THE INVESTMENT DECISION OF MILLENNIAL GENERATION: AN ANALYSIS USING FINANCIAL LITERACY AND FINANCIAL BEHAVIOR

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OPEN ACCESS

How to cite this paper: Usriyono, E., & Wahyudi, S. (2023). The investment decision of millennial generation: An analysis using financial literacy and financial behavior. *Corporate Governance and Organizational Behavior Review, 7*(2), 8–14. https://doi.org/10.22495/cgobrv7i2p1

ISSN Online: 2521-1889
ISSN Print: 2521-1870

Received: 19.07.2022
Accepted: 10.03.2023

JEL Classification: A1, G11, G41, O16
DOI: 10.22495/cgobrv7i2p1

Abstract

This study aims to determine the factor of financial behavior that affects the millennial generation's individual investment decisions in Indonesia moderated by financial literacy. Four human behaviors, overconfidence, herding factor, trait anger, and trait anxiety, have been investigated using a sample of 100 respondents. The results of this study show a significant and positive influence on the variable of overconfidence, trait anger, and trait anxiety against investment decisions. In contrast, the herding variable does not have a significant effect but a positive value on the investment decision. The study results will add insight to investors about the investment decision process for the millennial generation in Indonesia. As a practical implication, it needs to conduct training programs, workshops, and seminars that create awareness, recognize financial behavior, overcome economic activity bias, and improve financial literacy (Atkinson & Messy, 2011; Bucher-Koenen et al., 2016). It recommends that investors ask the investment advisor, fund manager, and financial planner to make investment planning following the financial goals, risk profile, and profit that is expected to achieve economic well-being finally.

Keywords: Millennial Generation, Investment Decision, Behavior Finance, Financial Literacy

Authors' individual contribution: Conceptualization — E.U.; Methodology — S.W.; Validation — E.U.; Formal Analysis — E.U.; Investigation — S.W.; Resources — S.W.; Data Curation — E.U.; Writing — Original Draft — E.U. and S.W.; Writing — Review & Editing — E.U.; Visualization — S.W.; Supervision — E.U.

Declaration of conflicting interests: The Authors declare that there is no conflict of interest.

1. INTRODUCTION

The development of Indonesia's capital market as one of the community's alternative investments is assessed quite rapidly. Entering the era of globalization, Indonesia's government often socializes the public to invest in the capital market through the Indonesia Stock Exchange (IDX). Investors in the Indonesian capital market can boost the individual economy and encourage the national economy because the capital investment or the investor will make a company grow over the funds invested by the investor in the company of his choice.

At the end of the year 2019, the performance of the Composite Stock Price Index (IHSG) increased by 2.18% to the position of 6.329,31 IDR at the close of December 27, 2019, while in 2018, IHSG decreased to -2.54% at 6.194,49 IDR. Whereas the 2017 and 2016 JCI (Jakarta Stock Exchange Composite Index) still provided the advantages of 19.99% and 15,32%. The number of investors as per December 27, 2019, the Indonesia Central Securities Depository (KSEI) reached 2.478.243 or increased by 53.04% compared to Single Investor Identification (SID) at the end of December 2018 by 1.619.372. The demographic of investors in Indonesia is currently dominated by men — 59.41% and women — 40.59%, with details of investors aged 21–30 years — 44.62%, private employees — 53.69%, and educated scholars — 48.23%.

Behavioral finance argues that some psychological biases significantly affect the individual's investment decisions. In behavioral finance, psychological biases are used to learn and evaluate investment decisions taken by investors. It indicates the deviation of the market from efficiency and an individual's deviations from the theory of traditional finance. At the beginning of the eighteenth and nineteenth centuries, some classical economists as John Stuart Mill, David Ricardo, and Adam Smith, proposed human psychology's inclusion in assessing economic activity (Andrikopoulos, 2007). Some researchers (Muradoglu & Harvey, 2012; Davis et al., 2015; Kimeu et al., 2016) believed that economic activity and human perception are the social activities and the drivers of behavioral finance. However, many researchers have a consensus that both traditions influence an individual's investment decision and behavioral financial (Kimeu et al., 2016). There are rational and irrational individual investors in every market worldwide, and Indonesia is no exception (Davis et al., 2015; Kimeu et al., 2016).

