

OVERCONFIDENCE BIAS ON INVESTMENT DECISION MAKING: A STUDY OF THE BANGLADESH SECURITY MARKET

Tahmina Khanam, & Gabriele M. Murry¹

Faculty of Business Administration, Technical University Amberg-Weiden (Germany)

¹Prof. Dr

Abstract

The psychology of investors plays an important role in decision-making in the investment process. The motivation of the study is concerned with overconfidence bias, a tendency where a person overestimates their abilities. This bias can lead to risky investments. But this study indicates that overconfidence bias can be in a positive relation with investment decision-making. Being overconfident can lead to excess risk but the bias brings higher returns. Additionally, it is revealed that risk-taking ability influences the correlation with overconfidence. Bias is usually associated with negative aspects, which led the authors to investigate potentially positive effects. The quantitative analysis was conducted at the Dhaka stock exchange (DSE), Bangladesh, and explores how investors' risk tolerance influences investment decisions.

Keywords: *Bias effect, overconfidence, investment, cognitive bias.*

1. Introduction

This study investigates investors' overconfidence bias in investment decisions and how age, gender, risk tolerance, loss aversion, self-confirmation, and loss probability relate to the Dhaka stock exchange. According to this study, overconfidence bias has some positive effects on investment outcomes.

Overconfidence has significant daily consequences and sometimes motivates individuals to reach their goals (Shepperd, Waters, Weinstein, & Klein, 2015). The expected return of overconfident investors with neutral risk may be higher than that of reasonable investors (Benos, 1998). An investor's tendency to be overconfident in their abilities to choose stocks and determine when to enter or exit a position is a frequent one (Subash, 2012).

Bangladesh is an emerging nation, and stock market investment has increased over the last decade. The Dhaka stock exchange (DSE) has a market capitalization of 42.891 USD (CEIC, 2022) and 350 listed companies in 2022 (CEIC, 2022). This study was conducted to identify some factors that impact the investment decisions, performance, and satisfaction of investors.

2. Literatures review

Investor psychology is important in the decision-making process when making investments, and the overconfidence bias is one of the most pervasive biases that can affect investors (Trejos, Adrian, Yeny E., & Juan M., 2019). **Overconfidence** will encourage investors to use extreme and excessive investment strategies (Sembel & Trinugroho, 2011). The most common psychological habit is overconfidence, which is characterized by a tendency to overestimate one's own abilities, chances for success, probability of gaining positive outcomes, and expertise (Cheng, 2007). Kahneman and Riepe (1998) found the significance of overconfidence in making financial decisions leads to an overestimation of personal knowledge, an overestimation of one's ability to influence events, and an underestimate of risk.

Financial risk tolerance usually lowers in **old age**, although age and risk tolerance did not correlate highly (Samanez-Larkin, Mottola, Heflin, Yu, & Boyle, 2020). Over-60-year-old respondents showed less loss aversion bias (Sujesh & Dhanya, 2021).

They also found that during investment decisions, respondents under the age of 30 displayed less overconfidence bias than their elders; in contrast, respondents with more than 15 years of experience exhibited a higher level of overconfidence bias than respondents with less experience (Sujesh & Dhanya, 2021).

According to psychological studies, **men** are more likely than **women** to be overconfident, particularly in fields like finance where men predominate (Barber & Odean, 2001). When it comes to money concerns, men tend to feel more competent than women (Prince, 1993). In terms of investment performance, women frequently lack confidence (Zaiane, 2013).

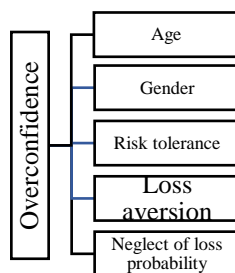
The most important factor influencing investment decisions, according to behavioral finance research, is one's **tolerance for risk** (Chavali & Mohanraj, 2016). As per Ainia and Lutfi (2018), a decision to invest is significantly and favorably impacted by risk tolerance.

