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STOCK INVESTMENT BEHAVIOR OF THE MILLENNIAL GENERATION: THE MODERATING ROLE OF FINANCIAL LITERACY

Andreas Gelbert Hariputra Alva[1], Maria Rio Rita[2]
[1]Department of Management, Faculty of Economics and Business, Universitas Kristen Satya Wacana
[2] Department of Management, Faculty of Economics and Business, Universitas Kristen Satya Wacana
Jl. Diponegoro 52-60 Salatiga 50711
E-mail: 912019028@student.uksw.edu maria.rita@uksw.edu

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Abstract

The purpose of this research is to analyze the investment behavior of the millennial generation in Indonesia. To the best of the researcher's knowledge, there are no studies that place financial literacy as a moderating factor on the influence of individual characteristics and the social environment on millennial stock investment behavior. This study aims to examine: (1) Does income have an effect on the millennial generation's stock investment behavior? (2) Does gender affect the stock investment behavior of the millennial generation? (3) Does the social environment affect the stock investment behavior of the millennial generation? (4) Does financial literacy moderate the influence of income factors on the millennial generation's stock investment behavior? (5) Does financial literacy moderate the effect of gender on the millennial generation's stock investment behavior? (6) Does financial literacy moderate the influence of social environmental factors on the millennial generation's stock investment behavior? The sample of this research was determined based on the purposive sampling method. There were 144 respondents selected from the millennial generation who were in the age range of 21-41 years old and had invested in stocks. The data collection was carried out online by distributing questionnaires through Google Forms in a WhatsApp group and a stock investment community Telegram group. The independent variables in this research are gender, income, and social environment. The dependent variable is investment behavior, while financial literacy is the moderating variable. The analysis technique used was a Moderated Regression Analysis (MRA). This research found that social environment has a significant positive effect on investment behavior, and there is evidence that financial literacy moderates the influence of the social environment on the stock investment behavior of the millennial generation. This research contributes in the field of personal finance, especially for the millennial generation when they want to invest in stocks, by considering external and internal factors.

Keywords: *investment behavior, financial literacy, social environment*

INTRODUCTION

BPS stated that the number of Millennials is 33.75 percent of the total population of Indonesia. Of the 67.02 percent of Indonesia's productive age population, it was found that around 50.36 percent are Millennials. Based on experts' opinions from various countries, the millennial generation is those who were born from 1980 to 2000. Wise personal financial management should be done from an early age, and Millennials are no exception. At that age, it is very important to manage good finances for your own future, such as preparing for marriage, planning for your children's education, arranging for retirement, and even achieving financial freedom.

Personal financial planning is efficiently carried out by individuals to ensure their financial security not only during work but also in retirement (Lai & Tan, 2009; Nurhidayah, 2018). A person's ability to manage one's finances is called financial intelligence. Good financial intelligence is characterized by high financial literacy (Anastasia, Setiadiwiria, & Kunto, 2019). According to the third National Financial Literacy Survey (SNLIK) conducted by the Financial Services Authority (OJK) in 2021, Indonesia's financial literacy index reached 38.03 percent and the financial inclusion index was 76.19 percent. This figure is an increase compared to the results of the 2016 OJK survey, namely the financial literacy index of 29.7 percent and the financial inclusion index of 67.8 percent. Although increasing but still far below neighboring countries, financial inclusion in Singapore reached 98 percent, Malaysia 85 percent, and Thailand 82 percent (Halim, 2020). In fact, according to Lusardi, Mitchell, and Curto (2010), financial literacy must be recognized as an important skill to participate in today's economy.

Investment behavior is influenced by individual characteristics. Charles and Kasilingam (2013) revealed that age has a significant effect in determining one's investment behavior. Young investors tend to be more willing to take risks than older investors. Other studies mentioned that overall risk aversion occurs in young people and the elderly, but with greater risk aversion in older people (Albert & Duffy, 2012). Cudmore, Patton, Ng, and McClure (2010) said that Generation X is considered as being a bit late in understanding investment from an early age. Generation X is more likely to entrust their funds with investment managers to manage their investments, so that their investment pattern is passive. Most of Generation Y is in the workforce, while Generation Z has not yet entered the workforce (Nurhanisah, 2020). The researchers are interested in examining the investment behavior of Generation Y or what is often referred to as the millennial generation because the millennial generation is considered suitable for research because they were born between 1980 and 2000, which according to the researchers is generally thought to have both sufficient knowledge and funds to invest in the capital market. The researchers consider Generation Y or Millennials to be the right time to immediately start investing and be able to see the results.

