

## OVERCONFIDENCE IN MILLENNIAL STOCK INVESTORS IN INDONESIA: A SOCIAL NETWORK THEORY PERSPECTIVE

**RETNONING AMBARWATI\***

Economics Doctoral Program Students, Faculty of Business and Economics, Islamic University of Indonesia Yogyakarta, Indonesia. Email: retnoning.ambar72@gmail.com

**HADRI KUSUMA**

(Professor). Accounting Department, Faculty of Business and Economics, Islamic University of Indonesia, Yogyakarta, Indonesia. Email: 883120104@uii.ac.id

**ZAENAL ARIFIN**

(Professor), Management Department, Faculty of Business and Economics, Islamic University of Indonesia, Yogyakarta, Indonesia. Email: zaenalarifin.fe@uii.ac.id

**SUTRISNO**

(Dr.), Management Department, Faculty of Business and Economics, Islamic University of Indonesia, Yogyakarta, Indonesia. Email: sutrisno@uii.ac.id

### Abstract

This study aims to determine the effect of financial literacy, investor skills, family ties and friendship ties on the overconfidence behavior of millennial stock investors in Indonesia. This study uses the perspective of social network theories that have never been used to examine the factors that influence overconfidence. This research is a type of quantitative research conducted to see the effect of financial literacy variables, investor skills, family ties and friendship ties on the overconfidence behavior of millennial stock investors by controlling for variables of gender, age and education level. Data was collected using a questionnaire measured using a semantic differential scale. The testing method carried out in this study uses the AMOS SEM statistical method. Based on the test results, it is found that the variables of financial literacy, investor skills, family ties and friendship ties have a significant positive effect on the overconfidence behavior of millennial stock investors. Although it gives good results, this research is not free from weaknesses. For further research, it is hoped that it will be able to overcome these limitations so that it can increase a more comprehensive understanding of the role of social network theory on behavior including bias in one's behavior.

**Keywords:** Overconfidence, Financial Literacy, Investor Skill, Family Ties, Friendship Ties

### INTRODUCTION

In the financial literature, it is stated that overconfidence is a condition where a person makes an investment decision where the decision making will also involve a low risk perception but this overconfidence condition also indicates that a person has an overestimation of his ability and information signal. The presence of confidence is a very important driving factor for an investor and will underlie one's behavior towards the risk perception of the decision to be taken. Thus the role of confidence will make investors behave more rationally towards their investment decisions but behavioral bias will cause an investor to be overconfident which will sometimes be able to change rational behavior into irrational behaviour (Farsi et al.. 2014).

Overconfidence will cause the decisions made by a person to become inefficient and rational again where this happens because investors are too confident in their knowledge and abilities so that sometimes they do not care about the risks they will face (Kapoor & Prosad, 2017; Kumar & Goyal, 2015). According to Dittrich et al. (2005) overconfidence will increase for several reasons including decreasing the accuracy of investment decisions taken. Increasing job complexity but overconfidence will decrease when individuals have high risk preferences. The high degree of overconfidence can also be defined as the higher the risk taken by investors so that overconfidence occurs when an investor's judgment is too high even when the level of uncertainty is also high or the risk faced by investors is high (Hirshleifer, 2015). The study of investor overconfidence is a study related to behavior, especially in terms of decision making, which reveals that overconfidence is composed of three inseparable structures, namely overestimation, over placement and over precision (Moore & Schatz, 2017). Various factors that can cause excessive levels of self-confidence can arise to be one of the interesting discussions. Based on previous studies, it has been found that several factors can cause a person to have an excessive level of self-confidence including gender (Prims & Moore, 2017), age (Ilieva et al., 2018), educational qualifications, investment experience (Ilieva et al., 2018) although some of them provide different results, resulting in inconsistencies in research results.

