

## Effect of Financial Literacy, Risk Tolerance, and Overconfidence on Sandwich Generation Investment Decisions in the City of Surabaya



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**ABSTRACT:** The growing elderly dependency ratio in Indonesia has led to the emergence of the sandwich generation. Generations that share their resources with their families and aging parents. This study aims to determine the effect of financial literacy, risk tolerance, and overconfidence on sandwich generation investment decisions. Collecting data in this study using the method of distributing questionnaires and analyzed using the Partial Least Square (PLS) application. The results of this study are financial literacy are not a significant influence to the investment decision. Risk tolerance and overconfidence has positive influence on investment decision sandwich generation.

**KEYWORDS:** Sandwich Generation; Investment Decision, Financial Literacy, Overconfidence, Risk Tolerance

### INTRODUCTION

In general, Indonesian people do investment activities as a source of their side income outside of their main income from work. A person's income is not necessarily only used for the individual to meet their needs, it can also be used to meet the needs of family, children, and parents. Based on information quoted from <https://www.suara.com/> the number of productive-aged people who bear the financial burden of elderly family members, sandwich generation, is increasing. Data from the Central Statistics Agency (BPS) shows that the dependency ratio of the elderly (aged 60 years and over) continues to increase from 14.02 in 2017 to 16.76 in 2021. Thus, it can be concluded that every 100 people of productive age (15-59 years) must bear at least 17 elderly people.

Hernandez et al, (2019) defines the sandwich generation as individuals who are in a fit state to work and are "caught" between family responsibilities and professional responsibilities. Furthermore, according to Broady (2019), the sandwich generation divides their resources for their children and parents who have entered old age. Sandwich generation status makes individuals have more dependents or expenses than those who are not sandwich generation. The number of dependents or more expenses cause the sandwich generation to have a high financial burden and have less free time than the non-sandwich generation (quoted from <https://money.kompas.com/>). As the sandwich generation is psychologically stressed and can affect their physical health, it is not only their financial life that needs to be improved, but also their health. In addition, it is important to break the chain of the sandwich generation, they are required to start learning to invest. A lot must be prepared before starting to invest, one of which is an understanding of the basic concepts of good finance. As said by Lusardi, (2008) that good financial planning is influenced by the level of individual literacy. Meanwhile, investment planning is influenced by one's understanding of basic financial concepts.

According to Eduardus Tandililin (2010: 2) investment is a commitment to a number of funds or other resources made at that time, with the aim of obtaining some benefits in the future. Investments are divided into two types, namely real assets in the form of land and buildings, precious metals, real estate, deposits. While financial assets can be in the form of stocks, bonds, mutual funds, etc. Financial assets include long-term investments, by investing in the capital market investors will expect large returns, the size of the desired return depends on the investor's risk tolerance. Joko Salim (2010:9) explains that the more money or funds for an investment, the higher the investment income, the longer the individual invests, the higher the investment income, the higher the interest rate applicable to investment, the higher the investment income obtained, but the higher the income level, the greater the risk he must face.

Investment decisions are dilemmas that occur regarding the placement of funds in the form of investment to obtain higher returns in the future (Wulandari & Irmani, 2014). According to Budiarto & Susanti (2017) investment decisions are policies taken by investors to benefit in the future after making several calculations or alternatives. Investment decisions need to

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be considered because investment decisions have a long period of time (Mandagie et al., 2020). Moreover, investment is an activity that has risks, meaning that investment activities do not always generate profits but can generate losses for investors.

In research conducted by Muis Murtadho (2016) shows that the level of financial inclusion of the Surabaya City community is very high at 73.6% while the level of financial literacy of the Surabaya City community is quite high as evidenced by the public's knowledge of banking services and banking products is quite good and it can be seen that many people use banking services either to save money or to find financing. An investor will always consider his decision in making an investment, because in investing not only the benefits that will be obtained but also there are risks that loom in investing. Rational investors expect profit (return) with a low level of risk or high profit (return) with a certain level of risk. Risk is a consequence or impact that arises due to uncertainty, the risk is in the form of loss. Risk tolerance is how much risk can be borne and faced by investors in carrying out investment activities (Pratiwi, 2016). Investments that have a low level of risk provide low returns. Investments that have a high level of risk will provide high returns as well. Tolerance level plays an important role in investing. In addition, there is another factor that can be a determinant in investing which is overconfidence.

