that the model is a good fit on 1% level of significance.

Table 8: Coefficients: Impact of behavioral biases on satisfaction with investment results:

Model	Unstandardized Coefficients		Standardized Coefficients		Sig.
	B	Std. Error	Beta	T	
1 (Constant)	3.912	.463		8.447	.000
Volume of Trade	-.568	.098	-.585	-5.795	.000
Herding Behavior	-.218	.223	-.186	-.978	.331
Anchoring	.472	.286	.324	1.653	.103
Disposition Effect	-.542	.174	-.291	-3.110	.003

a. Dependent Variable: Satisfaction with Trading Results

Table 8 provides coefficients for the model predicting dependent variable of satisfaction with trading results through independent variables of volume of trade, herding behavior and anchoring and disposition effect. Volume of trading showed a beta coefficient of -.568 with t-statistic of -5.795 entailing that volume of trading has a negative impact on the satisfaction of investors with their trading results. This indicates that overtrading which is caused by the overconfidence could actually lead towards the

dissatisfaction of the investors with regard to their perceptions on the trading activity. The second behavioral bias of herding behavior which was included as a predictor of satisfaction with stock performance provided a beta coefficient of -0.218 along with a t-statistic of -0.978 indicating towards a negative but insignificant impact of the herding behavior on the satisfaction of the small investor with regard to their stock performance. The third behavioral bias and independent variable of the study was anchoring which provided a beta coefficient of 0.472 along with a t-statistic of 1.653 indicating that the impact of anchoring on the satisfaction of investors with their trading results is positive but insignificant. The fourth and last behavioral bias and independent variable of the study is the disposition effect which produced a beta coefficient of -0.542 along with a t-statistic of -3.110 for satisfaction of investors with trading result, thus; indicating a negative and significant impact of the disposition effect on investor satisfaction on stock performance. This overall entails that two variables i.e. overtrading and disposition effect lead towards the dissatisfaction of the small investors with regard to their investment performance in a significant manner while variables of herding behavior and anchoring do not significantly predict investor satisfaction for their investment activity.

Conclusion

Lahore Stock Exchange is the second largest stock market of Pakistan and is inherent of all the characteristics of a small stock market of a developing economy. The stock market crash of 2008 left many questions on the efficiency and mechanism of the stock markets in Pakistan. These questions and issues are also consistent with the border questions raised to challenge the theoretical assumptions of the stock markets are investors trading in the stock market really rational? This evidence provides that they are not, at least not of that magnitude that is assumed by the theoretical assumptions of the Efficient Market Hypothesis and related theories. As a result, behavioral dimension of the finance industry has emerged which provides explanations to the irrational behaviors of the investors which cause anomalies in the stock markets. This study in also conducted in this context in order to see if the small investors investing at Lahore Stock Market exhibit some sort of behavioral bias and whether this behavioral bias leads towards the negative satisfaction of the respondents with regard to their investment performance or not.

This study considers behavioral biases of overconfidence, overtrading, herding behavior, anchoring and disposition effect for assessing impact of these variables on the investment satisfaction of the respondents in Lahore Stock exchange using survey methodology and using questionnaire as data collection tool. 81 respondents responded to the questionnaires which are the base of the empirical analysis used in this study.

On the border context this study confirms the prevalence of behavioral biases among the small investors of Lahore Stock exchange. Small investors are prone to overconfidence which also leads towards overtrading behavior. There is also evidence that people indulge in herding behavior and anchoring. Some

evidence on the disposition effect was also found in the study. Overall, only variables of overtrading and disposition effect have a negative and significant impact on the satisfaction of the investors with regard to their investment performance. Other variables of herd behavior and anchoring did not yield a significant relationship in this regard. This might be the general outlook of the market which is performing very well at the current time, so trend chasing or anchoring might yield some gains for the investors at the moment. But overtrading and disposition effect are different biases as overtrading leads towards the significant transaction costs which would actually reduce the profits or enhance the losses of the investors and disposition effect does not have anything to do with the trends as it represents the tendency of the investors to sell a profit yielding security and retain a security which has lost its value.

Recommendations

This study provides the following recommendations to the small investors in order to improve their investment strategy and be more rational to avoid the dissatisfaction from their investment results:

- Information is the key to evaluate the stock and the stock buy or sell decision could only be triggered in case of when an investor has reliable information and has reflected and analyzed that information in an appropriate manner.
- Investors should avoid overtrading as overtrading yields significant trading costs which could actually be the reason for the losses of the investors.
- Proper diversification of portfolio among different risk bearing securities could reduce the chances of losing all the eggs of investors.
- The Investor should not mourn on the sinking costs and losses and should realize losses and invest in a better security in case of uncertainty so that he does not fall prey to the disposition effect.
- Investors should not use rule of thumb as a principal investment decision making criteria and ensuring of proper evaluation of every stock should be done in order to purchase that stock.
- Chasing trends can be dangerous not only for the individual investor but also for the whole of the market.

Following are policy implications in this regard:

- Proper mechanism should be devised in the stock market to eliminate or mitigate the impact of behavioral biases of the investors in Pakistani stock markets.
- Herding behavior and trend chasing should particularly be controlled in order to ensure long term sustainability and growth of the stock market.
- Some mechanism of bridge liquidity as specialists in international markets should be devised to sustain actual levels of the markets in periods of uncertainty.
- Stock markets should publish analysis reports along with other supporting information that provide guidelines to the investors to evaluate stocks in an accurate manner.

Limitations & Future research

This research uses questionnaire design and focuses more on the qualitative aspect of the study and takes into account only some behavioral biases. A detailed investigation using quantitative proxies could be more revealing in this regard. Moreover, this study is conducted at a time when the stock markets in Pakistan are flourishing in all respect so this study may not represent the negative behaviors of the investors which are more prominent when the market is going down so a comparative study in this regard could be useful using longitudinal design which may compares the behaviors of investors with reference to different points in time.

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