In Indonesia, the participation of the millennial generation in the stock market is still very little. The fear of failure and the lack of awareness and knowledge about the investment concept are the main reason behind the reluctance of the Indonesian millennial generation to get involved in the stock market (Burki et al., 2018; Boscia et al., 2019). This study is conducted to determine how biased attitudes of overconfidence, herding, trait anger, and trait anxiety influence the investment decision of the millennial generation in Indonesia, which is moderated by financial literacy. The findings of this study contribute to providing more views about the biased behavior in the Indonesian capital market and to motivate the millennial generation to participate more in the financial markets, particularly in the capital market in Indonesia stock exchange, and can be used as a reference by investors and financial advisors about the investment decision-making process.

The millennial generation (Generation Y) is defined as the generation born in the years 1981–1999, according to Martin and Tulgan (2002). Based on Badan Pusat Statistik (BPS) data (2018), it was recorded that the millennial generation's population is as many as 90 million people. The Indonesian population between the ages of 20–40 in 2020 amounted to 92 million people or 34% of the total Indonesian population of 271 million. The number is greater than the number of Generation X (53 million people or 20%), or the Baby-Boomer generation (35 million people or 13%). It proves that the greater the population, the more significant potential the millennial generation can generate for the betterment of the nation.

The millennial generation is curious and wants to learn about high savings and investments. However, the general reason is that they cannot save and invest because there is no extra money. However, if you take a closer look, most of this millennial generation's spending is spent on buying the latest gadgets and traveling to new places. Another habit that is highlighted is that this generation chooses more practical and inexpensive things, such as daily transportation to campus or work, using online transportation rather than buying it yourself — renting an apartment or boarding house for a place to live instead of buying your own house. It can result in decreased asset ownership and financial instability. Investing in something requires a commitment to set aside current money to make a profit in the future. Due to inflation, and as time goes on, the value of the currency that we have today will certainly experience depreciation. For this reason, it is very important to make investments to maintain the value of our savings so that it does not decrease due to the effects of inflation. It all depends on the investment chosen because one individual has different behavior in investing. Basically, all investment options have advantages on one side and opportunities for losses or risks on the other (Ratnasari & Imron, 2021).

The structure of this paper is structured as follows. Section 2 reviews the relevant literature on investment decisions, overconfidence, herding bias, the trait anger, traits anxiety, financial literacy moderates behavioral finance to investment, and decisions. Section 3 analyzes the methodologies used to conduct empirical research using measurement, survey, and sample. Section 4 describes the results and discussion of the research, including demographic information, reliability analysis, moderated regression analysis (MRA) results, and hypothesis analysis. Then Section 5 is the conclusion of the research.

2. LITERATURE REVIEW

2.1. Investment decisions

Investment is the process of placing or exchanging money on financial asset to get benefits and returns to be consumed and meet the economic aims in the future. The type of investment can vary depending on the investors' financial goals and risk profile. The right investment will improve financial well-being. Every investor wants to make optimal investment decisions (Sharpe, 1964). According to Merton (1987), optimal and rational investment decisions depend on previous financial knowledge.

Various factors affect both the rationality of investors and lead to irrational behavior of individual investors. This study examines financial intelligence (financial literacy) as a moderator of psychological bias, and personal characteristics (such as overconfidence (overconfidence), factors of herding, the nature of anger (trait anger), and the anxiety trait) and their influence on an individual's investment decisions.

