The Influence Of Demography And Risk Tolerance Toward Portfolio Invesment Selection Of Post Graduate Students

Farah Margaretha Leon & Cindy Hadinata
Fakultas Ekonomi dan Bisnis, Universitas Trisakti
farahmargaretha@trisakti.ac.id

Abstract: The purpose of this research is to give empiric evidence from the influence of demography variable toward portfolio investment selection and risk tolerance also the influence of risk tolerance toward portfolio investment selection. The methodology of this research was used primer data by questionnaire both online and offline to postgraduate students in Jakarta. Data succeeded to be collected for 258 respondents and data analyze method used descriptive statistic, coefficient concordance Kendall W and chi square analyze. The result of this research showed that demography variable significantly influence to investor risk tolerance for Postgraduate students in Jakarta. Gender and age significantly influence to risk tolerance and occupation is not influence to investor risk tolerance for Postgraduate students in West Jakarta. Meanwhile for gender significantly influence to investment portfolio selection. Risk tolerance significantly influence to investment portfolio selection for postgraduate students in West Jakarta. The implication for investor and investment advisor should understand the demography variable and investor risk tolerance level, therefore they make right investment.

Key Words: Gender, Occupation, Investment Portfolio, Risk Tolerance, Age

BACKGROUND

In line with economic growth in Indonesia, there are some investments as a choice of investor that suitable with their financial. According to Leon (2018), kinds of investments generally consist of money market security, shares, obligation, ready assets trust and property. Each investion has its unique payoff to investor. By investing, each individual of investor is sacrificing the value to get higher profit from their previous sacrifice. Therefore, financial planning for short or long period is a real manifestation of intelligent financial of individual in collecting the asset they belong to (Saputra and Anastasia, 2013).

In making invest decision, investor should understand the relation of return and risk. In which both return and risk have in line relationship. It means, expect the higher return, will also the investor got higher risk. Hence, risk tolerance has crucial role when choosing investment portfolio and achieving financial goal. Risk tolerance is referred to investors' attitude in choosing risk value. This research was started out from Chavali and Mohanraj (2016). In that research, there are three variables of demography factor was used, namely gender, occupation and age. Data collected by questionnaire to 257 respondents in Bangalore, India on 2016.

In their research, Margaretha and Pambudhi (2015) showed that from bachelor students in Jakarta, there were 48.91% respondents have low financial intelligence. For

that reason, this research use postgraduate students in Jakarta, with purpose they will have better financial intelligence. The purpose of this study is to recognize the influence of risk tolerance to investment portfolio selection.

THEORETICAL REVIEW

Respondents research with married family and have child who is school and live in Surabaya used six demography variables, namely gender, age, education level, number of children they have, occupation, and income had been carried out by Saputra and Anastasia (2013). This research prove that there four demography variables that influence to risk tolerance they are gender, number of children they have, occupation and income. From some investments portfolio selection, business/real estate, gold, silver, diamond, collection, share/mutual fund share, cash, deposits, market share, fix income share, mix market share, and obligation. Only investion in cash, deposits, and market share which being major investment portfolio and its risk are able to be tolerance with respondents.

Research that study the influence of demography variable to decision of investment and risk tolerance in Islamabad and Rawalpindi, Pakistan had been conducted by Sadiq and Ishaq (2014). Demography variable used in this research were education level, age, gender, knowledge of investment, experience of investments, occupation, marriage status, income level and family size. In this research proved that education level, age, knowledge of investments, experience of investments, and income level to risk tolerance level which able to be accepted by investor, while age had negative correlation to tolerance level that able to be accepted by investor.

