

Determinants of Retail Investors Behavior and its impact on Investment Decision

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ABSTRACT

Behavioral finance is an emerging science, and a relatively new and developing field of academic study that exploits the irrational nature of investors. Most of investment decisions are influenced to some extent by our prejudices and perceptions that do not meet the criteria of rationality. Behavioral finance concentrates on irrational behavior that can affect investment decision and market prices. The rationale of this manuscript study is to analyse the determinants of individual investor behavior in Pakistani stock market. The study used primary data which was collected through questionnaire. Questions related to investors' attitudes and determinants of investor behavior were included using a five point scale. Data collected were analyzed through SPSS and spread sheet. Analytic hierarchy process (AHP) is used to find the relative significance of different behavioral qualities of the investors in contributing to overall investment behavior. AHP is one of multi Criteria decision making method to derive ratio scales from paired comparisons. The findings suggest that the dimension of overconfidence plays an important role in the determination of overall behavior.

Keywords: behavior finance; investment decision; overconfidence; risk preference; optimism

1. INTRODUCTION

Pakistani stock market is considered to be highly unpredictable, susceptible and reactive to unexpected shocks and news it takes no time to bang the market tricks. However at the same time Pakistani stock market is flexible and recovers rapidly after shocks. The role and significance of individual investors and their trading behavior in Pakistani stock market is also very crucial. Disparate institutional investors, individual investors are assumed to be less informal, have psychological biases and also through of as the recognizable noise traders in the stock prices. With this perception regarding the individual investors, mainstream of trading strategies and stock market policies are planned and focused to their institutional counterparts thereby ignoring the individual investor's interests to some degree. The rationale of this manuscript study is to analyse the determinants of individual investor behavior in Pakistani stock market.

2. OBJECTIVE OF THE STUDY

The purpose of the study is in the direction of identifying the determinants of investment behavior and their relative importance in shaping the behavior of individual investors.

2. 1. Variables of the study

Independent variables: Investor's behavior of which determinants are:

- a) Overconfidence.
- b) Investor optimism
- c) Investor's involvement
- d) Risk preference

Dependant variable: Investment decision

2. 2. Theoretical background

Behavioral finance is an emerging science, and a relatively new and developing field of academic study that exploits the irrational nature of investors. Most investment decisions are influenced to some extent by our prejudices and perceptions that do not meet the criteria of rationality. Behavioral finance concentrates on irrational behavior that can affect investment decision and market prices. It tries to improve understanding and explaining how emotion and cognitive errors influence investors and the decision-making process. Many researchers consider that the study of psychology and other social sciences shed considerable light on the efficiency of financial markets as well as help to explain stock market volatility and other anomalies. The role of behavioral finance is not to diminish the primary work that has been done by proponents of efficient market hypothesis. Rather, it is to examine the importance of tranquil unrealistic behavioral assumptions and make it more realistic. It does this by adding more individual aspects of the decision-making process in financial markets. Without these contributions of behavioral finance, definite aspects of financial markets cannot be understood. Despite the importance of individual's investment decisions, we know little about the factors that influence them. Finance research has often ignored the individual investor's decision making process when making financial investment decisions. There is a need to develop behavioral paradigm to probe the determinants of investor behavior and their impact on individual investor's financial decision making outcomes. For the purpose of this research, we adopted an approach favored by traditional Economist. The current study examines behaviors and biases of individual investors' that Behavioral Finance Micro (BFMI)

2. 3. Research Questions

This study will help to answer the following queries:

1. Does overconfidence behavior play an important role in investment decision?
2. Does investor keep optimistic views about future stock-market condition?
3. Is the investor involvement an outcome of investment objective?
4. Is risk preference an outcome of investment objective?

2. 4. Literature Review

The proposal that has dominated finance is Efficient Market Hypothesis (EMH). There are three basic theoretical pillars that form the basis of the EMH. The first and most noteworthy is that investors are rational. Secondly it is based on the idea that everyone takes

suspicious account of all accessible information prior to making investment decisions. It is linked to internal consistency. The third principle is that the decision maker always pursue self-interest.

Behavioral finance is a branch of the markets that draw on psychology, throwing more light on why people purchase or sell the stocks and even why they do not buy stocks at all. This research on investor behavior helps to explain the various 'market anomalies' that confront standard theory. Behavioral finance encompasses research that drops the conventional assumption of expected utility maximization with rational investors in an efficient market. The two building blocks of behavioral finance are *cognitive psychology* and the *limits to arbitrage* (Ritter, 2003). Cognitive refers to how people think and the limit to arbitrage when markets are inefficient.