2.2. Overconfidence

Overconfidence refers to a biased way of looking at a situation. Adel and Mariem (2013) described the impact of the bias of overconfidence on investment decisions focused explicitly on volatility and trading volume. Dittrich et al. (2005) revealed that the more investors experience overconfidence, the lower the investing accuracy.

Rahman and Gan (2020) conducted a study in Malaysia involving 502 generation Y data. Their research stated that overconfidence influences negativity in investment decisions and behavioral finance significantly affects individual investors' stock investment decisions. Investors must fix the weakness of behavioral finance so that it will be more appropriate in investment decision-making.

After reviewing the relevant literature, the authors conclude that an overconfidence attitude harms investment decision-making. Overconfident investors tend to the direction of the wrong or risky investment, while overtrading can harm their return. The more investors show excessive confidence, the lower the accuracy of investment decisions.

H1: Overconfidence has a significant effect and positive impact on the investment decisions of the Indonesian millennial generation.

2.3. Herding bias

Herding bias is defined as the behavior of individuals in which a particular course of action is rationalized because "everyone else" is doing it. Both academic researchers and practitioners will always investigate herding bias in the financial market. Tan et al. (2008) stated that herding bias could cause the stock price to deviate from its fundamental value. It can affect the theory's view on the price asset determination and the return and risk model attribute. However, practitioners are concerned about how the effect of herding bias is used to seek profit from price irregularities in stocks. Bennet et al. (2012) show that the internet has facilitated quick access and affordable trade and information in this new era. The process of delivery and trade information has changed. Investors can react more quickly to new information through online trading. Investor sentiment is much more easily affected by market news and variables today.

H3: Herding has a significant effect and positive impact on investment decisions of the Indonesian millennial generation.

2.4. The trait anger

The trait anger refers to the old personality characteristics that appear to become angry with little provocation. Lerner and Keltner (2001) revealed that anger was positively correlated with optimistic risk estimates. Optimistic confidence will be activated by anger. Besides, they interpret that anger emotion biases only adverse events. Slovic et al. (2004) described that the individual emotional state could affect their decision-making, which involves how individuals evaluate an event. Without cognitive assessment or personal interpretation, emotions cannot assign the interpretation of the situation (Beck, 1999; Eysenck, 1997).

H5: Trait anger has a significant effect and positive impact on investment decisions of the Indonesian millennial generation.

2.5. The trait anxiety

The uncertainty of the investment share profit in the future causes anxiety among investors and results in reduced investment product attraction. Anxiety can arise because of attention or concern for things or a specific mission. Therefore, investors are increasingly anxious if they have more information. Anxious Investors tend to maintain the strategy of their portfolio and are reluctant to change. The reason for the inflexible strategy and the inertia of investors' finances can be explained by anxiety. According to Caplin and Leahy (2001), trait Anxiety causes individuals to be less confident. It reduces the chance of individuals gaining knowledge related to investment, ultimately contributing to the choice not to invest (Van Winden et al., 2011). Gambetti and Giusberti (2012) found that trait anxiety was negatively correlated with investment decision-making. Bensi and Giusberti (2007) stated that anxiety leads to avoiding investing to ensure the security of current capital. The purpose of an anxious individual is to reduce the feelings of anxiety itself by reducing uncertainty. Thus, we assume the following:

H7: Trait anxiety has a significant effect and negative impact on investment decisions of the Indonesian millennial generation.

2.6. Impact of financial literacy on behavioural finance

Financial literacy is synonymous with financial knowledge (Hilgert et al., 2003; Lusardi & Mitchell, 2011; Bucher-Koenen et al., 2016). Lusardi and Mitchell (2007, 2011) conceptualized financial literacy as knowledge of financial concepts and the essential ability to perform simple calculations. In 2009, the Organization for Economic Co-operation and Development/International Network on Financial Education (OECD/INFE) developed a toolkit to measure financial literacy. First, it is 14 member countries, and then the OECD conducted an international survey involving with 30 member countries in 2016 to measure the level of financial literacy and financial inclusion. The definition of financial literacy issued by the OECD/INFE shows that although a person already has the knowledge and ability to act, attitude or behavior is the driving force to influence people to make decisions. Among those attitudes are to perform long-term financial planning or consumptive attitudes. Financial literacy can be measured by three components using an approach (Areiqat et al., 2019).

