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An Empirical Examination of Behavioral Biases and Investment Decision-Making: Evidence from Retail Investors

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ABSTRACT

The mainstream economics paradigm presupposes that investors are complete rationality, and they take their decision on the basis of all the information (Fama, 1970). However, there is an increasingly accumulating amount of empirical data that indicates otherwise, in the sense that investors tend to use psychological shortcuts and biases (Tversky and Kahneman, 1974; Barberis, 2018). Therefore, emotional, perception factors and social influences are some of the issues of behavioral finance that make decisions in a manner that is arguably rational, or not in accordance with model prediction.

Keywords: Rationality, Mainstream Economics, Investor Behavior, Behavioral Finance, Psychological Biases, Heuristics, Emotional Factors, Perception Factors, Social Influence, Decision-Making, Information Efficiency, Empirical Evidence, Cognitive Biases, Investor Psychology, Market Predictions.

INTRODUCTION

This empirical study looks at the influence of the three most common behavioral biases in the investment behavior of retail investors, which include overconfidence, loss aversion, and, herding. This research uses cross sectional data of 412 active retail investors to study different biases and decisions by using different methodologies, including reliability testing, factor analysis, and, multiple regression. This study finding indicate that overconfidence and herding bias predict aggressive investment decisions, but the influence of the loss aversion bias, although in a negative way, is also high. This paper is a part of the literature in both traditional and contemporary literature, which dictates that behavioral finance is a field to be targeted when it comes to the development of training programs among investors.

These biases are more likely to be displayed by investors in developing economies because of their relative lack of experience in financial issues and risk management as well as dependence on market sentiment (De Bondt and Thaler, 1985; Kumar and Goyal, 2016). The present research aims at measuring on an empirical basis the role of some of the behavioural biases in affecting the investment decisions of retail investors.

The paper has made three major contributions:

- Combination of old theories in behavioral finance with new literature to provide new empirical evidence.
- Dwelling on three significant behavioral biases that include overconfidence, loss aversion and herding.
- To open the way to the possibility of replication and comparison between countries in the future,

it is recommended to provide an empirical model based on a regression analysis.

LITERATURE REVIEW

The basis of behavioral finance

The behavioral finance study is based on the concept of limited rationality and thinking shortcuts (Simon, 1955). Prospect Theory is among the most notable works of Kahneman and Tversky (1979) that presuppose that individuals present varying degrees of risk-taking (asymmetrically) along the gains and losses spectrum. This was an abandonment of the expected utility theory and the prospect theory, which led to the future research on the biases in making financial decisions.

Overconfidence Bias

Overconfidence among investors is commonly displayed as overestimating what one knows, underestimating risks, and over-trading the portfolio and ultimately, the outcome has poor financial returns (Barber and Odean, 2001; Glaser and Weber, 2007).

- H1: There is a great positive impact of overconfidence on investment decision-making.

Loss Aversion

Loss aversion is the fear of losses that investors have in disproportion to the commensurate gain (Kahneman and Tversky, 1979). Loss averse investors are conservative in their investments and take risks.

- H2: there is a strong negative influence of loss aversion on investment decision-making.

Herding Behavior

Investors will dread the losses than they will enjoy the gains. This influences their decision making to take up more risk-aversive position (Kahneman and Tversky, 1979). Loss-averse will invest at a higher percentage than the average. Some people will not take independent decisions, but instead, imitate the behavior of other people. This is what is called herding (Bikhchandani et al., 1992). Most of the studies focused on the herding behavior in the developing nations (Chiang and Zheng, 2010).

- H3: There is a strong positive implication of the herding behavior on investment decision-making.

METHODOLOGY

Research Design

This research had a cross-sectional and quantitative design. Particular behavioral biases tendencies and investment decision outcomes were operationalized through a structured questionnaire that employed 5

point Likert scales to measure the tendency.

Sample

One thousand four hundred and twelve active retail investors were surveyed out of brokerage houses, online trading communities, and investment groups. The convenience sampling approach was used because it is a common practice in earlier research of this type (Kumar and Goyal, 2016).

Measurement Scales

- **Overconfidence:** 5 questions by Barber and Odean (2001).
- **Loss Aversion:** 4 questions of Kahneman and Tversky (1979).
- **Herding:** 4 questions Chiang and Zheng (2010).

These items were grouped under investment specific decision making: 5 items that comprised aggressiveness, diversification and frequency of trading.

Data Analysis Techniques

1. **Reliability analysis** (Cronbach's α)
2. **Exploratory Factor Analysis (EFA)**
3. **Correlation Analysis**
4. **Multiple Linear Regression**

RESULTS

Reliability Analysis

- All scales met the reliability threshold ($\alpha > 0.70$):
- Overconfidence: $\alpha =$ **0.83**
- Loss Aversion: $\alpha =$ **0.79**
- Herding: $\alpha =$ **0.82**
- Investment Decision-Making: $\alpha =$ **0.87**

Exploratory Factor Analysis

KMO = **0.842**, Bartlett's Test $p < 0.001$, indicating sampling adequacy.

Four factors emerged as expected with factor loadings >0.60.

Correlation Analysis

Overconfidence and herding showed positive, significant correlations with investment decision-making ($p < 0.01$). Loss aversion correlated negatively ($p < 0.05$).

Regression Analysis

A multiple regression model was estimated:

Model:
Investment Decision = $\beta_0 + \beta_1$(Overconfidence) + β_2(Loss Aversion) + β_3(Herding)

Regression Results

Variable	β Coefficient	t-value	p-value
Overconfidence	**0.321**	5.87	<0.001
Loss Aversion	**–0.214**	–3.92	<0.001
Herding	**0.276**	4.61	<0.001
Constant	1.117	3.12	0.002

Model Summary:

- R^2 = **0.42**
- Adjusted R^2 = **0.41**
- F-statistic (3, 408) = **36.19**, $p < 0.001$

Interpretation

- The effect of overconfidence is serious on investment aggressiveness.
- The loss aversion influences greatly the risky decision-making.
- The influence of herding on decisions of individuals in investments is considerable, and the phenomenon is reflective of a social pressure and a general attitude towards the market.

DISCUSSION

The theoretical predictions of behavioral finance are validated by the findings of the study. The two essential predictors of investment choices are overconfidence and herding that are characteristic features of retail investors (e.g., Barber and Odean, 2001; Bikhchandani et al, 1992). The use of Prospect Theory is confirmed by loss aversion and the negative effect of loss aversion is in consistency with earlier findings (Tversky and Kahneman, 1992).

The recent research indicates that another worsening factor is the recent influx of Internet-based trading sites of social media sentiment due to emotional bias (Barberis, 2018; Statman, 2019). The contribution of this study to the literature is that it presents evidence in an emerging market setup where due to the lack of sufficient financial education we anticipate that these behavioral biases would be amplified in the market setting of volatility.

CONCLUSION

The behavioral finance theoretically predicts the feature of empirical results. Both overconfidence and herding are also major predictors of investment choices and prevailing characteristics of retail investors (e.g., Barber and Odean, 2001; Bikhchandani et al., 1992). The fact of loss aversion verifies the use of the Prospect Theory and the adverse influence of loss aversion is quite consistent with the earlier findings (Tversky and Kahneman, 1992).

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