

Measuring Validity of Determinants of Individual Investor Decision Making Investing in Islamabad Stock Exchange of Pakistan

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Abstract: Behavioral finance shows the impact of psychology on the behavior of individuals and is important to study because it shows the main factors behind market inefficiency. Individual investors of the stock market are therefore thought to take rational decisions while making judgments and investment decision. The empirical evidences of previous studies conclude that the involvement of behavioral biases and psychological impacts on investor's judgments and decision making that leads investors towards irrational decision making. Overall discussion in previous studies conclude the presence of behavioral biases in decision making process of investors. All the previous literature that is available has concluded contradictory results so far on the impact of fear and anger on individual investor's judgment and decision making. Keeping this in mind the present study has focused on exploring the real impact of affect heuristic, fear and anger on individual investor's judgments and decision making considering the present scenario in Pakistan. The population of present study was the individual investors trading all over the three stock exchanges of Pakistan. A survey method was conducted with thirty four items to gather the data from 270 investors investing in Islamabad Stock Exchange. Confirmatory Factor Analysis is used to measure the validity of three determinants of individual investor investment decision making.

Key words: Affect Heuristic • Fear • Anger • Investment Decision making • Behavioral Aspect

INTRODUCTION

Behavioral finance is the study of persuasion of psychology on the behavior of financial economists and its ensuing effects on financial markets. Behavioral finance is of concern because it explains the phenomenon of how and why financial markets might be efficient [1]. According to Tversky and Kahneman [2] availability heuristic is a judgmental heuristic in which a person evaluates the rate of recurrence of classes and the possibilities of events occurred by the accessibility, i.e. due to which most appropriate occasions come to investors mind. An inclusive preamble deeply based on social aspects of judgment and a decision making process is given in an article on the psychology of judgment and decision making by [3]. According to Slovic, Finucane and Macgregor [4] there is a negative relationship between risk and benefits due to affect heuristic.

According to Slovic, Finucane and Macgregor [4] affect means the explicit quality of "goodness" or "badness" which is experienced consciously or unconsciously as a feeling state and it also discriminates

the positive or negative features of stimulus. Emotions play a very important role in risk perception process by an investor which has basically the roots of findings of the psychometric model and the concept of an "affect heuristic". Emotions definitely play an important role in risk perception and related attitudes and behaviors of an individual by [5]. Loewenstein [6] argues that at the time of making decision, feelings and emotions force an individual towards a direction which belongs to long term costs and benefits of the activities which are incongruent. The model risk as feelings of elaborate the fact that emotions at the time of making decision by an investor is affects either negatively or positively his/her ultimate decision [7]. Lucey and Dowling [8] narrated that emotional decision making of an investor is basically the avoidance of underlying cost associated with the most favorable decision making.

There are three stock exchanges in Pakistan namely Islamabad Stock Exchange, Karachi Stock Exchange and Lahore Stock Exchange. Major instruments through which an investor can invest in stock exchange are stocks or shares and bonds.

According to Slovic and Peters [9] emotions such as fear and anger leads to intuitive way to perceiving the risk. Fear causes to increase the risk estimate and on the other side anger reduces it. Personal feelings leads investors to behave irrationally [10, 11] However some studies have argued that personal feelings play vital role in effective decision making [12]. According to Lee and Andrade [13] fear leads investors to avoid uncertain events. Moderate fear leads investors to rational decisions but high degree fear leads investors to make irrational decisions [14] so more work is required on exploring such evidences that might help to resolve this ongoing debate.

Mehmood, Ahmed, Khan and Anjum [15] conducted research on behavioral implications of investors for investments in the stock market studied effects of only the socio economic variables and its determinants such as variations in regulations, sensational attitudes and their marital status on risk perception in stock market.

In the case of Pakistani Stock Exchange Market it is observed that while making any financial decision an investor perceives to invest in those stocks or shares where investor assumes low risk and high benefits according to his/her own perception and available information. Investor perceives that there is a negative relationship between risk and benefits. Some other factors also effect an investor decision making like fear, anger and his personal emotions. For example fear of political instability in Pakistan prohibits an investor to invest in stocks more frequently without any proper analysis.

Butt, Saddar, Shafi and Rehman [16] conducted a research and used representativeness and anchoring and adjustment and leniency in their model but they did not incorporate effects of affect heuristic in their model. Present study is an extension to these studies which will cover by previous aspects of theories and the empirical evidences from Pakistani stock market effects of affect heuristic, anger and fear on the single investor behavior. Present study will add value in the field of behavioral finance and may be it will be a pioneer study in Pakistan in this context.