Overconfidence is a feeling of overconfidence that investors have. Overconfidence is a bias towards situations when someone believes and assumes that their abilities are greater than the abilities they actually have (Rahman & Gan, 2018). According to Budiarto & Susanti (2017) overconfidence is a person's unreasonable belief in intuitive reasoning, judgment and cognitive abilities.

### **GREAT THEORY**

#### **Prospect Theory**

Prospect theory was developed by Kahneman and Tversky in 1974 which basically covers two disciplines, namely psychology and economics which is an analysis of a person's behavior in making economic decisions between existing choices. According to Kahneman & Tversky (1979) mentioned as an alternative model of expected utility theory. Expected utility theory is referred to as a theory that discusses risky decision making which is dominated by normative models of rational choice and is widely applied in economic behavior description models (Kahneman & Tversky, 1979). Kahneman & Tversky (1979) state that prospect theory is an alternative model in choosing between risky prospects when the basic principles of utility theory show inconsistencies in their effects. The purpose of prospect theory is how individuals make a decision from a choice of prospects that contain risk. "The prospect theory holds that individuals are more influenced by the possibility of a loss than the prospect of an equivalent gain". Prospect theory can be said to be a theory that discusses the irrational actions of a person in deciding on an investment. It is said to be irrational because individuals tend to maintain their position when the price drops or is in a loss position and will sell it when the price rises slightly or small from the purchase price. This action is largely influenced by individual psychology, especially affective or psychomotor, although it is not separated from cognitive (Yuniningsih, 2020). Levy (1992) states that prospect theory is said to be a theory of decision making in risky conditions so that a consideration is needed. The consideration is because the individual's position is in two domains, namely the loss domain and the gain domain. These two risky conditions encourage immediate action even though the action is from a decision that tends to be irrational.

### **HYPOTHESIS**

#### **The Effect of Financial Literacy on Investment Decisions**

Financial literacy according to Romadoni (2015) can be interpreted as financial knowledge, which aims to achieve welfare. Financial knowledge is very important for each individual so that they are not wrong in making financial decisions. Margaretha and Pambudi (2015) state that the term financial literacy is the ability of individuals to make decisions in their personal financial arrangements. People's financial knowledge can be seen from how much financial literacy they have (Tsalisa and Rachmansyah, 2016). Investors who have a good level of financial literacy will have better control in making various investment decisions because they have better information and understanding (Upadana & Herawati, 2020).

The results of research by Ramadhan (2022) state that financial literacy has a positive effect on investor investment decisions in Yogyakarta. This means that the higher a person's level of financial literacy, the better the investment decisions made. In addition, research by Hardianto & Lubis (2022) also states that financial literacy has a positive effect on stock investment decisions.

**H1: Financial literacy has a positive effect on investment decisions.**

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## The Effect of Risk Tolerance on Investment Decisions

Risk tolerance is how much risk can be borne and faced by investors in carrying out investment activities (Pratiwi, 2016). An investor will always consider his decision in making an investment, because in investing not only the benefits that will be obtained but there are also risks that loom in investing. Rational investors expect profit (return) with a low level of risk or high profit (return) with a certain level of risk. According to Wardani & Lutfi (2019) investors with a high level of risk tolerance will tend to choose to invest in instruments that have high risk in the hope of getting high profits as well. Meanwhile, investors with low risk tolerance in choosing investment instruments tend to be cautious because they are afraid of risk.

The results of Salwah's research (2020) show that risk tolerance has a positive effect on investment decisions. This shows that investors with a high level of risk tolerance will be bolder in making investment decisions. Zahida's research (2021) also shows that risk tolerance has a positive effect on student investment decisions. This means that students who have a high level of risk tolerance will choose high-risk investments as well.