Loss aversion influences one's level of risk (Thaler, Tversky, Kahneman, & Schwartz, 1997) and is strongly correlated with higher income and wealth among the investors (Gaechter, Johnson, & Herrmann, 2007).

The theory of Moore & J. Healy (2007) describes that when people have more accurate information about their **own risky behavior** and its consequences than that of others, they may still choose to engage in it. In sectors where individuals claim expertise, people were found to be more confident in their judgments (Heath & Tversky, 1991).

This can be particularly difficult when investing in the stock market. Kahneman & Tversky (1979) describe that people frequently make their decisions on the potential value of profits rather than losses, which can result in overconfidence and neglect of the **probability of loss**.

Figure 1. Conceptual framework



Based on the above discussion of theory, the following hypotheses were derived.

H₁: In investment decisions, Bangladeshis often rely on heuristics.

H_{2a}: Investment decisions are influenced by risk tolerance.

H_{2b}: Investment decisions are influenced by loss aversion.

H_{2c}: Investment decisions are influenced by self-confirmation.

H_{2d}: Investment decisions are influenced by the neglect of loss probability.

H_{3a}: In investments, men are more overconfident than women.

H_{3b}: In investments, young people are more overconfident than older ones.

H₄: Overconfidence has a significant positive financial outcome on investment decision-making.

3. Research methodology

This quantitative study aims to research investors' overconfidence bias in their investment decisions through primary data collection via a survey questionnaire distributed online between 12 to 26 February 2023.

The study's population consists of investors in Bangladesh stock exchanges (Dhaka Stock Exchange, or DSE). A convenience sample from the personal network of one of the authors was used, contacting individuals at the DSE.

The SoSciSurvey platform was used to collect data online. All 27 survey questions included closed-ended questions to gather information about participants' in-depth exploration of their decision-making process regarding stock investments. The study followed the moral guidelines set by the American Psychological Association. Participants (n=58) were informed that their participation is voluntary and completely confidential.

4. Data analysis and interpretation

Considering the research question and hypotheses, data were evaluated using Statistical Package for the Social Sciences (SPSS). Evaluating different age groups, it turns out that people over 46 years of age have highly significant t-values ($p=0.0013$) whereas the younger population is not relying on heuristics. This might be explained due to the experience of the older age group; younger people cannot rely on their intuition due to a lack of experience. Therefore, H₁ can be partially accepted for the older population who relies on heuristics.

When evaluating data for H_{2a}, it can also be partially accepted since risk tolerance ($t=1.856$; $p=0.036$) is significant for the age group 26 to 35 years, which is the only age group able to take risks in investment decisions. This can be explained by the older age groups getting close to retirement age (in BD, where the life expectancy is not so high) and having to fulfill many responsibilities, i.e., family and education of children period.

H_{2b} needs to be rejected since none of the values became significant for loss aversion, whereas H_{2c} can be partially accepted, in particular for the younger generation. For the age groups 18 to 25 ($t=3.674$; $p=0.011$) and 26 to 35 ($t=3.699$; $p=0.000418$), the focus on information and self-confirmation bias is (highly) significant.

H_{2d} is temporarily accepted as all age groups reflect (highly) significant t and p values, indicating that investment decisions are influenced by the neglect of loss probability.

H_{3a} needs to be rejected since t and p values do not significantly differ in values based on overconfidence between gender.

H_{3b} is highly significant for the age groups up to age 45 with $p=0.001$ to 0.00029 , indicating that young people are far more overconfident than older ones.

H₄ is (highly) significant for the age group 26 to 45 offering the highest p values (p=0.0000142) and for age 46 to 55 (p=0.041); therefore, overconfidence has a significant positive outcome on investment decision making.

This research study has some **limitations**. The sample size for this study was quite small and focusses on Bangladesh. Also, the results are not indicative of the whole population because they are based on a sample and research from a particular demographic area in Bangladesh. In addition, this research is limited by time constraints. Furthermore, age distribution throughout the sample is not representative; in particular, the age group 55 and older as well as the group 18 to 25 underrepresent.