In general, the majority of the millennial generation already knows various types of investment products from conventional (gold and property) to modern ones (stocks, mutual funds, foreign exchange, bonds, and futures indices). Although most of the millennial generation already knows about various investment products, their ownership of investment products is still very low (Ali, Purwandi, Nugroho, Ekoputri, & Halim, 2017). It can also be seen that the proportion of income allocated to investments tends to be small. The millennial generation saves 10.7 percent of their income, while 51.1 percent is spent on consumption, and only 2 percent is allocated for investment (Utomo, Lubis, & Sudradjat, 2019). In fact, according to research conducted by the Wharton Pension Research Council, Millennials must set aside a minimum of 40 percent of their income for the future in order to enjoy a decent standard of living in retirement (Rasyid, 2020). When viewed from the investment allocation which is only around 2 percent, the millennial generation is less aware of the importance of investing. This is in contrast to data from the Indonesia Stock Exchange which shows that millennial investors dominate 59.72 percent, which means that more than half of individual investors in IDX belong to the millennial generation (D. A. Putra, 2019). If viewed from the data above, although in terms of the millennial generation population, it is only 33.75 percent of the total population of Indonesia, but if you look at the IDX data, investors who are included in the millennial generation include 59.72 percent. This indicates that the millennial generation already has the awareness to invest. However, this needs to be investigated further because investment intentions alone are not enough to ensure one's future. Good investment behavior is needed so that stock investments do not bring losses to investors. Judging from their risk profile, the millennial generation is considered brave to take risks when investing because they do not tend to have big obligations (Onasie & Widoatmodjo, 2020).

Several previous studies have examined various aspects related to investment behavior. Previous research examined age on investment behavior (Charles & Kasilingam, 2013; Margaretha & Pambudhi, 2015), gender on investment behavior (Booth, Cardona-Sosa, & Nolen, 2014; Deb & Chavali, 2009; Sebai, 2014), as well as the effects of income and gender, financial knowledge, and financial attitudes on investment behavior in private employees in Kudus (Setiawan, Wahyudi, & Mawardi, 2016). A study on the influence of financial literacy levels, income, and gender on investment decision behavior with unmarried employee respondents was also carried out by Putri and Rahyuda (2017). Research on the influence of the environment on investment awareness was conducted by Rasyid (2020).

In addition to individual characteristics, investment behavior can also be caused by interactions with the social environment (Septyanto, 2013). The social environment is divided into the family environment, peer environment, and work/campus environment. The family environment is the environment that most people have the greatest interactions. One's environment of peers, coworkers, or campus acquaintances can also interact regularly with us. Now, social media can facilitate and accelerate human interactions, which leads to its influence on a person's behavior. The social environment is one of the factors that can influence a person or group to be able to take an action and change the behavior of each individual (Sobaya, Hidayanto, & Safitri, 2016). The social environment can provide information about investments that can make people around them interested in making similar investments, so that it affects individual investment behavior.

This study strives to analyze the investment behavior of the millennial generation in Indonesia. The samples of previous studies did not focus on the millennial generation. Besides that, it did not include the impact of social environmental factors that were thought to influence a person's investment behavior. To the best of the researcher's knowledge, there are no studies that place financial literacy as a moderating factor on the influence of individual characteristics and the social environment towards millennial stock investment behavior. This is the reason why the researcher conducted this study. Based on the research problems above, the following research questions are put forth: (1) Does income affect the stock investment behavior of the millennial generation? (2) Does gender affect the millennial generation's stock investment behavior? (3) Does the social environment affect the stock investment behavior of the millennial generation? (4) Does financial literacy moderate the effect of income on the millennial generation's stock investment behavior? (5) Does financial literacy moderate the influence of gender on the millennial generation's stock investment behavior? (6) Does financial literacy moderate the influence of the social environment on the millennial generation's stock investment behavior?

The benefits of this research are that it can add to the perspectives of personal financial management studies, especially in relation to external factors, namely the social environment and individual characteristics of the millennial generation towards their stock investment behavior. The findings of this research can also be a reference for Millennials who aspire to and already invest in stocks, so that they can make wiser investment decisions.

Hypothesis Development

According to Artaman, Yuliarmi, and Djayastra (2015), income sources are divided into three groups. First, there is income from salaries or wages. A salary or wage is the income an individual earns after working for a certain period of time, usually one month. However, there are also salaries that are paid per day or per week. Second, there is income from one’s own business; the income comes from the total sales of goods or services after deducting the total cost of production. For example, there is income from entrepreneurship. Third, there is other income. Usually, other income is obtained outside of a salary and one’s own business. Other income is obtained without any business activities, for example the results of renting out a house, a car, other valuable assets, or from investments.