**H2: Risk tolerance has a positive effect on investment decisions.**

## The Effect of Overconfidence on Investment Decisions

According to Budiarto & Susanti (2017) overconfidence is a person's unreasonable belief in intuitive reasoning, judgment and cognitive abilities. Overconfidence is a feeling of excessive self-confidence possessed by investors. Overconfidence is a bias towards situations when someone believes and assumes that their abilities are greater than the abilities they actually have (Rahman & Gan, 2018). Investors believe that investing will get higher profits with low risk, but this is not guaranteed and does not necessarily occur as expected, therefore overconfidence can affect investors in making investment decisions (Jannah & Ady, 2017).

The results of research by Ramadhan (2022) show that overconfidence has a positive effect on investment decisions. This shows that having a high level of confidence in his abilities and skills for his investment will increase his investment decisions. The results of research by Hardianto & Lubis (2022) also show that overconfidence has a positive effect on stock investment decisions.

**H3: Overconfidence has a positive effect on investment decisions.**

## METHOD

### Population and samples

According to Sugiyono (2018) Population is a generalization area consisting of objects or subjects with certain qualities and characteristics set by researchers to study and then draw conclusions. The subjects that will be used as the population in this study are the people of Surabaya City aged 25 - 44 years, totaling 973,766 people including men and women. To determine the sample size, researchers used the Slovin formula. That makes of total samples are 100 people. The type of data used in this research is primary data. Primary data is data obtained from respondents through questionnaires, focus groups, and panels, or also data from researcher interviews with sources. The data collection method in this study was carried out by survey method through questionnaires distributed to the Surabaya City Community. The variable measurement scale used in this study is an ordinal scale or often referred to as a rating scale. The technique for determining the score in this research questionnaire uses the Likert scale technique. The Likert scale according to Sugiyono (2018) is a scale used to measure the attitudes, opinions, and perceptions of a person or group of people about social phenomena.

### Variable indicators

#### Financial literacy

Financial literacy according to Romadoni (2015) can be interpreted as financial knowledge, which aims to achieve welfare. Financial knowledge is very important for each individual so that they are not wrong in making financial decisions. Indicators of financial literacy in this study include:

- a. Basic financial knowledge (X1.1)
- b. Financial management (X1.2)
- c. Credit management (X1.3)
- d. Savings and investment (X1.4)
- e. Risk management (X1.5)

#### Risk tolerance

Risk is a consequence or impact that arises due to uncertainty, the risk is in the form of loss. Risk tolerance is how much risk can be borne and faced by investors in carrying out investment activities (Pratiwi, 2016). An investor will always consider his decision

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in making an investment, because in investing not only the benefits that will be obtained but there are also risks that overshadow investing. Risk tolerance indicators in this study include:

- a. Willingness to invest in high, moderate, and low risk. (X2.1)
- b. Choosing high risk investments to get high returns (X2.2)
- c. Profit is more important than security (X2.3)
- d. Believe that risk does not always result in loss (X2.4)
- e. Willing to accept if the investment fails (X2.5)

### Overconfidence

According to Budiarto & Susanti (2017) overconfidence is a person's unreasonable belief in intuitive reasoning, judgment and cognitive abilities. Overconfidence is a feeling of excessive self-confidence possessed by investors. Overconfidence is a bias towards situations when someone believes and assumes that their abilities are greater than the abilities they actually have (Rahman & Gan, 2018). Indicators of overconfidence in this study include:

- a. Having confidence in the success of the plan (X3.1)
- b. Having more ability than other investors (X3.2)
- c. Believe in your own abilities (X3.3)
- d. Believe in the knowledge you have (X3.4)
- e. Confidence in choosing an investment (X3.5)

### Investment Decision

According to Hartono (2017) investment is a delay in current consumption to be included in productive assets over a certain period. Parties who make investments are called investors. According to Putra et al. (2016) there are two attitudes in making investment decisions among investors, namely rational attitudes and irrational attitudes. A rational attitude is the attitude of an investor who thinks based on common sense. Meanwhile, an irrational attitude is the attitude of an investor who is not based on common sense. Indicators of investment decisions in this study are:

- a. Acceptable risk (Y.1)
- b. Feeling safe when investing (Y.2)
- c. Time to invest (Y.3)
- d. Updating knowledge about investment (Y.4)

## RESULTS

### Convergen Validity

From the results of data tabulation, the description of the data can be seen from the convergen validity as follows.