The main objective of present study is to determine the combined effect of affect heuristic, fear and anger on the behavior of individual investors. In previous studies these variables have been examined separately but not under one umbrella which is the true intention to conduct this research.

Present study covers the variables affect heuristics, anger, fear and judgment and decision making of an individual investor. These variables have been used in literature by different authors in different papers

separately. Current study is generalized for the behavior of individual investors all over the Pakistan who are currently trading in Pakistani stock markets. Overall, the key purpose of the study is to enhance the understanding of the role of behavioral heuristics and emotions to the investor's judgment and decision making processes and perform and to refurbish the research interest into affect heuristics in the context of Pakistan.

Literature Review

Empirical Literature: In the most recent study [17] the impact of five types of behavioral biases on stock market investment decisions; their results have shown that both professional and non professional investors of stock market display modest degrees of behavioral biases; however experienced investors are less affected by these biases than less experienced investors. They also concluded that investment decisions of female investors are most likely affected by behavioral biases as compared to male investors. Shiller [18] stated in his book *Irrational Exuberance*, that emotion of investors is one of the critical factors that have recently caused the bull market in the United States.

Ganzach [19] also found the same results in his study but in his research he divided financial assets into two categories (Familiar and unfamiliar financial assets) according to him investors perceive negative relationship between risk and return for only unfamiliar financial assets.

Finucane, AlHakami, Slovic and Johnson [20] also conducted a research on the impact of affective feelings in investor's decision making process and found negative relationship between perceived risk and perceived benefits. The study of AlHakami and Slovic [21] also proved that people perceive negative relationship between risk and return because of their affective feelings towards the hazards and if any activity was liked by an individual, he perceived its risks as lower and its benefits as higher but If any activity was not liked by an individual he perceived oppositely higher risk and lower benefit. This model of investor's attitude is similar to the model that [22] proposed that emotions lead people to perceive the relationship between risk and benefits. Shiv and Fedorikhin [23] also found that people select more affectively favorable.

According to Lee and Andrade [13] fearful investors tend to sell their stocks earlier which affect their decision making. The presence of behavioral aspects such as affect heuristics and representativeness bias play critical role in the perception of negative relationship between risk and return.

Sjoberg [5] conducted a research on emotions and risk perception and found that emotions play important role in perceiving risk. Women were reported stronger fear and anger than men and they gave weaker positive responses than men. Dijker and Koomen [24] examined the influence of attitudes and stereo-types on investor's judgments their results found that because of affect heuristics, people may make judgments about risks and benefits of hazards by analyzing negative and positive feelings they correlate with these hazards so under time pressure they rely more heavily on affect than under no time pressure. Tetlock, Skitka and Boettger [25] also found that under time pressure people's judgments are heavily based on the affect heuristics.

Ahmed, Zulfqar and Khan [26] found that investors believe that stocks of famous companies are less risky which shows their irrational behavior and this leads them to under react to the news relating to such stocks because they underestimate the risks of such companies. Investors perceive companies with high growth prospects will provide above average returns and stocks with poor liquidity will provide poor returns [27].

Butt, Saddar, Shafi and Rehman [16] conducted a research and found that investor's decisions to invest in stocks are significantly influenced by representativeness heuristic because investors become overly optimistic about by taking into account only one acute value in their mind. The presence of large number of well tested studies have confirmed this fact that investors always perceive stocks of alluring companies as profitable and safe stocks. Representativeness bias led investors to perceive good companies as representativeness of safe stocks.

Gambetti and Giusberti [28] conducted a research to study the impact of anger on investment decisions; the results showed that anger is positively related to investor's willingness to invest in diversified portfolio and also angry people usually make risky decisions in order to get higher returns on them. Previous research has shown that trait anger increases the inclination to perceive circumstances as predictable, understandable and under control of an individual by [29] and also investors feel optimistic and invulnerable in anger [30] due to which angry people feel less risk in new circumstances [6].

To our knowledge less research has been done on so far in Pakistan on the impact of emotions such as anger on judgments and decision making. However Coget, Haag and Gibson [14] studied the impact of negative emotions as fear and anger on

investment decisions of an investor and found that anger and fear affects emotions which ultimately influences our judgments. Lerner and Keltner [31] studied the effect of fear and anger on risk perception there results proved that investors having emotions of fear estimate risk pessimistically and therefore they make risk averse investment decisions whereas angry investors show opposite results they estimate risk optimistically and therefore make risky investment decisions in a hope to get high returns on them.