As mentioned above, analyzing behavioral bias and financial literacy is essential to understand actual investors' behavior. Many studies show that financial literacy and prejudice affect investors' behavior. However, these two concepts' relationship is vital in financial decisions and investors' behavior. By referring to the relationship between the level of financial literacy and investment decisions, it has been observed that investors with high financial literacy select and use different stocks analysis techniques when making investment decisions compared to investors with low financial literacy (Tinghög et al., 2021; Bannier & Schwarz, 2018). Investors who are very well at finance literacy prefer to use financial publications such as the company's financial statements, especially the country's macro and macro-economy fundamental condition. Investors with low financial literacy use more advice from family, friends, and stockbrokers in purchasing on the Indonesia stock exchange. Most investors show overconfidence, herding behavior, trait anger, and trait anxiety because their financial literacy is not right, so they cannot make investment decisions appropriately. Therefore, we assume the following:

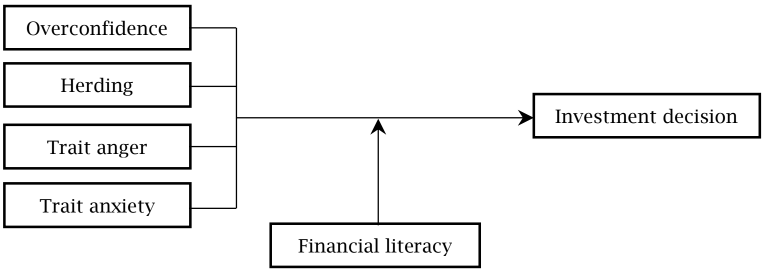
H2: Financial literacy has a role of moderation in the relationship between overconfidence bias and investment decision-making.

H4: Financial literacy has a role of moderation in the relationship between herding bias and investment decision-making.

H6: Financial literacy has a role of moderation in the relationship between trait anger bias and investment decision-making.

H8: Financial literacy has a role of moderation in the relationship between trait anxiety and investment decision-making.

Figure 1. Research model



3. RESEARCH METHODOLOGY

In this study, the data analysis technique used was an empirical method using Statistical Package for the Social Sciences (SPSS) Version 25 (IBM SPSS Statistics 25.0) software. This study has variables that estimate the model and assess the direct relationship hypothesis. This study investigates the phenomenon of investment decisions based on financial behavior moderated by financial literacy. Financial behavior is assessed using overconfidence, herding, anger, and anxiety indicators. Financial behavior combines aspects of one's financial ability and psychological ability to manage and utilize financial resources as a basis for making decisions for daily needs and financial planning in the future or for business activities that are owned. Financial literacy is knowledge about finance in terms of financial institutions and concepts as a whole, as well as the ability to use financial products and manage personal finances to make short-term and long-term decisions. This study uses a survey method using a questionnaire that the respondents have filled out. After the questionnaires were collected, validity and reliability tests were carried out, after which the researcher could analyze the MRA results and test the hypotheses.

3.1. Measurement

For measuring financial behavior, overconfidence is measured using four items of Barber and Odean (2001), Hirschey and Nofsinger (2008). Herding is measured with four items adapted from Kumar and Goyal (2015). The trait anger is measured by using ten statements from Gambetti and Giusberti (2012), and eight items of the trait anxiety statement are adapted from Gambetti and Giusberti (2012); Kengatharan and Kengatharan (2014). Financial literacy is described by seven statements, financial behavior towards financial problems is described by eight statements, financial attitude — three statements adopted from Atkinson and Messy (2011), the OECD (2016), a toolkit for measuring financial literacy 2018, and the Financial Services Authorities' (FSA) survey of financial literacy and financial inclusion 2019. Investment decisions are measured using 3 statement items adapted from Kourtidis et al. (2011). The statements used are modified and adjusted to the context and needs of the research.