The level of financial literacy will increase and have a positive effect on overconfidence. This is expressed by Bashar & Hammash (2017) who conducted research on 250 investors who invested in the Amman Stock Exchange. The results of this study strengthen the results of previous research conducted by Abdallah & Hilu (2015) who found that the level of overconfidence will increase when an investor's literacy level will increase. In research conducted by Zwaan et al. (2017) conducted with a survey method on 363 respondents found that financial literacy is a driving factor in the emergence of overconfidence so that it can be concluded that financial literacy is positively related to the level of investor overconfidence. The study strengthens the results of research conducted by Pikulina et al. (2017) who conducted research with experimental methods also concluded that the higher the level of financial literacy of investors will increase the potential for overconfidence. But on the other hand, research conducted by Wadhwa et al. (2019) revealed that the level of financial literacy has no effect on investor overconfidence. This study was conducted using 267 respondents in India using a questionnaire method and processed using regression revealed the level of financial literacy to be less important than necessary because most investors use the services of financial consultants to assist them in allocating their funds into investment projects.

In this study, investor skill is defined as the cognitive ability of investors. An investor's cognitive ability affects the level of overconfidence of an investor. This was revealed by Visser et al. (2019) revealed that cognitive ability has a positive effect on overconfidence. Research conducted by Pikulina et al. (2017) using 114 respondents conducted using experimental methods revealed that cognitive abilities, especially skills possessed by managers, will increase overconfidence in making their investment decisions. This research strengthens the research results from Duttile (2015) which states that the cognitive ability of an investor will increase the level of overconfidence as measured by overestimation, Over placement and over precision.

But on the other hand, cognitive abilities as measured by one's performance skills have a negative relationship with the level of overconfidence. This was revealed in research conducted by Feld et al. (2017) who found that people who have low levels of skill in their performance will actually have higher levels of overconfidence while people with cognitive abilities in terms of high skills in completing their work will tend to be more accurate in their performance assessments. Findings from the Littrell et al. (2019) by using the experimental method on 100 participants revealed that there is a negative relationship between cognitive ability and the level of overconfidence. People with low cognitive abilities will tend to have high levels of overconfidence while people who have high cognitive levels will tend to be realistic in assessing their performance. This research was conducted to bridge some of the weaknesses of previous studies. This research adopts attitude change theory combined with social network theory which has not been used in previous studies as suggested in the research conducted Singh (2020). The basis for using this theory is that an investor has a high or excessive level of trust will always be rational. (Bao & Li. 2016). In contrast to previous overconfidence research which is always associated with bounded rationally theory, in practice investors who have excessive levels of confidence need controllers as a means of control so that the decisions they make are rational so that other theories are needed that can be used to explain this. In this regard, the concept of social network theory can play a role as one of the factors driving the overconfidence of an investor.

Social network theory is a theory that focuses on social relationships that provide information. Provide stimulation. Social influence and even provide limits on human behavior. This shows a different concept from bounded rationally theory which tends to state that there are no limitations to the information that individuals have. In general, social network theory can be implied in the formation of overconfidence through the increased information obtained by investors, causing increased investor confidence. This theory states that overconfidence can arise through social interaction (Cheng et al.. 2021a), one's judgment of one's own abilities (Kennedy et al.. 2013) and improved social status (Burks et al.. 2013). The social network theory building used in this study is focused on kinship relationships both with family (family ties) and friendship (friendship ties) which have an influence on changes in investor behavior so that in this study both are placed as new variables that are thought to be able to encourage the emergence of investor overconfidence. This was expressed by W. Liu et al. (2017) which states that the role of social networks, whether family or friends, will transmit information that will provide an influence that will cause behavior change. Referring to the above, the concept model developed in this study adopts and develops this research using the basic model of research conducted by Pikulina et al., (2017) and Grezo (2020). This model was developed with the addition of the concept of social fingering as suggested in the research Singh (2020) and adopt social network theory as a new variable that can change investor behavior to overconfidence which is influenced by family ties and friendship ties. Overconfidence behavior which has a tendency to be irrational turns into rational decision making which can be caused by the interaction of individuals with their environment including social relationships. This is in accordance with the rational choice theory as expressed in research conducted by Ogu (2013). Burns & Roszkowska (2016) also revealed that there is a role for social relationships

in rational decision-making. Research using a network theory approach to millennial investors' overconfidence behaviour is still important to do with various considerations. First, the rapid growth of millennial investors and even the largest stock investors is the reason for the importance of research using this group of respondents. This is in line with the research findings Talwar et al. (2021) which states that research using this respondent and approach can provide an overview of how this social network approach can be used to understand the behavior of the millennial generation, especially as an effort to create stability in capital markets and financial markets.