Men and women have several special conditions that are different, in terms of the biological, physical, or psychological aspects of each individual. This is the source of the different functions and roles that every man or woman has. The differences in the roles and functions that must be carried out by women and men above, if looked at closely can be realized that the actions done by women are different from men (Nurhidayah, 2018). Women generally have multiple roles in everyday life. The scope of a woman’s activities also includes three areas simultaneously, namely her role in the family, the environment where she lives, and the work environment (Nurhidayah, 2018).

Financial literacy is the ability and knowledge to manage finances to improve an individual’s living standards with the aim of achieving prosperity (Lusardi & Mitchell, 2014). Financial literacy is related to individual financial management which includes investment decisions, funding, and good asset management (I. P. S. Putra, Ananingtiyas, Sari, Dewi, & Silvy, 2016). It can be concluded that financial literacy is an individual’s financial ability to manage one’s finances, which includes investment decisions, funding, and asset management well with the aim to achieve prosperity.

Howe and Strauss separated generations based on the similarity of the time of birth and the similarity of historical events. Other researchers also categorize generations with different labels, but they generally have the same meaning. Millennials are defined as individuals born between 1982 and 2002 (Hanson-Rasmussen & Lauver, 2018). According to a TechInAsia article, Millennials are a generation that likes authentic content, contains 24/7 social media users, likes to collaborate, and also has a high curiosity.

Investment is a sacrifice made in the present with the aim of obtaining greater benefits in the future (Setiawan et al., 2016). Investment behavior is a science that studies how humans respond and react to existing information and then use it to make decisions that can optimize the rate of return-on-investment decisions by taking into account the risks inherent in it (the elements of human attitudes and actions are the determining factors in investing) (Aminatuzzahra, 2014). According to Cahyadi (2010), investment behavior preferences are divided into three, namely: short-term and more risky, neutral in looking at the situation, and long-term risk aversion. Furthermore, based on Agrawal and Kumar (2020), investment behavior changes along with changes in various intrinsic and extrinsic factors of an investor.

Intrinsic factors are factors that come from within and extrinsic factors are factors that influence from the outside.

The social environment is one of the factors that can affect a person. According to Annajah and Falah (2016), the social environment can be divided into two parts, namely that which has a direct effect and that which has an indirect effect. The social environment that has a direct influence includes the family environment, peer environment, and neighboring environment. In the context of stock investments, this can be in the form of teaching to invest from an early age, as well as encouraging those close to you to invest. The social environment that has an indirect influence includes online communities and information from social media or the Internet. This is in the form of independent learning via the Internet, becoming a member in a stock investment group, and following the advice of well-known figures in the investment world (Nugraheni, Wiyatini, & Wiradona, 2018).

Effect of Income on the Millennial Generation's Stock Investment Behavior

An income is a strong indicator of investment patterns made by investors (Agrawal & Kumar, 2020). An income provides a significant difference towards investment behavior. There are differences between low- and high-income groups in their investment behavior. Low-income investors will choose short-term investments even though they have a higher risk, because they hope that it will help them to earn additional income immediately. On the other hand, higher-income investors tend to invest long-term because their income is sufficient to finance their daily livelihoods, and the rest is invested long-term. This phenomenon occurs because they believe that this method can help them get additional income immediately. This is in line with research done by Shanmugasundaram and Balakrishnan (2010), in that the higher the income, investors tend to place their investments in lower risk investments. This happens because they are afraid that the principal investment (start-up capital) will decrease, because their main purpose of investing is for future savings.

H1: Income has a significant effect on the millennial generation's stock investment behavior.

Effect of Gender on the Millennial Generation's Stock Investment Behavior

Booth et al. (2014) found that women are less likely to make risky choices than men. Women are more likely to avoid risks by choosing safe investments and stable growth, be careful in choosing investments, and start investing more slowly (Deb & Chavali, 2009). On the other hand, men are more confident, less compliant, like to take risks, process information more quickly, and are more likely to invest in risky instruments that provide more returns (Deb & Chavali, 2009). Women tend to invest more in low-risk investments and are therefore found to be more risk-averse than men (Hibbert, Lawrence, & Prakash, 2013). Women are more likely to avoid risk or can be called risk averse in their behavior towards stock investments. This phenomenon occurs because of the position of women who tend to avoid investing in risky assets such as stocks. The instability of the stock return rate encourages female investors to prefer a stable income, so that it affects their intention to invest in stocks in the future (Pak & Mahmood, 2015).

H2: Gender has a significant effect on the millennial generation's stock investment behavior.