Cao, Han, Hirshleifer and Zhang [32] studied the impact of fear on diversification, their results found that fear of unfamiliarity of events lead investors to think about pessimistic scenarios so they prefer to invest in familiar assets and avoid diversification.

Research Methodology: A questionnaire was designed to collect the data randomly from 300 investors in Islamabad Stock Exchange. The population of present study was all the individual investors trading all over the three stock exchanges of Pakistan. The technique which is used in present study is random sampling of investors to collect the data which represents the whole population of this study. The response was 270 investors from whom data was collected through questionnaires. Primary data was collected through a structured questionnaire survey at Islamabad Stock Exchange. The questionnaire was personally handed over to the investors for getting their responses. After the data collection, arranging and then compiled in the form of a data sheets of Statistical Package Social Science (SPSS) software. To test the reliability of data scale in pilot testing Chronbac's Alpha was used.

Exploratory Factor Analysis: In present study the questionnaire items of one independent variable affecting heuristic are developed by the authors and then questionnaire exploratory factor analysis is done to check whether the items are measuring the construct according to the prediction.

Table 1 depicts the extraction values and mean values for twelve items of affect heuristic in its EFA. According to Habing [33] a construct having the factor loadings above 0.4 are considered as practically significant construct. For twelve items of affect heuristic all items have factor loadings above 0.4 so that all items were included in questionnaire and are practically significant. The values of loading factors for items are 0.781, 0.825, 0.688, 0.864, 0.599, 0.856, 0.510, 0.494, 0.494, 0.798, 0.770 and 0.805 respectively.

Table 1: Exploratory factor analysis for Affect Heuristic

| Items | Extraction values | |
|-------|---|------|
| 01 | The company which I like the most is good in terms of its quality | .781 |
| 02 | The company which I like the most is good in terms of financial soundness | .825 |
| 03 | I think the stocks (shares) of the company I like the most, are good enough for long term investment | .688 |
| 04 | The company which I dislike the most is bad in terms of its quality | .864 |
| 05 | The company which I dislike the most is bad in terms of financial soundness | .599 |
| 06 | I think the stocks (shares) of the company I dislike the most, are not good enough for long term investment | .856 |
| 07 | I have positive feelings about the company I like the most | .510 |
| 08 | I expect high rate of future returns on stocks of the company I like the most | .494 |
| 09 | The company which I like the most has less risk | .494 |
| 10 | I have negative feelings about the company I dislike the most | .798 |
| 11 | I think the company which I dislike the most will pay less returns on stocks | .770 |
| 12 | The company which I dislike the most has greatest risk | .805 |

Table 2: KMO and Bartlett's Test

| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | .807 |
|--|--------------------|---------|
| Bartlett's Test of Sphericity | Approx. Chi-Square | 662.712 |
| | df | 66 |
| | Sig. | .000 |