Much of the basic theories of behavioral finance concern with a series of concepts under the general heading of 'bounded rationality', associated with Herbert A. Simon (1974, 1983). It relates to cognitive restrictions on decision-making. As a result, human behavior is made on the basis of simplified procedures or *heuristics* (Tversky and Kahneman, 1974). This is steady with the study done by Slovic (1977) on investment risk-taking behavior. He found that, man has limitations as a processor of information. People also tend to be overreact to information (De Bondt and Thaler, 1985, 1989).

Shiller (1999) surveys some of the basic ideas in behavioral finance, including Prospect theory, Regret theory, Anchoring, and Market over- and under-reaction. *Prospect theory* introduced by Kahneman and Tversky (1979, 1981, 1986) suggests that people respond differently to equivalent situations depending on whether it is presented in the perspective of a loss or a gain, "Regret theory" (Larrick and Boles, 1993) is another theory that deals with people's emotional reaction to giving made a part of judgment. *Anchoring* (Yates, 1990), is a phenomenon in which, in the absence of better information, investors assume current prices are right. *Market over- or under-reaction* (De Bondt and Thaler, 1985), is the consequence of investors putting too much weight on recent news at the expense of other people show overconfidence. They tend to become more optimistic when the market goes up and more pessimistic when the market goes down. Hence prices fall too much on bad environment.

It has long been recognized that the source of judgment and decision biases, such as time reminiscence, and attention are limited, human information processing capacity is finite. Therefore, there is a need for imperfect decision-making procedure, or most familiar psychological biases can be viewed as outgrowths of heuristic simplification, self-deception, and emotion based judgment. Study done by Kent, Hirshleifer and Subrahmanyam (2001) had found the evidence for systematic cognitive errors made by investors and these biases affect prices.

According to Kent, et al. (2001). The most frequent behavior that most investors do when making investment decision are (1) Investor frequently do not participate in all asset and security categories, (2) Individual investors demonstrate loss-averse behavior, (3) Investors use past performance as gauge of future performance in stock purchase decisions, (4) Investors trade too aggressively, (7) Investors behave parallel to each other, and (8) Investors are influenced by historical high or low trading stocks.

3. RESEARCH METHODOLOGY

Data for the study is secondary collected through online survey report and different websites in the form retail stock market investors. Questions related to investors profile and determinants of investor behavior were included using a five point scale. Data collected were

analyzed through SPSS and spread sheet. Analytic hierarchy process (AHP) is used to find the relative significance of different behavioral qualities of the investors in contributing overall investment behavior. AHP is one of multi Criteria decision making method to derive ratio scales from paired comparisons.

The study identified four broad dimensions of investor behavior that could have an impact on their investment decisions (Overconfidence, Investor Optimism, Investor Involvement and Risk Preferences) that were further divided into different factors and respondents were asked to rate each factor. On the basis of the overall responses of the investors and the ratings that they assign to the factors of the each dimension AHP determine the relative weights for each dimension of the investment behavior and priorities them in terms of their level of contribution in the formation of behavior of the investment behavior and priorities them in terms of their level of contribution in the formation of behavior of the investor.

4. ANALYSIS AND INTERPRETATION PROFILE OF RESPONDENTS

The analysis was based on the data collected from respondents using questionnaire. The various demographic and economic factors regarding the respondents are as follows:

The gender ratio of respondents: Of the total respondents, 75.64 % were males and 24.36 % were females.

The age group distribution of respondents: Age of respondents varied between 20 to 70 years. It was aimed to include investors from all categories so that the pattern will get an equitable distribution. Majority of respondents were under 30-40 year age group (34.62 %) followed by 40-50 year age group (28.21 %) Private organizations (33.33 %) Self employed individuals (24.36 %) Business (17.93 %) and Agricultural background (6.41 %).

The education level distribution of respondents: The majority of investors is having a Bachelors degree (52.56 %). It's clear that most of the respondents in this study have good educational background.

The investment experience of respondents: From the analysis of investment experience of investors. It was found that majority of respondents have an experience of 5-10 years (41.02%), followed by investors having an experience of less than 5 year (39.74 %).

Stock monitoring behavior of respondents: Of the total respondents, 87.18 % daily monitor their investments in stocks and they look for short term profits from favorable price movement, 10.26 % of the investors monitor their investment weekly and the rest 2.56 % of the investors monitor monthly. Investors with different level of investments are observed to have significantly different monitoring behavior. The investors with high amount of investment and those with short horizon tend to monitor their investments more frequently when compared to those with low amount of investments and long term investors.