Effect of the Social Environment on the Millennial Generation's Stock Investment Behavior
According to the reasoned action theory, if someone is evaluated and advised to act, and if the individual thinks that other people will suggest that one acts, the result is a higher intensity and the person will be motivated to do that (action) (Widayat, 2010). The social environment (family, peers, and neighbors) influences an individual because they interact with the individual and can influence the person. The influence of the social environment on investment behavior can be seen in the presence of financial advice. There is a tendency for millennial investors not to use their financial literacy skills and only go along (Budiarto, 2017). Environmental factors have a significant influence on investment awareness of productive age in the city of Bandung (Rasyid, 2020). When the influence of the social environment is high, individuals tend to take risks and choose short-term investments and when the influence of the social environment is low, they tend to avoid risks and invest in the long-term. This happens because the greater the influence of the social environment, the greater the risk they face because they do not analyze themselves but follow the advice of others. So, the social environment has a negative effect on the stock investment behavior of the millennial generation, which means the greater the influence of their social environment, they will tend to be risk takers.
H3: The social environment has a negative effect on the millennial generation's stock investment behavior.

Effect of Income on the Millennial Generation's Stock Investment Behavior with Financial Literacy Moderation

Investors with low financial literacy prefer low-risk assets such as deposits, while individuals with higher financial literacy prefer stock investment instruments and even foreign exchange (Aren & Zengin, 2016). Jonubi and Abad (2013) claimed that financial literacy has a significant impact on individual savings. It was also found that financial literacy is able to improve financial management skills and increase confidence in institutions that the money invested is safe and well managed. Individuals who have high financial literacy will be more willing to take risks. With good financial literacy, individuals with low incomes will have more risk-taking behavior in investing. As for individuals who have high incomes, with their financial literacy, they will change from being risk averse to being risk takers.
H4: Financial literacy can moderate the effect of income on the millennial generation's stock investment behavior.

Effect of Gender on the Millennial Generation's Stock Investment Behavior with Financial Literacy Moderation

When they have financial expertise, women become more daring in investing. With good financial literacy, women will change from being risk averse to being risk takers (Sebai, 2014). As for men, having good financial literacy will strengthen their behavior to become risk takers. Furthermore, according to Awais, Laber, Rasheed, and Khursheed (2016), higher investment experience and financial literacy will lead to greater risk tolerance, and investors will then choose riskier investments to match a high level of risk tolerance. In research conducted by (Hsu, Chen, Huang, & Lin, 2021), female students under the age of 30, who have low levels of personal financial literacy, tend to have wrong opinions and investment decisions.

H5: Financial literacy can moderate the influence of gender on the millennial generation's stock investment behavior.

Effect of the Social Environment and Stock Investment Behavior with Financial Literacy Moderation

Adequate financial knowledge is needed to avoid losses when investing in the capital market, such as in stock investment instruments (Hati & Harefa, 2019). Pradikasari and Isbanah (2018) considered suggestions from expert investors as being more appropriate in predicting good investments, so that they participate in buying the shares. Investors use social referrals to strengthen their beliefs in factors that can support the analysis they have done when they need additional confidence in choosing a stock (Masrurun & Yanto, 2015). If investors' financial literacy is high, they will only use the social environment as a reference to confirm their analysis. Therefore, it can be indicated that financial literacy can strengthen the influence of the social environment and investment behavior. Because of the greater risk tolerance, the increase in self-confidence due to social referrals and supported by good financial literacy, they become more willing to take risks. If there is not enough financial literacy and they only rely on advice from the social environment, investors will tend to play it safe and not be brave enough to take risks (risk averse) or be neutral (risk neutral).

H6: Financial literacy moderates the influence of the social environment on the stock investment behavior of the millennial generation (becoming a risk taker).

RESEARCH METHODS

This study is considered as quantitative research with a statistical inferential approach. This type of statistics is used to draw conclusions on the characteristics of a population by utilizing information from samples generated from descriptive statistics. The analysis technique used was a Moderated Regression Analysis (MRA), in which the regression equation contained an element of interactions (the multiplication of two or more independent variables).

Population and Sample

The population of this study was the millennial generation, namely men and women who were born around 1980 - 2000 or who are currently around 21 to 41 years old. The number of investors in Indonesia is approximately 5 million people and 70 percent of those are under 40 years old. Therefore, it can be concluded that the population of investors under 40 years of age is approximately 3.5 million (also including Gen Z), if calculated by the Slovin formula:

$$\text{Sample}=N/(1+Ne^2) \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots(1)$$

with a margin of error of 10 percent, so that about 100 samples had to be taken:

$$\text{Sample} = 3{,}500{,}000/\ (1+3{,}500{,}000 \times 10\%^2)$$

$$\text{Sample} = 3{,}500{,}000/35{,}001 = 99 \text{ if rounded up to become } 100.$$

Two hundred questionnaires were distributed online. Of the 159 filled in, only 144 samples were eligible for further processing. The sampling method used was purposive sampling with the criteria for the individuals to be born between 1980 - 2000 and who had invested in stocks. The questionnaires were distributed through Google Forms via a WhatsApp group and the stock investment community Telegram group.