3.2. Survey and sample

This study uses primary data with data collection techniques in the form of a survey questionnaire. The questionnaire was distributed through four stages: (1) a letter of application to fill the questionnaire and instructions for filling the questionnaire; (2) the identity of the respondents; (3) a list of statements for each variable; and (4) gratitude in the column which will be filled if the respondent requires a summary of the research results. This questionnaire contains research statements following the variables studied in this research, where each questionnaire question is enclosed. All survey questions use a Likert scale of five points ranging from 1 — strongly disagree to 5 — strongly agree. The Likert scale is used to assess personal psychological constructs (Nemoto & Beglar, 2014).

This study's population is the millennial generation, born between 1981 and 1999 in Indonesia. The respondents briefly explained the survey topic and politely asked to fill out a questionnaire. They were encouraged to answer properly given that this information will remain confidential. The researchers distributed 180 questionnaires using the google form through email and social media like WhatsApp. One hundred respondents completed the questionnaire, such as the gender of respondents (men or women), and shared the type of work, student status, faculty, insurance agent, financial planner, financial advisor, bank employees, business owners, and other professionals.

4. RESULTS AND DISCUSSION

4.1. Demographic information

The sample of demographic information is given in Table 1. Gender is distributed fairly, with 60% men and 40% women. Based on marital status, the largest group is the millennial generation with a single status (never married), 45% married, and 1% divorced.

From the work aspect, 8% are students, 59% are employees, 12% are entrepreneur, 10% are professional, and 11% are others. The age group shows 46% senior millennials from 1980–1990, and 54% junior millennials from 1991–1998. The group by the level of education indicates 35% postgraduate, 55% undergraduate, 4% diploma, and 6% in high school. The group of monthly earnings indicates a 32% group with revenues 1–5 million IDR, a 20% group with income between 6–10 million IDR, 21% group with revenue 11–15 million IDR, as well as 27% group with revenue above 15 million IDR.

Table 1. Demographic information of respondents

Characteristics	*%*
Gender	
Men	60%
Women	40%
Marital status	
Single	54%
Married	45%
Divorced	1%
Job status	
University student	8%
Employee	59%
Entrepreneur	12%
Professional	10%
Others	11%
Age	
Senior millennial 1980–1990	46%
Junior millennial 1991–1998	54%
Education	
High school	6%
Diploma	4%
Undergraduate	55%
Postgraduate	35%
Income	
IDR 1.000.000–5.000.000	32%
IDR 6.000.000–10.000.000	20%
IDR 11.000.000–15.000.000	21%
> IDR 15.000.000	27%

4.2. Reliability analysis

A reliability test is conducted in each construct of this study using the coefficient alpha value ranging from 0.742 to 0.946. Test reliability is used to see how well the measurements can explain certain constructs in investigating all the underlying items' internal consistency. Thus, to evaluate this study's reliability, the load factors from the items below 0.60 are discarded. The MRA results were shown in Table 2.

4.3. MRA result and hypothesis analysis

Based on the results of multiple regression and MRA is given in Table 3.