Investment objectives of respondents: By analyzing the responses it could be inferred that 64.15 % of the investor's objectives is to take benefit from the daily price fluctuations. 11.54 % of the investors make their investment to earn steady income in the form of dividends. 26.93 % of the investors aim for growth objectives. While rest of the investors have multiple investment objectives.

5. ANALYSIS OF DETERMINANTS OF INVESTOR BEHAVIOR FREQUENCY ANALYSIS OF OVERCONFIDENCE

Table 1. Frequency Results for Overconfidence.

Question	S. D(1)	D(2)	N(3)	A(4)	S. A(5)	Total
I am confident of my ability to do better than others in picking stocks (Stock Picking Ability)	2 (2.56 %)	12 (15.38 %)	15 (19.24 %)	17 (21.80 %)	29 (41.04 %)	75 (100 %)
I am fully responsible for the results of my investment decisions. (Self-Contorl)	4 (5.13%)	13 (16.67 %)	14 (17.95 %)	18 (22.78 %)	29 (37.47 %)	78 (100 %)
I have complete knowledge of stock market (Market Knowledge)	3 (3.85 %)	11 (14.10 %)	14 (17.95 %)	17 (21.79 %)	30 (38.46 %)	78 (100 %)

The frequency results of these three statements tell reveals that investors have high level of Overconfidence as the high level of confidence on their Stock Picking Abilities, high level of Self Control and greater confidence of having Market Knowledge as majority of investors gave rating of 4 and above in case of each parameter.

5. 1. AHP Analysis of Overconfidence

Table 2. Pair wise Comparison Matrix for Overconfidence.

Feature	Stock Picking Ability	Self Control	Market Knowledge
Stock Picking Ability	1.00	4.00	2.00
Self Control	0.25	1.00	0.50
Market Knowledge	0.50	2.00	1.00

Table 3. Rank Matrix for Overconfidence.

Feature	Stock Picking Ability	Self Control	Market Knowledge	Average
Stock Picking Ability	0.57	0.57	0.57	0.57
Self Control	0.14	0.14	0.14	0.14
Market Knowledge	0.29	0.29	0.29	0.29
Total	1.00	1.00	1.00	1.00

Table 4. Rank Matrix for Overconfidence.

Feature	%	Rank
Stock Picking Ability	57 %	1
Market Knowledge	29 %	2
Self Control	14	3

The Analytical Hierarchical Process determined the relative weights of each factor of the dimension of Overconfidence. In the overall dimension of Overconfidence the most prominent factor was the Stock Picking Ability that result in successful investment, (approx. 57 %) followed by Market Knowledge with approximate weights of 29 % and Self Control ability with 14 %

6. FREQUENCY ANALYSIS OF INVESTOR OPTIMISM

Table 5. Frequency Results for Optimism.

Question	S. D(1)	D(2)	N(3)	A(4)	S. A(5)	Total
Do you plan to increase my investment in the stock market in next 12 months (Increased Investments)	22 (28.20 %)	16 (20.50 %)	8 (10.27 %)	13 (16.67 %)	19 (24.36 %)	78 (100%)
The prices of stocks will increase in next 12 months (price Increase Expectation)	16 (20.51 %)	15 (19.24 %)	11 (14.10 %)	15 (19.24 %)	21 (26.32 %)	78 (100%)
If the BSE index drops by <3% tomorrow. I would suggest that it will recover most of its losses in a few days (Index Recover)	16 (20.51 %)	10 (12.82 %)	12 (15.39 %)	20 (25.64 %)	20 (25.64 %)	78 (100%)

By analyzing the responses the overall Optimism among the investors is low but 51.38 % of investors do believe that even if the market falls, it will recover within a few days.

6. 1. AHP Analysis of Optimism

Table 6. Pair wise Comparison Matrix for Optimism.

Feature	Increased Investments	Price Increase Expectation	Index Recovery
Increased Investment	1.00	0.33	0.20
Price Increase Expectation	3.00	1.00	2.00
Index Recovery	2.00	0.50	1.00

Table 7. Normalized Matrix for Optimism.

Feature	Increased Investments	Price Increase Expectation	Index Recovery	Average
Increased Investments	0.17	0.16	0.14	0.16
Price Increase Expectation	0.50	0.54	0.57	0.54
Index Recovery	0.33	0.27	0.29	0.30
Total	1.00	1.00	1.00	1.00

Table 8. Rank Matrix for Optimism.

