

RESEARCH NOTES

An Effect of Demographic Factors on Overconfidence Bias in Investment Decisions

Nagalakshmi. P*

Research Scholar, PG and Research Department of Commerce, Ayya Nadar Janaki Ammal College,
Affiliated to Madurai Kamaraj University, Sivakasi, Tamil Nadu

Selvakumar. M

Associate Professor and Head, PG and Research Department of Commerce, Ayya Nadar Janaki Ammal College,
Affiliated to Madurai Kamaraj University, Sivakasi, Tamil Nadu

*Corresponding Author Email: sarankosi28@gmail.com

Abstract: *This study analyzes the impact of demographic profile on the overconfidence bias of individual investment decision-making. Overconfidence is a behavioural trait bias where individuals overestimate their knowledge and forecast the future, often leading to unexpected financial outcomes. To examine this study, primary data were collected through a well-structured questionnaire administered to a sample of 105 respondents in the Sivakasi region. The study utilised judgmental sampling techniques to ensure the inclusion of active investors capable of providing relevant insights into behavioural attention. Statistical analysis was performed using Analysis of Variance (ANOVA) and independent sample t-tests to evaluate the significance of demographic variables and test the formulated hypotheses. The empirical results reveal a statistically significant relationship between age and overconfidence bias, suggesting that an investor's stage of life or years of experience may notably impact their perceived competence and subsequent risk-taking behaviour. These findings contribute to the growing body of behavioural finance literature by highlighting how specific personal factors can deviate an investor from purely rational economic models.*

Keywords: Demographic Factors, Overconfidence Bias, Behavioural Finance, Investment Decisions, ANOVA

INTRODUCTION

Financial Market

Different theories have been developed and have broadly classified the financial market into traditional finance and behavioural finance. Traditional theory is based on the perception that investors act rationally; their aim is to maximise profit, and they are usually risk-averse. This assumption that the market is efficient is violated because of speculation and unpredictability in the market, often termed “market anomalies.” Thus, an alternative theory was developed, termed “behavioural finance”, which emphasises the sociological and psychological aspects of decision-making in investors.¹

Traditional Finance and Behavioural Finance

Traditional finance theory and economic models emphasise two basic assumptions (i.e.) market efficiency and rationality. The assumption of traditional finance describes human behaviour as rational, and always endeavours to maximise utility². When the past development of theories on investment activities is observed, it is exposed that the traditional portfolio approach was the foremost in the market until the 1950s. However, this approach lacks a scientific base. It has been the dominant view in the market for a long time because its feasibility was relatively easy³. According to behavioural finance, people do not always behave rationally. By using cognitive shortcuts determined by themselves, they act under the influence of various psychological aspects.

Overconfidence can be summarised as unwarranted faith in one's intuitive reasoning, judgement, and cognitive abilities. Thus, previous researchers suggest that investors are overconfident about their ability to forecast the future and they overestimate their ability to assess a company's potential investment. This study presents the effect of demographic factors on overconfidence bias in investment decision making⁴.

LITERATURE REVIEW

Experimental research and historical studies on behavioural finance have shown the presence of behavioural bias and irrationality in the investment decision-making process. There have been studies on the effects of demographic factors on overconfidence bias, such as gender, age, income, and education².

Dr. Taqqadus Bashir et al. (2013) conducted a study on

the “impact of behavioural biases on investors’ decision making: male vs. female”. The main objectives of the study were to measure the basic variables of the demographic profile and bias. Therefore, this study aimed to investigate the relationship between gender, education, and various biases. The data for this study were collected using a questionnaire, and the sample size consisted of 100 respondents. The study was analysed using correlation and the chi-square test. The study finds that there is no relationship between gender and overconfidence bias while making investment decisions

Renu Isidore, R and Christie, P (2019) in their article titled, “The Relationship Between Income and Behavioural Biases”, have discovered the relationship between the annual income earned by the investors and eight behavioural biases such as mental accounting, anchoring, overconfidence, etc. This study used inferential statistical tools, such as ANOVA and correlation. The results found that there was no significant relationship between overconfidence and income.

Elizabeth, J et.al., (2020) in their research entitled, “Investor behavioural bias based on demographic characteristics age, gender and income etc. The survey was collected from 151 stock investors through a structured questionnaire. The results of the study showed that overconfidence bias was influenced by gender and income.

Madhulika Sonawane et al., (2021) have published their study titled, “A Study on the Impact of Demographic Factors on Overconfident Bias in Investment Decision Process.” The main objectives of this study are to analyse the relationship between the factors related to behavioural biases and the demographic factors of investors. Data were collected from 100 IT employees in Pune. The variables were measured using an independent t-test and ANOVA. The results show a significant relationship between age and overconfidence. Age has a greater influence on investment decisions.