Variable Measurements

The variables in this study consisted of income, gender, and social environment as independent variables, as well as investment behavior as the dependent variable and the moderating variable was financial literacy. Each variable was measured through the following indicators (Table 1) and modified from various sources.

Table 1. Research Variables

Variable	Definition	Indicator
Income	The return that a person gets after working for a certain period of time (Artaman et al., 2015).	1. <2,999,999 2. 3,000,000 – 5,999,999 3. 6,000,000 – 8,999,999 4. 9,000,000 – 11,999,000 5. >12,000,000
Gender	The distinguishing characteristics of rights, responsibilities, behavior, and individual traits, based on the socio-cultural aspects existing in society, and not fixed.	1. Male 2. Female
Financial Literacy	A person's understanding of finances and how they manage their finances (Lusardi et al., 2010).	1. Numeracy 2. Compound interest 3. Inflation 4. Time value of money 5. Money illusion
Social Environment	The direct and indirect individual interactions resulting from relationships with other people or other media (Annajah & Falah, 2016).	1. The social environment that is directly affected. 2. The social environment that is indirectly affected.
Investment Behavior	How individuals make decisions that can optimize the rate of return on investment decisions by taking into account the risks inherent in them (Cahyadi, 2010).	Investment Behavior 1. Short-term and riskier. 2. Neutral to look at the situation. 3. Long-term to avoid risks.

Analysis Techniques

The research instruments were tested using a validity test and a readability test. A validity test was used to determine the feasibility of the questionnaire with a list of questions that defined a particular variable using the Pearson Product Moment Correlation by correlating the score of each item with the total score. The validity test was declared valid if the r-count ≥ r-table (two-sided test with a sig. of 0.05). The reliability test was carried out to determine the size of the stability and consistency in answering the items in each statement in the questionnaire. The regression equations in this research are:

$Y_1 = a + B_1X_1+B_2X_2+B_3X_3+B_4X_4 + e$ ....(2)

$Y_2 = a + B_1X_1+B_2X_2+B_3X_3+B_4X_4+B_5X_1*X_4+B_6X_2*X_4+B_7X_3*X_4 + e$..............(3)

Where:

X_1 = Income
X_2 = Gender
X_3 = Social Environment
X_4 = Financial Literacy
Y = Stock Investment Behavior
e = error/residual

This study places financial literacy as a moderator in the influence of independent variables (income, gender, social environment) on the stock investment behavior of the millennial generation. The visualization of this research model is shown in Figure 1 below:

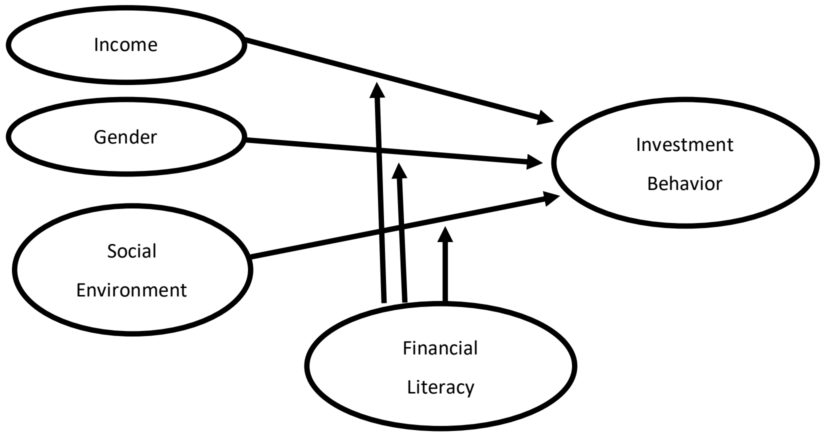

Figure 1. Theoretical Framework (source: Author, 2021)

RESULTS AND DISCUSSION

Descriptive Statistics

Table 2 below presents a summary of the respondents' profiles based on their demographic characteristics. Of the 144 total respondents, it can be seen that the majority of the respondents were male, namely 107 respondents or around 74.3%, while there were 37 female respondents or around 25.7%.