**Table 1: Convergent Validity**

	Factor Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ((O/STDEV))
X1.1 <- financial literacy	0.813	0.812	0.038	21.408
X1.2 <- financial literacy	0.873	0.873	0.028	31.452
X1.3 <- financial literacy	0.865	0.863	0.040	21.445
X1.4 <- financial literacy	0.871	0.869	0.032	27.599
X1.5 <- financial literacy	0.859	0.859	0.031	27.761
X2.1 <- risk tolerance	0.840	0.839	0.033	25.679
X2.2 <- risk tolerance	0.824	0.818	0.056	14.841
X2.3 <- risk tolerance	0.535	0.530	0.108	4.938
X2.4 <- risk tolerance	0.810	0.805	0.065	13.147
X2.5 <- risk tolerance	0.754	0.747	0.060	12.540
X3.1 <- overconfidence	0.662	0.651	0.083	7.991
X3.2 <- overconfidence	0.856	0.857	0.029	29.239
X3.3 <- overconfidence	0.938	0.938	0.012	79.765
X3.4 <- overconfidence	0.935	0.935	0.013	70.433
X3.5 <- overconfidence	0.829	0.829	0.035	23.436
Y1.1 <- investment decision	0.692	0.690	0.059	11.627
Y1.2 <- investment decision	0.581	0.573	0.084	6.905
Y1.3 <- investment decision	0.766	0.760	0.056	13.689
Y1.4 <- investment decision	0.835	0.836	0.030	27.652

Source: Data processed

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From the table above, the validity of the indicator is measured by looking at the Factor Loading value from the variable to the indicator, it is said that the validity is sufficient if it is greater than 0.5 and or the T-Statistic value is greater than 1.96 (Z value at  $\alpha = 0.05$ ). Factor Loading is the correlation between indicators and variables, if it is greater than 0.5, it is considered that the validity is fulfilled as well as if the T-Statistic value is greater than 1.96, the significance is fulfilled. Based on the outer loading table above, all reflective indicators on the Financial Literacy (X1), Risk Tolerance (X2), Overconfidence (X3) and Investment Decision (Y) variables, show factor loading (original sample) greater than 0.50 and or significant (T-Statistic value more than the Z value  $\alpha = 0.05$  (5%) = 1.96), thus the estimation results of all indicators have met Convergent validity or good validity.

### Hypothesis Test Results

The implementation of the resampling method, allows the applicability of freely distributed data, does not require the assumption of normal distribution, and does not require a large sample (recommended sample of at least 30). The test is carried out with a t-test, if a p-value  $\leq 0.05$  (alpha 5%) is obtained, it can be concluded that it is significant and vice versa. If the results of hypothesis testing on the outer model are significant, this indicates that the indicator is considered usable as a latent variable measuring instrument. Meanwhile, if the test results on the inner model are significant, it means that there is a meaningful influence of latent variables on other latent variables.

**Table 2: Hypothesis Test Results**

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ( O/STDEV )	P Values
X1 -> Y	0.204	0.203	0.112	1.825	0.069
X2 -> Y	0.226	0.238	0.096	2.366	0.018
X3 -> Y	0.373	0.374	0.109	3.413	0.001

Source: Data processed

## DISCUSSION

### The Effect of Financial Literacy on Investment Decisions

The results of hypothesis testing using the Bootstrapping method prove that financial literacy has an insignificant effect on the investment decisions of the sandwich generation in Surabaya City. So that the first hypothesis is rejected. This means that having good financial literacy or not, has an insignificant effect on investment decisions. This is in line with research conducted by Wardani and Lutfi (2016) with the title "The Effect of Financial Literacy, Experienced Regret, Risk Tolerance, and Motivation on Family Investment Decisions in the Perspective of Balinese People. In Salwah's research (2020) with the title "The Effect of Financial Literacy, Overconfidence, and Risk Tolerance on Investment Decisions for Capital Market Products in Makassar City" also shows that financial literacy has an insignificant effect on investment decisions. In addition, there is also research conducted by Irjayanti (2017) with the title "The Effect of Financial Literacy, Representativeness, Familiarity, and Risk Perception on Investment Decision Making in Surabaya and Sidoarjo Investors" which states that financial literacy has an insignificant effect on investment decisions.