Feature	%	Rank
Price Increase Expectation	54 %	1
Index Recovery	30 %	2
Increased Investments	16 %	3

6. 2. Interpretation

The second determinant Investor Optimism was measured in terms of investor's outlook of the stock market. AHP analysis assigned the highest rank to the factor Price Increase Expectation (54 %) followed by Recovery of the Index 30 %. Only 16 % of respondents are interested in Increasing Investments. On the whole the optimism among the investors is very low.

7. FREQUENCY ANALYSIS OF INVOLVEMENT

Table 9. Frequency Results for Involvement.

Question	S. D(1)	D(2)	N(3)	A(4)	S. A(5)	Total
I am actively involved in trade activity (Trade Activity)	2 (2.56 %)	1 (1.28 %)	19 (24.36 %)	21 (26.92 %)	35 (44.88 %)	78 (100 %)
I make investment for making money quickly (Quick Money)	7 (8.97 %)	4 (5.13 %)	13 (16.67 %)	29 (37.18 %)	25 (32.05 %)	78 (100 %)

Analyzing responses it could be inferred that 69.23% of the respondents are involved in trade activity to make Quick Money.

7. 1. AHP Analysis of Involvement

Table 10. Pair wise Comparison Matrix for Involvement.

Feature	Trade Activity	Quick Money
Trade Activity	1.00	2.00
Quick Money	0.50	1.00

Table 11. Normalized Matrix for Involvement.

Feature	Trade Activity	Quick Money	Average
Trade Activity	0.75	0.75	0.75
Quick Money	0.25	0.25	0.25
Total	1.00	1.00	1.00

Table 12. Rank Matrix for Involvement.

Feature	%	Rank
Trade Activity	75 %	1
Quick Money	25 %	2

To measure the overall Involvement of Investors in stock trading two factors namely level of Trade Activity and motive towards making Quick Money were analyzed. On the basis of responses for the investors AHP determined Trade Activity has the highest weights approximately 75 % while the attitude of making Quick Money weights 25 % approx.

7. 2. Frequency Analysis of Risk Preferences/Attitudes

Table 13. Frequency Results for Risk Preferences/Attitudes.

Question	S. D(1)	D(2)	N(3)	A(4)	S. A(5)	Total
I make riskier investments for maximum gain (Enjoyment from Risky Trading)	30 (38.46 %)	17 (21.80 %)	8 (10.26 %)	12 (15.38 %)	11 (14.10 %)	78 (100 %)
I usually invest in companies I am familiar with (Familiarity Bias)	13 (16.67 %)	9 (11.54 %)	5 (6.41 %)	2 (2.69 %)	30 (38.46 %)	78 (100 %)
I am a risk taker (Risk taking)	11 (14.10 %)	13 (16.67 %)	7 (8.98 %)	21 (26.92 %)	19 (24.36 %)	78 (100 %)
I invest mostly in companies with stable expected returns (Stable Returns)	3 (3.84 %)	7 (8.98 %)	13 (16.67 %)	26 (33.33 %)	29 (37.18 %)	78 (100 %)

7. 3. Interpretation

By considering the various factors the various factors collectively it could be inferred that majority of investors are risk averse and they do not prefer making riskier investments. Rather they prefer investing in familiar companies that give stable returns.

Table 14. Pairwise Comparison Matrix for Risk Preferences/attitudes.

Feature	Enjoyment from Risky Trading	Familiarity Bias	Risk Taking	Stable Returns
Increased Investments	1.00	0.24	0.33	0.33
Price Increase Expectation	4.00	1.00	3.00	2.00

Index Recovery	3.00	0.33	1.00	0.50
Total	3.00	0.50	2.00	1.00

Table 15. Normalized Matrix for Risk Preferences/attitudes.

Feature	Enjoyment from Risky Trading	Familiarity Bias	Risk Taking	Stable Returns	Avoidance of Uncertainty
Enjoyment from Risky Trading	0.09	0.12	0.05	0.09	0.09
Familiarity Bias	0.36	0.48	0.47	0.27	0.46
Risk Taking	0.27	0.16	0.16	0.13	0.18
Stable Returns	0.27	0.24	0.32	0.26	0.27
Total	1.00	1.00	1.00	1.00	1.00

Table 16. Rank Matrix for Risk Preferences/attitudes.