### **Statement of the Problem**

Previous studies on overconfidence have also been carried out by experts providing limitations that make research on this theme still interesting to do. The use of basic theories that are always associated with the EMH (Efficient Market Hypothesis) theory base and the approach of psychological behavioral theories such as bounded rationally and illusionist theory have the same direction of conclusions on people's psychology, namely human weakness as a cause of overconfidence which will have an impact on the investment decisions they make. Previous studies have not revealed other factors such as the role of social networks that can shape investors' overconfidence.

### **Theoretical Framework**

This model was developed with the addition of the concept of social fingering as suggested in the research Singh (2020) and adopts social network theory as a variable that can change investor behavior into overconfidence which is influenced by family ties and friendship ties. This concept was put forward by Liu, Sidhu, Beacom, & Valente (2017) which states that the existence of social relationships that occur will be able to change a person's behavior in decision making.

## **METHODOLOGY**

This research is a type of quantitative research conducted to see the effect of financial literacy variables, investor skills, family ties and friendship ties on the overconfidence behaviour of millennial stock investors by controlling for variables of gender, age and education level. Data was collected using a questionnaire measured using a semantic differential scale. The sample used is millennial stock investors who have had experience as stock investors for at least 2 years with a total of 432 respondents. The test method carried out in this study uses the AMOS SEM statistical method.

## **RESULTS**

### **Analysis of Structural Equations**

#### **Model Fit Test**

This test is carried out to see whether the model used in the study matches the data used. In this study, the GOF index used includes significant probability. CMIN. RMSEA. GFI. AGFI.

TLI and CFI. The criterion value of each indicator is probability > 0.05; CMIN < 2.00; RMSEA < 0.08; GFI > 0.90; AGFI > 0.9. TLI ≥ 0.9 and CFI ≥ 0.9. Based on the tests carried out, the results obtained as listed in table 1

Table 1: Goodness of Fit Model

Goodness of fit index	Criteria	Results	Description
Significant probability	> 0.05	0.557	Meets Criteria
CMIN	< 2.00	0.836	Meets Criteria
RMSEA	< 0.08	0.000	Meets Criteria
GFI	> 0.90	0.996	Meets Criteria
AGFI	> 0.90	0.979	Meets Criteria
TLI	≥ 0.90	1.008	Meets Criteria
CFI	≥ 0.90	1.000	Meets Criteria

Based on table 1 above, all GOF index criteria used in this study fulfill the specified criteria so that it can be concluded that the model used in this study fits the data used. Data used.

Hypothesis Test

This study examines the effect of financial literacy. Investor skills. Family ties and friendship ties on millennial investors' overconfidence behavior with gender, age, and education as control variables. The test model is as illustrated in figure 1