Table 2. Descriptive Statistics

Item	Total	Explanation	Frequency	Percentage
Income	144	≤ Rp2,999,999	38	26.4%
		Rp3,000,000 – Rp5,999,999	26	18.1%
		Rp6,000,000 – Rp8,999,999	29	20.1%
		Rp9,000,000 – Rp11,999,999	18	12.5%
		≥ Rp12,000,000	33	22.9%
Gender	144	Male	107	74.3%
		Female	37	25.7%
Age	144	21-30	110	76.3%
		>31	34	23.6%
Last Education	144	<High School	3	2%
		High School	19	13.1%
		Diploma (1-year to 4-year)	10	6.9%
		Bachelor's Degree	103	71.5%
		Graduate Degree	9	6.2%

Source: Author, 2021

In Table 2 it can also be seen that the income variable is divided into 5 parts. Most respondents have a salary range of less than or equal to Rp2,999,999.00 with a frequency of

38 respondents or 26.4%. While the second most respondents are those who have a salary equal to or above Rp12,000,000.00 which has a frequency of 33 respondents or about 22.9%. Then respondents with salaries between Rp6,000,000.00 up to Rp8,999,999.00 are in the salary range with the third highest frequency with 29 respondents or 20.1%. Furthermore, there are respondents with a salary range of Rp3,000,000.00 - Rp5,999,999.00 with a frequency of 26 respondents or 18.1%. Last, the respondents who have the lowest frequency are those who have a salary range between Rp9,000,000.00 - Rp11,999,999,00 with as many as 18 respondents or 12.5%.

The age category is divided into two, 21-30 years with 110 respondents or 76.3% and >31 with as many as 34 respondents or 23.6%. The education of the respondents is divided into five categories. The highest frequency was Bachelor's Degree with as many as 103 respondents or 71.5%. The second largest was high school with 19 respondents or 13.1%. The third largest was diploma with as many as 10 respondents or 6.9%. Then there are 9 respondents or 6.2% with a Graduate Degree. The least frequency of respondents is < high school with as many as 3 respondents or 2%.

Validity and Reliability Tests

For the validity test, the researcher used the value from the Pearson correlation, and to find out whether the data is valid or not, the researcher had to compare the Pearson correlation value with the r-table value. If the Pearson correlation value is greater than the R-table value, it can be concluded that the data is valid. The formula for the r-table is: $(x, y) \rightarrow (\alpha, N)$ where α is 5% and N is the number of samples, namely 144. So, it can be concluded that the value of the r-table is 0.165. Meanwhile, the reliability test itself is used to determine whether the data collected has a constant value or not. The data collected can be said to be constant if its Cronbach's alpha value = 0.6.

Table 3 shows that each variable, namely social environment, financial literacy, and investment behavior has a good validity value, because all Pearson correlation values have a higher value than the r-table value (0.165). So, it can be concluded that the data collected is valid. As for the reliability test itself, it can be seen in Table 4 that each variable has a Cronbach's alpha value for social environment (0.783), financial literacy (0.700), and investment behavior (0.788), each of which is greater than 0.6. Therefore, it can be concluded that the data from the variables of the social environment, financial literacy, and investment behavior each has constant data.

Table 3. Validity and Reliability Tests

Indicator	Cronbach's Alpha	Interpretation	Item	Pearson Correlation
Social Environment	0.783	Ideal (*Reliable*)	Environment1	0.372**
			Environment2	0.559**
			Environment3	0.701**
			Environment4	0.546**
			Environment5	0.529**
			Environment6	0.643**
			Environment7	0.612**
			Environment8	0.497**

Indicator	Cronbach's Alpha	Interpretation	Item	Pearson Correlation
			Environment9	0.504**
			Environment10	0.570**
			Environment11	0.520**
			Environment12	0.543**
			Literacy1	0.319**
			Literacy2	0.384**
			Literacy3	0.471**
			Literacy4	0.582**
			Literacy5	0.251**
			Literacy6	0.549**
Financial Literacy	0.700	Ideal (*Reliable*)	Literacy7	0.434**
			Literacy8	0.440**
			Literacy9	0.530**
			Literacy10	0.451**
			Literacy11	0.459**
			Literacy12	0.661**
			Literacy13	0.550**
			Behavior1	0.732**
			Behavior2	0.668**
			Behavior3	0.457**
			Behavior4	0.529**
Investment Behavior	0.788	Ideal (*Reliable*)	Behavior5	0.539**
			Behavior6	0.691**
			Behavior7	0.686**
			Behavior8	0.637**
			Behavior9	0.566**

**Correlation significant at the 0.01 level (2-tailed)
*Correlation significant at the 0.05 level (2-tailed)

Source: Author (2021).

Classic Assumption Test

The following is an explanation for each classic assumption test:

1. A normality test is done to determine whether the residual value is normally distributed or not. The data will be accepted if the significance value is greater than the α value (5% or 0.05), which means that the residual data has normal distribution.
2. An equal variance test is done to find out whether the data has heteroscedasticity or homoscedasticity. The data will be accepted if the significance value is greater than the α value (5% or 0.05), which means that the data is homoscedasticity data.
3. Multicollinearity testing is done to determine whether the data has multicollinearity or not. The data will be accepted if the tolerance value is greater than 0.1, which means that the data does not have multicollinearity.