Table 2. MRA result

Variables	*Adj. R^2*	*Sign*	*t-value*
Model 1: Overconfidence to investment decisions	0.155	0.000	4.232
Model 2: Overconfidence to investment decisions moderated by financial literacy	0.285	0.000	4.480
Model 3: Herding to investment decisions	0.006	0.530	6.30
Model 4: Herding to investment decisions moderated by financial literacy	0.254	0.000	5.925
Model 5: Trait anger to investment decisions	0.056	0.010	2.620
Model 6: Trait anger to investment decisions moderated by financial literacy	0.280	0.000	5.613
Model 7: Trait anxiety to investment decisions	0.054	0.011	2.578
Model 8: Trait anxiety to investment decisions moderated by financial literacy	0.278	0.000	5.601

The equation of the regression model obtained:

Model 1

$$Y = 5.235 + 0.330X1 \quad (1)$$

Model 2

$$Y = 7.591 - 0.190(X1) + 0.005(X1 * Z) \quad (2)$$

Model 3

$$Y = 10.461 + 0.37X2 \quad (3)$$

Model 4

$$Y = 10.806 - 0.528(X2) + 0.008(X2 * Z) \quad (4)$$

Model 5

$$Y = 9.007 + 0.063X3 \quad (5)$$

Model 6

$$Y = 10.181 - 0.237(X3) + 0.004(X3 * Z) \quad (6)$$

Model 7

$$Y = 9.318 + 0.070X4 \quad (7)$$

Model 8

$$Y = 10.262 - 0.292(X4) + 0.005(X4 * Z) \quad (8)$$

where,
- *Y* is an investment decision;
- *X1* is an overconfidence;
- *X2* is a financial literacy;
- *X3* is a herding;
- *X4* is a trait anger;
- *X5* is a trait anxiety;
- *Z* is a financial literacy.

Table 3. Hypothesis analysis

Hypothesis	*Statement of hypothesis*	*Findings*
H1: OC > ID	Overconfidence has a significant effect and positive impact on investment decisions	Accepted
H2: OC > FL > ID	Overconfidence has a significant effect and positive impact on investment decisions moderated by financial literacy	Accepted and strengthened by financial literacy
H3: HR > ID	Herding has a significant effect and positive impact on investment decisions	Rejected
H4: HR > FL > ID	Herding has a significant effect and positive impact on investment decisions moderated by financial literacy	Accepted and strengthened by financial literacy
H5: SM > ID	Trait anger has a significant effect and positive impact on investment decisions	Accepted
H6: SM > FL > ID	Trait anger has a significant effect and positive impact on investment decisions moderated by financial literacy	Accepted and strengthened by financial literacy
H7: SC > ID	Trait anxiety has a significant effect and positive impact on investment decisions	Accepted
H8: SC > FL > ID	Trait anxiety has a significant effect and positive impact on investment decisions moderated by financial literacy	Accepted and strengthened by financial literacy

5. CONCLUSION

The results showed that financial literacy improves or strengthens all variables' influence on the study's investment decisions: overconfidence, herding, trait anger, and trait anxiety. This study uses primary data to measure the investors' investment decisions that, distinguish from previous research using secondary data. Based on the research findings above, this research brings some recommendations, especially for the individual investor, wealth manager, financial advisor, investment banking, and the Indonesia stock exchange's capital market instigators. The study recommends overcoming the behavior bias of overconfidence, herding, and trait anger. To overcome those biases, it needs to conduct training programs, workshops, and seminars that create awareness and the ability to recognize behavioral finance and cope with such behavior. Improving financial literacy should be offered to prospective and individual investors, especially the Indonesian millennial generation, who invest in the Indonesian stock exchange. The study also recommends that each investor seek advice from the investment adviser, fund manager, and financial planner who is experienced in the investment field to advise those who make investment planning under the financial goals to achieve financial well-being.

This research is important because the millennial generation is an asset that determines the future of a country. Therefore, in order to be able to make investment plans based on financial goals to achieve financial prosperity, it is necessary to have programs that can create awareness and the ability to recognize behavioral finance and overcome the behavior of the millennial generation, as described in this study. The limitation of this study is that only 180 questionnaires were used as research samples. With such a large population in Indonesia, it seems that the sample used in this study is still lacking. Therefore, the authors also encourage future research to be carried out with discussions like in this study using a larger sample of the research population so that the results obtained are more accurate.

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