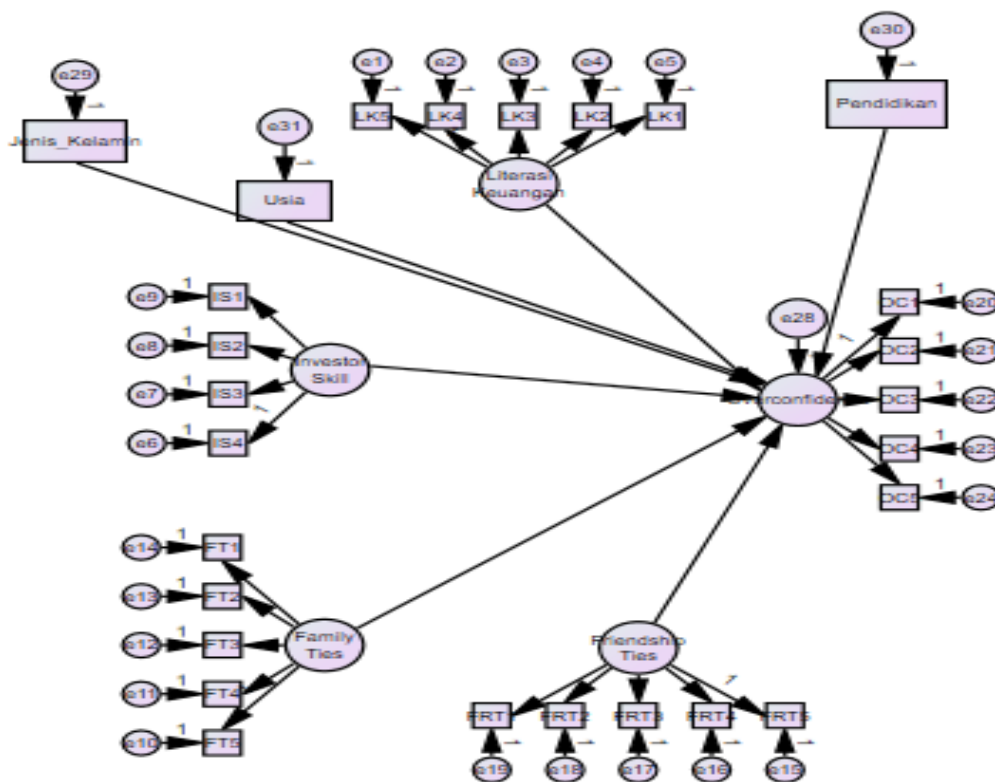


Figure 1: Hypothesis testing model

Based on the hypothesis testing model above, testing was carried out with the help of AMOS SEM software so that the test results were obtained as listed in table 2. The criteria for acceptance of the hypothesis if the CR value > 1.96 and probability < 0.05 (Collier, 2020).

**Table 2: Summary of Hypothesis Testing Results**

Description	Hypothesis	C.R.	P	Testing Results
Gender → Overconfidence	Control Variable	-1,008	0.313	Not significant
Age → Overconfidence	Control Variable	1.472	0.141	Not significant
Education Level → Overconfidence	Control Variable	0.768	0.442	Not significant
Financial Literacy → Overconfidence	H <sub>1</sub>	3.532	0.000	H <sub>1</sub> accepted
Investor Skill → Overconfidence	H <sub>2</sub>	2.520	0.012	H <sub>2</sub> accepted
Family Ties → Overconfidence	H <sub>3</sub>	4.650	0.000	H <sub>3</sub> accepted
Friendship Ties → Overconfidence	H <sub>4</sub>	3.064	0.002	H <sub>4</sub> accepted

Based on the test results in Table 2, it shows that the variables of financial literacy, investor skills, family ties and friendship ties have a significant influence on overconfidence in millennial stock investors because they have a CR value > 1.96 and probability < 0.05. In addition to endogenous variables. This study uses control variables, namely gender, age and education level as an effort to control the influence of the exogenous variables above. The results of the data analysis in table 2 show that the three control variables have no influence on the overconfidence of millennial stock investors.

## DISCUSSION

### The Effect of Financial Literacy on Overconfidence Behavior of Millennial Stock Investors

Financial literacy in this study is a form of knowledge and skills that affect a person's behavior. Based on the test results as has been done, it can be concluded that financial literacy has a positive and significant effect on the overconfidence behavior of millennial stock investors. The level of financial literacy will increase overconfidence (Bashar & Hammash, 2017). The results of this study strengthen the results of previous research conducted by Abdallah & Hilu (2015) who found that the level of overconfidence will increase when an investor's literacy level will increase.

Research conducted by Zwaan et al. (2017) found that financial literacy is a driving factor in the emergence of overconfidence so that it can be concluded that financial literacy is positively related to the level of investor overconfidence. This research strengthens the results of research conducted by Pikulina et al. (2017) who conducted research with experimental methods also concluded that the higher the level of financial literacy of investors, the higher the potential for overconfidence.

Seraj et al. (2022) revealed that millennial generation investors who have financial literacy even at a basic level but give themselves more credit, resulting in overconfidence behavior that has an impact on their financial position. This finding is in line with the findings of Sulhia et al. (2022) also found that financial literacy has an impact on overconfidence behavior in

millennial investors. Similar results were also revealed by research conducted by Usriyono & Wahyudi (2023). But the results of this study contradict research conducted by research conducted by Wadhwa et al. (2019) revealed that the level of financial literacy has no effect on investor overconfidence.

This study was conducted using 267 respondents in India using a questionnaire method and processed using regression to reveal that the level of financial literacy is not so important because most investors use the services of financial consultants to assist them in allocating their funds into investment projects.