Based on the data analysis, the residual value is normally distributed because the p-value of 0.200 is greater than 5%. The heteroscedasticity test obtained a p-value of 0.916, which is greater than 5%, so that homoscedasticity occurs. Furthermore, for testing the multicollinearity assumption, a tolerance value of 0.233 is obtained which is greater than 0.1, so that it can be concluded that there is no multicollinearity problem in the model.

MRA Analysis

Table 4 below presents the testing of the six hypotheses, with a summary of the results as follows: The effect of income on stock investment behavior is positive but not significant. Thus, it can be concluded that hypothesis H1 is rejected. Furthermore, the results of the regression of the gender variable on investment behavior are positive but not significant, so H2 is rejected. For the influence of the social environment on stock investment behavior, the result is significant and positive, so H3 is accepted. Meanwhile, the significance value of the effect of income on investment behavior after there is a moderating variable (financial literacy) is 0.872, which is greater than 5%, so H4 is rejected. Furthermore, in Table 4 the fifth row shows the results of the regression analysis of the effect of gender on investment behavior after there is a moderating variable. The resulting significance value is 0.784 (0.784 > 0.05); so, it can be concluded that H5 is rejected. The last is the H6 test with a p-value of 0.049, which is less than 5%, so it can be concluded that financial literacy is proven to moderate the effect of the social environment variables on investment behavior.

Table 4. Regression Analysis of the Gender, Income, Social Environment, Financial Literacy, and Investment Behavior Variables

Hypothesis Formulation (Ha)	Direction	P-Value	Coefficients	Results
Income affects the stock investment behavior of the millennial generation.	Inc. → IB	0.589	0.153	H1 is rejected
Gender affects the stock investment behavior of the millennial generation.	Gen. → IB	0.856	-0.177	H2 is rejected
The social environment influences the stock investment behavior of the millennial generation.	Env. → IB	0.000***	-0.101	H3 is accepted
Financial literacy can moderate income towards investment behavior.	Inc. → IB ↑ FL	0.872	0.017	H4 is rejected
Financial literacy can moderate gender towards investment behavior.	Gen. → IB ↑ FL	0.784	-0.089	H5 is rejected

Hypothesis Formulation (Ha)	Direction	P-Value	Coefficients	Results
Financial literacy moderates the influence of the social environment towards the stock investment behavior of the millennial generation.	Env. → IB ↑ FL	0.0450**	-0.042	H6 is accepted

*** significant at alpha 1%
** significant at alpha 5%

Source: Author (2021).

Discussion

In this study, different results were discovered from previous studies regarding the effect of income and gender on investment behavior. Putri and Rahyuda (2017) stated that gender has a significant influence on investment behavior. Income also influences investment behavior (Sartika & Humairo, 2021). However, the opposite is found in this study, as these two factors have no influence on millennial investment behavior. This is because this study was conducted during the pandemic. An article in Kompas stated that during the pandemic millennial interest in investing doubled (Catriana, 2020). During the pandemic, millennials want to get additional money with faster returns, so they choose to invest with high risk considering the uncertain economy in Indonesia (Antara, 2022).

Catriana (2020) stated that the drastic increase came from millennials aged 20-30 years old, and in this study 79.17% of respondents came from that group. Apart from differences in income and gender, Paramita stated that millennial interest is increasing due to free time which encourages them to seek various kinds of information, one of which is about stock investments. These millennial investors are indirectly influenced by social environmental factors, namely through social media, so that they choose well-known stocks and stocks based on certain moments. This is what causes millennial investment behavior to increase because there are figures or influencers that influence their investment behavior (Antara, 2022).

At this time, income and gender have no influence on investment behavior. This is because of the pandemic factor that makes many Millennials want to invest. One of the most influential factors in changing millennial investment behavior is shocks in the economy. It causes many companies to go out of business and increases unemployment. Based on an analysis conducted by Accenture on communities affected by the pandemic, 82% of the respondents were worried about the economic conditions affected by the pandemic. This shows that people actually care about economic conditions. The factors that influence investment behavior are personal and psychological desires. During this pandemic, decision making in millennial investment behavior is no longer the same as before the pandemic. Millennial needs in the normal era are considered secondary needs, while in the pandemic era they become primary needs.