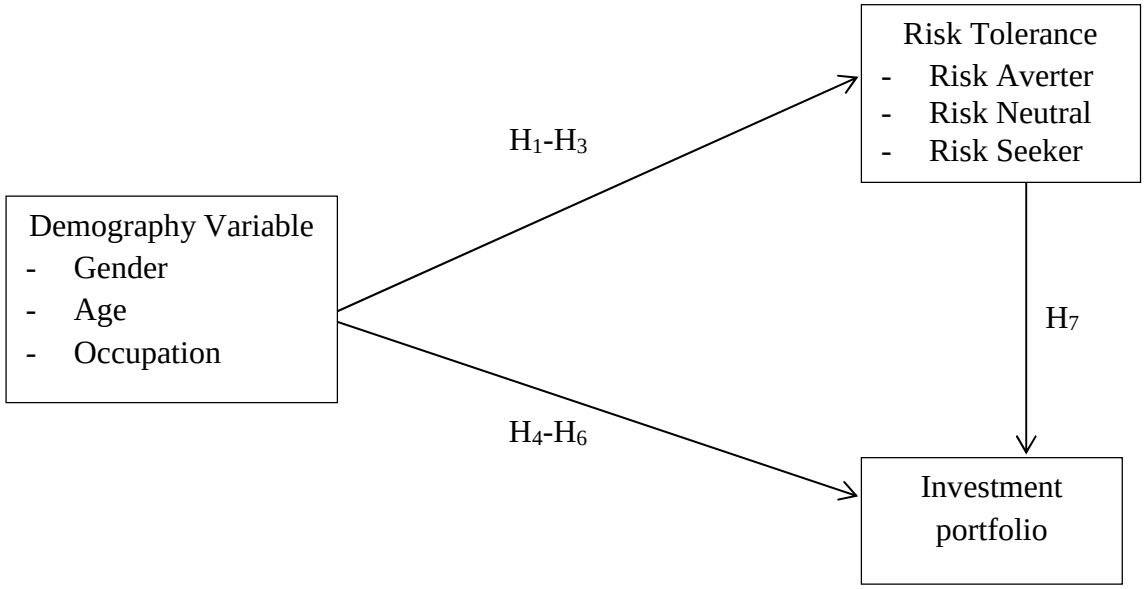
Research which use ten demography variables, namely gender, ethnic, age, married status, last education level, occupation, number of family, monthly expenditure, experience of investments, the frequent of transaction had been conducted by Pratiwi and Prijati (2015) showed that there was no influence of demography variable to portfolio investments selection for investor in some security companies in Surabaya. Though, married status is the only one demography variable which has influence to risk tolerance that investor will get. This research also give empiric prove that risk tolerance able to be covered by investor and it may give influence in selecting the investment portfolio.

Research toward the influence of demography variable to risk tolerance on investor Pakistan that had been conducted by Rahmawati, *et al* (2015) used demography variable gender, education level, age and welfare influenced to risk tolerance.

Gender, occupation, and age as demography variable is several researches had been conducted by Chavali and Mohanraj (2016). From that research, gender is the only one of demography factor that influences to decision making of investment portfolio for investor in Bangalore, India. The biggest reason to decision making of selecting the portfolio investment, that is financial secure followed the ability to accept the risk and financial planning in the future. Family and friend also being a factor that significantly influence to investor. This research proved that 42% respondents have tendency to avoid risk, 40% respondents carefully in selecting the investments and more had done the research before doing investment, and 18% respondents ready to accept the risk where we could found that there are 2% respondents viewed that risk is a challenge in investment (gamblers).

When investor wants to invest, he should know his own financial condition. It could not be separated from mindset and consideration which differ between men and women, the age of investor when doing investment, and the occupation of investor, the whole are

demography variables that influence the decision making of investor to select the portfolio investment. In addition, role for investor that higher return offered also make the risk higher (Saputra and Anastasia, 2013). Therefore, investor should know the risk profile in order to be able to select the right portfolio investment to achieve financial goals. From the above description, here is the conceptual framework to explain those points as the picture bellow:



Picture1. Conceptual Framework
Hypothesis Development

The Influence of Demography Variable towards Risk tolerance. Research had proven that there was influence among demography variable to risk tolerance. Demography variable used in this research namely gender, age and occupation.

The Influence of Gender towards Risk Tolerance. Male and female has its difference character including when responding the worse consequence if decision. Male is considered braver and confidence to take the risk in doing investion than female. This may caused male has more capacity to accept the work risk than female (Rahmawati, *et al*, 2015).

The difference capability when accept the risk also had been proven by Saputra and Anastasia (2013) and Rahmawati, et al (2015), male investor is considered more aggressive and brave that female investor. However, the research conducted by Chattopadhyay and Dasgupta (2015) proven that male investor tent to avoid risk than female investor. Based on these researches above, here is the hypothesis of this research:
H_1: Gender is significantly influence to risk tolerance

The influence of Age to Risk Tolerance. People are getting older, so his ability to accept the risk is also getting small (Sadiq and Ishaq, 2014). This may caused by the needs of

liquid fund are really necessary when hi is being older (Rahmawati, *et al*, 2015). Young investor is braver to take risk in doing investion than middle age and elder age.