From these reviews, it is understood that there is a relationship between socioeconomic factors and overconfidence bias. Moreover, it is necessary to study whether a relationship exists in the present study area. To check this, the present study was carried out.

RESEARCRH METHODOLOGY

This study was based on both primary and secondary sources of information. A questionnaire was used to obtain primary data from 105 respondents in the Sivakasi region. To acquire data, the researcher used a judgement sampling technique. Secondary data for the study were gathered through books, journals, websites, and other sources.

Objectives

The objectives of this study are as follows:

- To study the behaviour bias in investment decision-making.
- To analyse the role of gender, age, and education in the behaviour of investors with respect to the overconfident bias.

Null Hypothesis

To achieve the objectives of the study, the researcher framed the following hypotheses:

- There is no significant relationship between Gender and overconfident bias
- There is no significant relationship between Age and overconfident bias

- There was no significant relationship between education and overconfidence bias.

Reliability

Reliability testing was also carried out to measure internal consistency. The reliability statistics gave the actual value for Cronbach’s alpha, which was 0.948. This indicates a high level of internal consistency.

| Cronbach's Alpha | N of Items |
|------------------|------------|
| 0.948 | 6 |

DATA ANALYSIS AND INTERPRETATION

The data collected through the questionnaire were analysed to conclude the hypotheses which were framed to analyse the relationship between age, gender, and education of the investors and overconfidence bias. Table 1 shows the descriptive statistics of the demographic profile of the investors.

Table 1 : Demographic profile of respondents

| Variables | Levels | Frequency | Percentage |
|-----------|----------------|-----------|------------|
| Gender | Male | 63 | 60 |
| | Female | 42 | 40 |
| Age | 21-30 | 75 | 71 |
| | 31-40 | 20 | 19 |
| | 41-50 | 8 | 8 |
| | Above 50 | 2 | 2 |
| Education | Under graduate | 80 | 76 |
| | Post graduate | 25 | 24 |

Source: Primary Data

Table 1 shows the structure of respondents by Gender, Age and Education. This research included more males (60%) than females and more under-graduates (76.2%) than post-graduates (23.8%). Maximum investors are from 21-30 years (71.4%). The researcher concentrates more on young investors from various places in the study area.

TESTING OF HYPOTHESES

HYPOTHESIS I

The researcher has framed the null hypothesis, namely “there is no significant relationship between gender and overconfident bias”. To test the hypothesis, the researcher applied an independent t-test to analyse the relationship between them. The result is presented in Table 2

Table 2 : Gender and Overconfidence

| ID No | Gender | N | Mean | F | Sig. |
|-------|--------|----|-------|-------|--------------|
| OC1 | Male | 63 | 3.429 | 0.052 | 0.82 |
| | Female | 42 | 3.048 | | |
| OC2 | Male | 63 | 3.238 | 0.563 | 0.455 |
| | Female | 42 | 3.071 | | |
| OC3 | Male | 63 | 3.27 | 5.843 | 0.017 |
| | Female | 42 | 3.095 | | |
| OC4 | Male | 63 | 3.381 | 0.085 | 0.771 |
| | Female | 42 | 2.857 | | |
| OC5 | Male | 63 | 3.365 | 0.14 | 0.709 |
| | Female | 42 | 3.119 | | |
| OC6 | Male | 63 | 3.635 | 6.246 | 0.014 |
| | Female | 42 | 3.19 | | |

Source: Primary data

The results of the independent t-test are shown in Table 2. Out of the six statements, the P value of four statements is more than 0.05, that is, the null hypothesis is accepted. Hence, there is no significant relationship between

gender and overconfidence bias. The remaining two statements are less than 0.05; therefore, the null hypothesis was rejected. Therefore, there is a significant relationship between gender and overconfidence bias.

HYPOTHESIS II

Table 3 shows the relationship between education and overconfidence bias. The researcher has framed the null hypothesis, “there is no significant relationship between education and overconfident bias”. To test the hypothesis, an independent t-test was applied.

Table 3: Education and Overconfidence

| ID NO | Education | N | Mean | F | Sig. |
|-------|-----------|----|-------|-------|--------------|
| OC1 | ug | 80 | 3.3 | 0.299 | 0.585 |
| | Pg | 25 | 3.2 | | |
| OC2 | ug | 80 | 3.3 | 0.125 | 0.724 |
| | Pg | 25 | 2.76 | | |
| OC3 | ug | 80 | 3.225 | 0.492 | 0.485 |
| | Pg | 25 | 3.12 | | |
| OC4 | ug | 80 | 3.263 | 2.128 | 0.148 |
| | Pg | 25 | 2.88 | | |
| OC5 | ug | 80 | 3.325 | 1.052 | 0.307 |
| | Pg | 25 | 3.08 | | |
| OC6 | ug | 80 | 3.563 | 0.691 | 0.408 |
| | Pg | 25 | 3.12 | | |

Source: Primary data

The independent t-test results are presented in Table 3. The p-values of all statements are >0.05, so the null hypothesis is accepted. Therefore, there is no significant relationship between education and overconfidence bias.