5. Implication and discussion

It appears imperative that education is necessary for investors to inform themselves better about their investment decisions, especially in light of their overconfidence coupled with self-confirmation bias. Nonetheless, at least based on their self-report, their overconfidence caused participants to make money during their investment period. However, it must be taken with a grain of caution because of self-confirmation bias and self-report.

Future research can be expanded into thoroughly investigating age groups that were underrepresented in this study. Also, it might be worth eliminating potential self-confirmation bias. Additionally, it might be interesting to evaluate historical data on participant gains and losses and their effect on future investment. If overconfidence leads to positive investment results, self-esteem, and future investment tendencies will build up. On the other hand, if the overconfidence fails, then the person will not go for future further investment.

References

- Ainia, N. S., & Lutfi, L. (2018). The influence of risk perception, risk tolerance, overconfidence, and loss aversion towards investment decision-making. *Journal of Economics, Business, and Accountancy Ventura*, 410.
- Barber, B. M., & Odean, T. (2001). Boys will be boys: Gender, overconfidence, and common stock investment. *Quarterly Journal of Economics*, 289.
- Benos, A. V. (1998). Aggressiveness and survival of overconfident traders. *Journal of Financial Markets*, 353-383.
- CEIC DATA. (2022, November). CEIC. Retrieved from <https://www.ceicdata.com/en/indicator/bangladesh/market-capitalization>
- CEIC. (2022). CEIC. Retrieved from <https://www.ceicdata.com/en/bangladesh/dhaka-stock-exchange-number-of-listed-companies-and-shares/dse-number-of-listed-companies-annual>
- Chavali, K., & Mohanraj, M. (2016). Impact of demographic variables and risk tolerance on investment decisions – An empirical analysis. *International Journal of Economics and Financial Issues*, 6(1), 169-175.
- Cheng, P. (2007). The trader interaction effect on the impact of overconfidence on trading performance: An empirical study. *Journal of Behavioral Finance*, 8(2), 59-69.
- Heath, C., & Tversky, A. (1991). Preference and belief: Ambiguity and competence in choice under uncertainty. *Journal of Risk and Uncertainty*.
- Kahneman, D., & Riepe, M. (1998). Aspects of investor psychology. *Journal of Portfolio Management*, Vol. 24(4), 52-65.
- Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica*.
- Moore, D., & J. Healy, P. (2007). *The trouble with overconfidence*. Tepper School of Business.
- Prince, M. (1993). Women, Men, and Money Styles. *Journal of Economic Psychology*, 175-182.
- Samanez-Larkin, G., Mottola, G., Heflin, D., Yu, L., & Boyle, P. (2020). Does overconfidence increase financial risk taking in older age? *Insights: Financial Capability*, 4.
- Sembel, R., & Trinugroho, I. (2011). Overconfidence and excessive trading behavior: An experimental study. *International Journal of Business and Management*, 6, 147-152.
- Subash, R. (2012). *Role of behavioral finance in portfolio investment decisions: evidence from India*. Prague: Charles University in Prague.
- Sujesh, C. P., & Dhanya, K. (2021). Influence of age and investment experience on behavioural biases of equity investors. *International Journal of Creative Research Thoughts (IJCRT)*, 5422.
- Thaler, R., Tversky, A., Kahneman, D., & Schwartz, A. (1997). The effect of myopia and loss aversion on risk taking: An experimental test. *The quarterly Journal of Economics*, 112(2), 647-661.
- Trejos, C., Adrian, v., Yeny E., R., & Juan M., G. (2019). Overconfidence and disposition effect in the stock market: A micro world based setting. *Journal of Behavioral and Experimental Finance*, 21(C), 61-69.
- Zaiane, S. (2013). Investor overconfidence: An examination of individual traders on the Tunisian Stock Market. *Advances in Management and Applied Economics*.