The Minister of Finance, Sri Mulyani, said that at this time the economy is uncertain. She stated that in 2021 there will be a rebound and recovery, but this cannot be used as a guarantee considering that a new virus variant has just been discovered (Ministry of Finance, 2021). Therefore, the government encourages millennials to keep thinking positively, so that they can see various kinds of investment opportunities. By investing, it can help millennials to avoid the risk of reduced wealth in the event of inflation (Putri & Rahyuda, 2017). Investing during this pandemic can help develop assets.

Although the average level of financial literacy found in this study is quite high, namely 3.80, it does not succeed in moderating the relationship between income and investment behavior and also the relationship between gender and investment behavior. This phenomenon can occur due to a behavioral bias. This is supported by a study conducted by Sartika and Humairo (2021). A behavioral bias is a psychological influence that causes investment decision making to be unpredictable (Baker, Kumar, Goyal, & Gaur, 2019). A high level of financial literacy will help Millennials to invest well, but on the other hand, the presence of a behavioral bias causes Millennials to invest less rationally (Ateş, Coşkun, Şahin, & Demircan, 2016).

A behavioral bias can also arise due to the role of the COVID-19 pandemic. Research conducted by Haroon and Rizvi (2020) revealed that panicked news regarding the spread of the COVID-19 virus has a major contribution towards volatility. News of the spread of the virus raises concerns that affect investor sentiment. When unprecedented information emerges, investors find it difficult to accurately assess the economic significance and impact of the information. Guzavicius, Vilkė, and Barkauskas (2014) found in their research that investors will experience the effects of illusions, a perception of misinformation, and other irrational things when they have to make decisions under uncertainty. Solihat and Nugraha (2020) claimed that so far traditional finance assumes that investors are able to make rational decisions in the stock market regarding risk returns and maximizing utility, but investors do not behave in the same way that economists expect with behavioral biases that affect their psychological feelings.

The social environment has a negative effect on the stock investment behavior of the millennial generation. The higher the influence of the social environment, the greater the risk that will be faced by investors because they tend not to carry out an in-depth fundamental analysis and become risk takers and prefer to engage in short-term investments. According to the research results in this study, it was discovered that direct and indirect factors from the social environment are equally strong in influencing investment behavior. The indirect factor comes from social media and the direct factor comes from one’s circle of friends. Then the next influence comes from the family environment, but the influence is not as big as social media and one’s circle of friends. Many respondents were taught by their families to invest from an early age. They also like to talk about stocks with their family members. From the existing primary data, it was found that many of the respondents’ friends have already invested. The respondents in this study also study about online stock investing. They like to read articles on the Internet or through social media about stocks. Millennials like to talk about stocks with other people. That is why they also follow and join groups about stock investing.

Financial literacy moderates the influence of the social environment on the stock investment behavior of the millennial generation. Millennials are interested in investing in stocks because of being encouraged by others. They also follow the advice of friends, stock groups they follow, and also famous people in the stock market world. Masrurun and Yanto (2015) asserted that Millennials who have high financial literacy will conduct a fundamental analysis before investing. Then they will use social referrals to strengthen their beliefs, which will make them feel more confident in choosing stocks. Consequently, it can be stated that financial literacy partially mediates (partial mediation) and influences investment behavior in choosing riskier short-term investments.

CONCLUSION

Four of the six hypotheses tested in this study were rejected. Income and gender were demonstrated not to affect the stock investment behavior of the millennial generation. This study also found that financial literacy did not successfully moderate the effect of income on stock investment behavior, as well as on the effect of gender on stock investment behavior. This is suspected to be a behavioral bias that allegedly emerged during the COVID-19 pandemic. Individuals who have a high level of financial literacy are in fact unable to encourage stock investment behavior due to rising negative sentiment from investors. This research demonstrates that the respondents are more likely to choose a neutral risk preference and wait for positive developments in the future.

Furthermore, the social environment influences the stock investment behavior of the millennial generation. The influence of the social environment on the stock investment behavior of the millennial generation becomes stronger when moderated by financial literacy. Financial literacy has a partially mediating effect. This is because when millennials already have high financial literacy coupled with the support of the social environment, they will be more confident in investing in stocks.

This research failed to prove the influence of individual characteristics (income and gender) on millennial stock investment behavior. A suggestion for further research to be carried out is to consider other individual characteristics that are thought to contribute to the dependent variable, so that future research can produce a more comprehensive perspective (e.g., education level and money attitude). This research is also expected to be a reference for the millennial generation when they are going to invest in stocks, namely by considering external factors (the social environment, both directly and indirectly). Millennials who have good financial literacy will follow the trends or leads from their environment when investing in stocks, thus helping them in making wiser decisions.

This research can also be a reference for millennial generation investors by considering external factors, namely the social environment. With good financial literacy skills, millennials can follow trends or directions from their environment in investing to help them improve their decision making.

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