HYPOTHESIS III

An attempt has been made by the researcher to test the hypothesis: “There is no significant relationship between age and overconfident bias.” To test this hypothesis, the researcher applied a one-way ANOVA tool. The outcomes are presented in Table 4.

Table 4: Age and Overconfidence

| ID Variable | Age | N | Mean | F | Sig. |
|-------------|--------------|------------|--------------|-------|--------------|
| | | | | | P value |
| OC1 | 21-30 | 75 | 3.227 | 2.924 | 0.038 |
| | 31-40 | 20 | 3.5 | | |
| | 41-50 | 8 | 3.75 | | |
| | above 50 | 2 | 1 | | |
| | Total | 105 | 3.276 | | |
| OC2 | 21-30 | 75 | 3.187 | 2.249 | 0.087 |
| | 31-40 | 20 | 3.2 | | |
| | 41-50 | 8 | 3.5 | | |
| | above 50 | 2 | 1 | | |
| | Total | 105 | 3.171 | | |
| OC3 | 21-30 | 75 | 3.187 | 3.735 | 0.014 |
| | 31-40 | 20 | 3.2 | | |
| | 41-50 | 8 | 3.5 | | |
| | above 50 | 2 | 1 | | |
| | Total | 105 | 3.171 | | |
| OC4 | 21-30 | 75 | 3.133 | 2.589 | 0.057 |
| | 31-40 | 20 | 3.3 | | |
| | 41-50 | 8 | 4.125 | | |
| | above 50 | 2 | 1 | | |
| | Total | 105 | 3.2 | | |
| OC5 | 21-30 | 75 | 3.16 | 2.648 | 0.053 |
| | 31-40 | 20 | 3.3 | | |
| | 41-50 | 8 | 3.5 | | |
| | above 50 | 2 | 1 | | |
| | Total | 105 | 3.171 | | |
| OC6 | 21-30 | 75 | 3.227 | 4.052 | 0.009 |
| | 31-40 | 20 | 3.55 | | |
| | 41-50 | 8 | 3.5 | | |
| | above 50 | 2 | 1 | | |
| | Total | 105 | 3.267 | | |

Source: Primary data

The results of the ANOVA are shown in Table 4. Out of the six statements, the p-value of five statements is greater than 0.05, that is, the null hypothesis is accepted. Hence, there is no significant relationship between age and overconfidence bias. The remaining two statements’ p-values are less than 0.05, so the null hypothesis is rejected. Therefore, there is a significant relationship between age and overconfidence bias.

CONCLUSION

The results of the analysis and discussion show that there is no significant relationship between gender and overconfidence bias. Furthermore, it also found that overconfidence bias is not related to education. Finally, the researcher concludes that there is a positive effect between age and overconfident behaviour bias because the younger age group has more confidence in their skills and ability while making investment decisions.

Acknowledgement

All authors contributed equally to the conception and design of this study.

REFERENCES

- Baksi, S. (2020). Financial markets transition from traditional finance to behavioural finance. *XXI Annual International Conference Proceedings*, 297–310. ISBN: 978-81-936606-2-1.
- Sonawane, M., et al. (2021). A study on impact of demographic factors on overconfidence bias in investment decision process. *International Journal of Management*, 12(5), 64–71. doi.org
- Islamoglu, M., et al. (2015). Determination of factors affecting individual investors behaviours: A study on bankers. *International Journal of Economics and Financial Issues*, 5(2), 531–543.
- Mishra, K. C., et al. (2015). *A study on the impact of investment experience, gender and level of education on overconfident and self-attribution bias* [Unpublished manuscript or Technical Report].
- Bashir, T., et al. (2013). Impact of behavioural biases on investors decision making: Male vs female. *IOSR Journal of Business and Management*, 10(3), 60–68.
- Isidor, R. R., &Christic, P. (2019). The relationship between the income and behavioural biases. *Journal of Economics, Finance and Administrative Science*, 24(47), 127–144. doi.org
- Elizabeth, J., et al. (2020). Investor behavioral bias based on demographic characteristics. *Advances in Economics, Business and Management Research*, 115, 6–12.
- Sonawane, M., et al. (2021). A study on impact of demographic factors on OC bias in investment decision process. *International Journal of Management*, 12(5), 64–71. doi.org (Note: This is a duplicate of entry #2).
- Ackert, L. F., &Deaves, R. (2010). *Behavioral finance: Psychology, decision making, and markets*. Cengage Learning.
- Chawada, T. (Year). *Behaviour finance*. Institute of Management and Information Technology.
- Kasemsap, K. (2015). The role of psychological factors in behavioural finance. In *Psychological and Social Design Innovations in Modern Advertising of Psychology* (pp. 94–115). IGI Global.