This insignificant result can be possible because the current sandwich generation to make investment decisions mostly follow someone who spreads their personal analysis on social media because it is easier and faster. The convenience is then utilized for investment decision making because the sandwich generation sees an opportunity to make decisions faster. This is because the burden carried by the sandwich generation is quite heavy so they need something that can help them invest easily and quickly. This results in the emergence of biased behavior in making investment decisions because they only follow what is available and spread on social media.

### The Effect of Risk Tolerance on Investment Decisions

The results of hypothesis testing using the Bootstrapping method prove that risk tolerance affects the investment decisions of the sandwich generation in Surabaya City. So that the second hypothesis is accepted. This means that the higher the risk tolerance, the bolder the investment decision. With a high risk tolerance, someone will tend to make bolder decisions than people with a low level of risk tolerance. This is in line with research conducted by Salwah (2020) with the title "The Effect of Financial Literacy, Overconfidence, and Risk Tolerance on Investment Decisions for Capital Market Products in Makassar City". Research conducted by Wardani and Lutfi (2016) with the title "The Effect of Financial Literacy, Experienced Regret, Risk Tolerance, and Motivation on Family Investment Decisions in the Perspective of Balinese People" also shows the same results that risk tolerance has a significant effect on investment decisions. This is also shown in research conducted by Wardani and Lestari (2020) with the title "The Effect of Financial Literacy, Risk Tolerance, and Employment Status on Investment Decisions".

## **Effect of Financial Literacy, Risk Tolerance, and Overconfidence on Sandwich Generation Investment Decisions in the City of Surabaya**

Risk tolerance is how much risk can be borne and faced by investors in carrying out investment activities (Pratiwi, 2016). An investor will always consider his decision in making an investment, because in investing not only the benefits that will be obtained but there are also risks that overshadow investing. In this study, it has been proven that the higher the risk tolerance, the bolder the investment decision.

### **The Effect of Overconfidence on Investment Decisions**

The results of hypothesis testing using the Bootstrapping method prove that overconfidence affects the investment decisions of the sandwich generation in Surabaya City. So that the third hypothesis is accepted. This means that investors who have a high level of overconfidence will increase their investment decisions. This is in line with research conducted by Ramadhan (2022) with the title "The Effect of Financial Literacy, Overconfidence, Experienced Regret, and Demographic Factors on Investment Decisions (Case Study on Investors in Yogyakarta)". In addition, the same results are also found in Lubis's research (2022) with the title "Analysis of Financial Literacy, Overconfidence and Risk Tolerance on Stock Investment Decisions". In research conducted by Bangun (2020) with the title "The Effect of Financial Literacy, Risk Perception and Overconfidence on Investment Decisions (Case Study on Millennial Generation in Yogyakarta)" also shows that overconfidence significantly affects investment decisions.

The higher the level of overconfidence a person gives confidence and trust in the skills and knowledge possessed in investing so that he feels that his investment plan is successful and also feels that the information he has is superior and reasonable compared to other investors. However, this overconfidence can harm investors as well. This is because they are closed to the risks they face even though risk is part of financial planning and also they make excessive transactions (Gill et al., 2018).

### **CONCLUSIONS**

Based on the results of tests conducted using PLS analysis to examine the effect of Financial Literacy, Risk Tolerance, and Overconfidence on Sandwich Generation Investment Decisions in Surabaya City and the results described, it can be concluded that:

- a. Financial literacy has no effect on the investment decisions of the sandwich generation in Surabaya City.
- b. Risk tolerance affects the investment decisions of the sandwich generation in Surabaya City.
- c. Overconfidence affects the investment decisions of the sandwich generation in Surabaya City.

### **RECOMMENDATIONS**

- a. For further research, it is hoped that it can conduct research on different respondents with a larger number of respondents.
- b. For further research, it is also hoped that research can be carried out by adding other independent variables.
- c. For readers to always consider every step taken in the world of investment and always enrich knowledge about investment so that in the future the investment made is successful and free from the sandwich generation label.

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