Table 3: Factor loadings of items of instrument

| Items | Variable | Estimate \geq 0.3 | P-Value |
|---|----------------------------|---------------------|---------|
| The company which I like the most is good in terms of its quality | Affect Heuristic | 0.83 | 0.000 |
| The company which I like the most is good in terms of financial soundness | Affect Heuristic | 0.49 | 0.000 |
| I think the stocks (shares) of the company I like the most, are good enough for long term investment | Affect Heuristic | 0.56 | 0.000 |
| The company which I dislike the most is bad in terms of its quality | Affect Heuristic | 0.68 | 0.000 |
| The company which I dislike the most is bad in terms of financial soundness | Affect Heuristic | 0.49 | 0.000 |
| I think the stocks (shares) of the company I dislike the most, are not good enough for long term investment | Affect Heuristic | 0.75 | 0.000 |
| I have positive feelings about the company I like the most | Affect Heuristic | 0.55 | 0.000 |
| I expect high rate of future returns on stocks of the company I like the most | Affect Heuristic | 0.47 | 0.000 |
| The company which I like the most has less risk | Affect Heuristic | 0.65 | 0.000 |
| I have negative feelings about the company I dislike the most | Affect Heuristic | 0.92 | 0.000 |
| I think the company which I dislike the most will pay less returns on stocks | Affect Heuristic | 0.83 | 0.000 |
| The company which I dislike the most has greatest risk | Affect Heuristic | 0.82 | 0.000 |
| I flare up quickly but get over it quickly | Anger | 0.79 | 0.000 |
| When frustrated, I let my irritation show | Anger | 0.70 | 0.000 |
| I sometimes feel myself ready to explode | Anger | 0.61 | 0.000 |
| I am an even-tempered person | Anger | 0.62 | 0.000 |
| I use predictive skills for investment decision making when I feel angry | Anger | 0.49 | 0.000 |
| Some of my friends think I'm a hot head | Anger | 0.46 | 0.000 |
| Sometimes I fly off the handle for no good reason | Anger | 0.57 | 0.000 |
| I have trouble controlling my temper | Anger | 0.58 | 0.000 |
| I think my knowledge about the stock investment is up to mark | Fear | 0.52 | 0.000 |
| The preconditions of being successful on stock market are mainly knowledge and experience rather than luck | Fear | 0.89 | 0.000 |
| The notions of stock market investment evoke feelings of fear | Fear | 0.52 | 0.000 |
| The stocks are risky in my opinion | Fear | 0.87 | 0.000 |
| In my opinion it is safe to invest in local stocks rather than to buy international stocks | Fear | 0.48 | 0.000 |
| The notions of stock market investment evoke feelings of unpleasant excitement | Fear | 0.70 | 0.000 |
| My investment in stocks has a high degree of safety | Investment Decision Making | 0.41 | 0.000 |
| My investment pays me higher dividends as compared to others | Investment Decision Making | 0.90 | 0.000 |
| My investment repays the principal at maturity | Investment Decision Making | 0.83 | 0.000 |
| My investment has a lower risk compared to the market in general | Investment Decision Making | 0.72 | 0.000 |
| My investment in stocks has demonstrated increased revenue growth in past 05 years | Investment Decision Making | 0.74 | 0.000 |
| My investment in stocks has demonstrated decreased cash flow growth in past 05 years | Investment Decision Making | 0.89 | 0.000 |
| My investment reports worst results normally | Investment Decision Making | 0.71 | 0.000 |
| I prefer to invest in stocks from different countries so I can diversify the risk | Investment Decision Making | 0.63 | 0.000 |

Table 2 depicts the results of Kaiser-Meyer-Olkin (KMO) and Bartlett's Test which is 0.807. According to Kaiser [34] if value of KMO lies between 0.8 to 0.9 shows the greatness and sample is adequate. Bartlett's Test of sphericity describes that there should not be the identity matrix in original correlation matrix and its value in above table is highly significant 0.000 which shows there is no identity matrix in R-matrix.

The table 3 as mentioned above depicts strong factor loadings that are = 0.3 [35] for all items of affect heuristic, anger, fear and investment decision making and the P-values of all items are less than 0.05 which is showing that the results are highly significant. This confirms that no item is excluded from the instrument and hence all items of affect heuristic, anger, fear and investment decision making are valid and included in the instrument.

CONCLUSION AND FUTURE DIRECTION

The instrument of thirty four (34) items (investment decision making 08, affect heuristics 12, anger 08, fear 06) was completed after applying exploratory factor analysis on affect heuristics and confirmatory factor analysis on all the variables using AMOS version 16. The items having factor loadings less than 0.3 shall be excluded from the instruments. It is vital to test the validity of the scale used in prior studies in diverse cultures and environment. The validity of the items used in the scale to compute the variables of the study have been tested in Pakistani scenario. Further research can be done using these items to explore the relationships between the variables.