Feature	Weight %	Rank
Familiarity Bias	46 %	1
Stable Returns	27 %	2
Risk Taking	18 %	3
Enjoyment from Risky Trading	9 %	4

ANALYSIS reveals that investors have greater fear of un-known and uncertainty and to avoid it. They make investments in the stocks of the companies which they are familiar with. The factor of familiarity bias gets the highest rank among all four factors with weights of 46 % approx.

The tendency of investing in stocks with stable returns weights about 27 %. These two factors basically reveal the tendency of risk aversion of the investor. While the other two factors Risk taking and enjoying Risky trading measures the risk loving attitude of the investors. The cumulative score of risk preference reveals that investors are risk averse.

7. 4. AHP Analysis of Determinants of Investor Behavior

Table 17. Pairwise Comparison Matrix of Behavioral Determinants.

Feature	Overconfidence	Investor Optimism	Involvement	Risk Preferences / Attitudes
Overconfidence	1.00	5.00	3.00	2.00
Investor Optimism	0.20	1.00	0.33	0.20
Involvement	0.33	3.00	1.00	0.33
Risk Preferences / Attitudes	0.50	5.00	3.00	1.00

Table 18. Normalized Matrix of Behavioral Determinants.

Feature	Overconfidence	Investor Optimism	Involvement	Risk Preferences Attitudes	Average
Overconfidence	0.49	0.36	0.41	0.57	0.46
Investor Optimism	0.10	0.07	0.05	0.06	0.07
Involvement	0.15	0.21	0.14	0.09	0.15
Risk Preferences / Attitudes	0.25	0.36	0.41	0.28	0.32
Total	1.00	1.00	1.00	1.00	1.00

Table 19. Rank Matrix of Behavioral Determinants.

Feature	%	Rank
Overconfidence	46 %	1
Risk Preferences / Attitudes	32 %	2
Involvement	15 %	3
Investor Optimism	7 %	4

AHP determined that Overconfidence carries more than 64 % weight, so it is the most prominent behavioral dimension that has greater impact in the formation that has greater impact in the formation of overall behavior followed by Risk Preferences/Attitudes with a weight of 32 % and other two dimensions involvement and Investor Optimism with weights 15 % and 7 % respectively

8. FINDINGS

This paper analyses investment behavior of individual investor in terms of four behavioral dimensions VIZ; Overconfidence, Investor involvement, Optimism and Risk attitude that are measured in terms of different factors. The findings suggest that the dimension of overconfidence plays an important role in the determination of overall behavior. Followed by the role of risk preferences, involvement and optimism.

In this study overconfidence bias is measured in terms of four factors: self control, market knowledge, stock selection ability and specific skill. It's clearly found that majority of investors believe that they have complete knowledge of market particularly those investors who have many years of investment experience. They are found to be confident of their specific skills that lead them to earn profits over their investments.

When studied the level of optimism of optimism among investors in terms of their outlook of future of the stock market we found that investors are not much optimistic about the future of market. It's found that some investors want to keep their investment in the stock market only because the stock prices have declined and they do not want to sell their stock at a loss. Very few showed willingness to increase their investment in the stock market in next 12 months because they do not believe that stock market will not scale up immediately.

The dimension if investor's involvement is measured in terms of their trade activity and tendency to make quick money. It was found that investors having short term profit seeking objectives are found to have greater level of involvement as compared to those with long term investment objectives as they have greater tendency to make quick money in short time periods.

When measured risk preferences of individual investors we found that investor's exhibit risk aversion behavior and they prefer investing in familiar companies with stable returns, but there are some investors who showed a strong preference for taking risk. It's found that investors with long term investment objectives and those with ages above 50 are more risk averse when compared to other.

Majority of investors give the impression to have a preference to speculate with likelihood for a gain. Analysis shows that individuals have inconsistent attitudes towards risk in making investment decisions. They exhibit risk aversion have inconsistent attitudes towards risk in making investment decisions. They exhibit risk aversion in a profit making situation while risk seeking behaviors. Is exhibited in a loss making situation that explains the phenomenon of mental accounting. Moreover the presence of disposition effect and representativeness are also confirmed by this study.

9. CONCLUSION

Participants of market have relied for an extended point in time on the conception of proficient market and rational investment behavior when making financial decisions

However, the idea of fully rational investors constantly maximizing their utility and representing perfect self-control is not realistic and the market incompetence in the form of anomalies and absurd investors behavior have been pragmatic more often in the past decades. The consequences of greater extent study revealed that individual investors have high level of involvement and overconfidence while they are not much optimistic about the future outlook of market and moreover they have an aversion to risk.

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