### **The Effect of Investor Skill on Overconfidence Behavior of Millennial stock investors**

Investor skill in this study is defined as the cognitive ability of individuals in making decisions related to personal financial management. Based on the test results, it can be concluded that investor skills have a significant effect on the overconfidence behavior of millennial stock investors. The cognitive ability of an investor affects the level of overconfidence of an investor. This is expressed by Visser et al.. (2019) revealed that cognitive ability has a positive effect on overconfidence.

Research conducted by Pikulina et al. (2017) revealed that cognitive abilities, especially skills possessed by managers, will increase overconfidence in making their investment decisions. This research strengthens the research results from Duttie (2015) which states that the cognitive ability of an investor will increase the level of overconfidence as measured by overestimation. Over placement and over precision. But on the other hand, cognitive abilities as measured by one's performance skills have a negative relationship with the level of overconfidence.

This was revealed in research conducted by Feld et al. (2017) who found that people who have a low level of skill in their performance will actually have a higher level of overconfidence, while people with cognitive abilities in terms of high skills in completing their work will tend to be more accurate in their performance assessments. Findings from Littrell et al. (2019) revealed that there is a negative relationship between cognitive ability and the level of overconfidence.

People with low cognitive abilities will tend to have high levels of overconfidence while people who have high cognitive levels will tend to be realistic in assessing their performance.

### **The Influence of Family Ties on the Overconfidence Behavior of Millennial Equity Investors**

Family ties in this study are defined as family relationships based on personal relationships that influence a person's attitude. The results showed that family ties have a significant influence on the overconfidence behavior of millennial stock investors. The influence of family on changes in individual behavior has previously been associated with decision-making and risk behavior in line with overconfidence behavior. Family influence, especially in family companies, will be more prone to increase the potential for overconfidence behavior (F. S. Tsai et al.. 2018). Overconfidence behavior may also increase as generational diversity within family firms creates knowledge heterogeneity. (F. S. Tsai et al.. 2018). Khan & Tan. (2020)

revealing the existence of a family can have an impact on increasing the potential for behavioural bias, especially in investment decision making. Intergenerational families have a strong influence and suggestion in shaping behavior. (Knupfer et al., 2021).

### **The Effect of Friendship Ties on the Overconfidence Behaviour of Millennial stock investors**

Friendship ties are defined as stock investor friendship relationships that can influence the attitude or behaviour of a stock investor. Friendship ties have an impact on behaviour change including increasing susceptibility to behavioural bias. The results showed that friendship ties have a significant influence on overconfidence behaviour. Research conducted by Almaatouq et al. (2016) revealed that friendship can be a factor in changing one's behaviour. Friendship can be one of the factors that encourage the emergence of behavioural biases, one of which may be overconfidence (Altaf & Jan, 2023).

It is possible that there is information or experience provided in the friendship network so that they feel they have more abilities than other investors outside the friendship network. This supports the findings of Sukenik et al., (2018) which revealed that friendship relationships may spur the onset of overconfidence behaviour. These findings reinforce the findings of Cheng et al., (2021b) which reveals that overconfidence behaviour can be transmitted through social networks including friendship networks.

### **CONCLUSION**

This study aims to determine the factors that influence the overconfidence behaviour of millennial stock investors using the social network theory approach. The variables used in this study consist of exogenous variables, namely financial literacy, investor skills, family ties and friendship ties; endogenous variables, namely overconfidence and control variables consisting of gender, age and education level. Based on the test results, it shows that the four exogenous variables, namely financial literacy, investor skills, family ties and friendship ties have a significant positive effect on overconfidence so that it can be concluded that the fourth hypothesis of this study is proven.

### **Recommendations**

This study uses a social network theory approach represented by family ties and friendship ties variables that influence overconfidence behaviour in millennial stock investors. The results of this study indicate that there is an influence of variables in social network theory on the overconfidence behaviour of millennial stock investors, thus showing that the use of this theory expands previous studies on overconfidence behaviour, especially in millennial stock investors.

This study provides empirical evidence that family ties and friendship ties affect the overconfidence behaviour of millennial stock investors. This can also show that there is an influence of family relationships and friendship relationships in shaping a person's behaviour, including in this bias behaviour.



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