REFERENCES

1. Sewell, M., 2001. Behavioral finance. <http://www.behaviouralfinance.net/>.
2. Tversky, A. and D. Kahneman, 1973. Availability: A heuristic for judging frequency and probability. *Cognitive Psychology*, 5(2): 207-232.
3. Plous, S., 1993. *The Psychology of Judgment and Decision Making*. New York: McGraw-Hill.
4. Slovic, P., M.L. Finucane, E. Peters and D.G. MacGregor, 2002. The affect heuristic. In T. Gilovich, D. Griffin and D. Kahneman (Eds.), *Heuristics and biases: The psychology of intuitive judgment* New York: Cambridge University Press, pp: 397-420.
5. Sjöberg, L., 2007. Emotions and risk perception. *Palgrave Macmillan Journals*, 9(4): 223-237.
6. Loewenstein, G., 2000. Emotions in economic theory and economic behavior. *American Economic Review*, 90(2): 426-432.
7. Loewenstein, G., E.U. Weber, C.K. Hsee and N. Welch, 2001. Risk as feelings. *Psychological Bulletin*, 127(2): 267-286.
8. Lucey, M.B. and M. Dowling, 2005. The role of feelings in investor decision-making. *Journal of economic surveys*, 19(2): 211-237.
9. Slovic, P. and E. Peters, 2006. Risk Perception and Affect. *Current directions in psychological science*, 15(6): 322-325.
10. Shiv, B., G. Loewenstein, A. Bechara, H. Damasio and A. Damasio, 2005. Investment behavior and the negative side of emotion. *Psychological Science*, 16: 435-438.
11. Slovic, P., M.L. Finucane, E. Peters and D.G. MacGregor, 2007. The affect heuristic. *European Journal of Operational Research*, 177: 1333-1352.
12. Damasio, A.R., 1994. *Descartes' Error: Emotion, Reason and the Human Brain*. Grosset / Putnam. New York.
13. Lee, J.C. and E.B. Andrade, 2011. Fear, Social Projection and Financial Decision Making. *Journal of Marketing Research*, forthcoming.
14. Coget, J.F., C. Haag and D.E. Gibson, 2011. Anger and Fear in Decision-Making: The Case of Film Directors on Set. *European Management Journal*, 29(6): 15.
15. Mahmood, I., H. Ahmad, A.Z. Khan and M. Anjum, 2011. Behavioral implications of investors for investments in the Stock Market. *European Journal of Social Science*, 20(2): 240-247.
16. Butt, M.A., R. Saddar, H. Shafi, K.U. Rehman, R.R. Rehman and H.M. Shoaib, 2011. Investor's dilemma: fundamentals or biasness in investment decision. *Journal of Economics and Behavioral Studies*, 3(2): 122-127.
17. Snir, S.H., A. Kudryavtsev and G. Cohen, 2012. Stock Market Investors: Who Is More Rational and Who Relies on Intuition. *International Journal of Economics and Finance*, 4(5): 56-72.
18. Shiller, R.J., 2000. *Irrational Exuberance*. Princeton, NJ: Princeton University Press.
19. Ganzach, Y., 2000. Judging risk and return of financial assets. *Organizational Behavior and Human Decision Processes*, 83: 353-370.

20. Finucane, M.L., A. Alhakami, P. Slovic and S.M. Johnson, 2000. The affect heuristic in judgments of risks and benefits. *Journal of Behavioral Decision Making*, 13(1): 17.
21. Alhakami, A.S. and P. Slovic, 1994. A psychological study of the inverse relationship between perceived risk and perceived benefits. *Risk Analysis*, 14: 1085-1096.
22. Zajonc, R.B., 1980. Feeling and thinking: Preferences need no inferences. *American Psychologist*, 35: 151-175.
23. Shiv, B. and A. Fedorikhin, 1999. Heart and Mind in Conflict: The Interplay of Affect and Cognition in Consumer Decision Making. *Journal of Consumer Research*, 26: 278-292.
24. Dijkster, A.J. and W. Koomen, 1996. Stereotyping and attitudinal effects under time pressure. *European Journal of Social Psychology*, 26: 61-74.
25. Tetlock, P.E. and R. Boettger, 1989. Accountability: A social magnifier of the dilution effect. *Journal of Personality and Social Psychology*, 57: 388-398.
26. Ahmed, N., Z. Ahmad and S.K. Khan, 2011. Behavioral finance: Shaping the decisions of small investors of Lahore Stock Exchange. *Interdisciplinary Journal of Research in Business*, 1(2): 38-43.
27. Kaustia, M., H. Laukkanen and V. Puttonen, 2009. Should good stocks have high prices or high returns? *Financial Analysts Journal*, 65: 55-62.
28. Gambetti, E. and F. Giusberti, 2012. Dispositional anger and risk decision-making. *Mind and Society*, 8: 7-20.
29. Ellsworth, P.C., K.R. Scherer, R.J. Davidson, K.R. Scherer and H.H. Goldsmith, 2003. Appraisal Processes In Emotion: Handbook of Affective Sciences. New York: Oxford University Press, pp: 572-595.
30. Quigley, B.M. and J.T. Tedeschi, 1996. Mediating effects of blame attributions on feelings of anger. *Personality and Social Psychology Bulletin*, 22: 1280-1288.
31. Lerner, J.S. and D. Keltner, 2001. Fear, Anger and Risk. *Journal of Personality and Social Psychology*, 81(1): 146-159.
32. Cao, H.H., B. Han, D. Hirshleifer and H.H. Zhang, 2011. Fear of the unknown: familiarity and economic decisions. *Review of Finance*, 15(1): 173-206.
33. Habing, B., 2003. Exploratory factor analysis. *Social Sciences*, 30: 533-538.
34. Kaiser, H.F., 1974. An index of factorial simplicity. *Psychometrika*, 39: 31-36.
35. Hu, L. and P.M. Bentler, 1999. Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, 6: 1-55.