Chattopadhyay and Dasgupta (2015) proved that investor with age above35 years tend to avoid the risk that investor below 35 years. . Rahmawati, *et al* (2015) in her research found that investor with age above 40 years will more tolerance to the risk than investor with age 20-39 years. Nevertheless, risk tolerance will decrease to investor with age above 50 years. Chavali and Mohanraj (2016) also proved that there was a difference acceptance attitude based on age classification. Investor age 21-30 years have 43.5% high tolerance to risk, 2% in this age brave enough to invest. While, in age 31-60 years, investor then to carefully when invest, and age above 60 years, investor will avoid the risk. Based on the above explanation, here is the hypothesis of this research:
H_2: Age is significantly influence to risk tolerance

The Influence of Occupation to Risk Tolerance. Occupation is the activity of someone to earn income. Chavali and Mohanraj (2016) on their research proved that 42% investor who work as private company willing to accept the risk, 67% of house wife tend to avoid the risk and own enterprise tent to very brave to take the risk in doing investment. Investor who have retired from their job tent to avoid the risk, investor who work in private company is more able accept the risk than investor who work in government institution, whereas investor from own enterprise have well feeling to risk (Rahmawati, *et al,* 2015).

The research that conducted by Chattopadhyay and Dasgupta (2015) found that investor who work in private company, government institution or own enterprise tent to avoid the risk in doing investment. Based on the data above, here the hypothesis in this research as bellow:
H_3: Occupation is significantly influence to risk tolerance.

The Influence of Demography Variable to Selection of Portfolio Investment. This research had proved that there is influence among demography variable and selection of portfolio investment. Demography variable used in this research are gender, age and occupation.

The Influence of Gender to Selection of Portfolio. Male and female investor has different consideration to decide portfolio investment. Jain and Mandot (2012) on their research had collected 200 investors who spread in many cities in Rajasthan on April 2011 until January 2012. There were 169 respondents male and 31 respondents female. The result from this research stated that gender has no influence to decision to select the portfolio investment.

Shinde, *et al* (2015) used data from 670 investors in Pune city, Maharashtra, India. The result from his research showed that there was difference of investment pattern which based on gender. Chavali and Mohanraj (2016) used 257 respondents in Bangalore, India. The result of his research found that from three demography variables used in this research (gender, age and occupation), only gender which have influence to selection of portfolio investment. Putri, *et al* (2017) used 124 questionnaire which spreader and got 83 sample as data research investor of financial asset in Surabaya. The result of her research proved that female investor tends to select investment instrument in deposits while male investor tent to select more risk investment such as share, ready asset trust, and obligation. Based on the data above, so the hypothesis in this research:

H_4: Gender is significantly influence to selection of Portfolio Investment

The influence of Age to Selection of Portfolio Investment. Age is the most important point to select the portfolio investment. Jain and Mandot (2012) on their research classified the age of respondent into 5 categories, namely under 25 years old, 25-35 years old, 35-45 years old, 45-55 years old and above 55 years old. The result of the research had proved that the age of investor influence the decision in making decision select the portfolio investment. Kusumawati (2013) used data from 100 investors in Surabaya. Her research classified age into six categories, namely age 17-25 years old, 26-35 years old, 36-45 years old, 46-55 years old, 56-65 years old, and above 65 years old. The result of the research found that the younger age of investor they will more consider the profile and the image of object to invest. Sadiq and Shihab (2014) on their research had 100 investors in Islamabad and Rawalpindi, Pakistan found that age has significant influence to make decision to invest. Shinde, *et al* (2015) found that group of middle age tend to like to invest in low risk such as assurance and deposits. Based on the research data above, here the hypothesis in this research:
H_5: Age is significantly influence to selection of portfolio investment

The influence of Occupation to Portfolio Investment. Each job has different income (Shinde, *et al*, 2015). There are some jobs with fix income, and jobs with unfix income. Thus, different income of each jobs on individual investor also effect to select different portfolio investment.

Jain and Mandot (2012) classified the jobs into five categories, namely service, professional, student, entrepreneur, and others. This research proved that job has influence to decision of 200 investors in Rajasthan. Das and Jain (2014) divided job into five categories, namely student, house wife, service, and pension. This research has been done by 150 investors in Guhawati city. This research found that job has a biggest influence to investor to do investion. Shinde, *et al* (2015) found that significant influence of job occupation background of investor to select the portfolio investment. Based on data research above, here is the hypothesis of this research:
H_6: Occupation is significantly influence to Selection of Portfolio Investment.

The Influence of Risk Tolerance to Selection of Portfolio Investment. Risk tolerance is the point supposed to be known to find proper investment for our self, mainly to assets person (Saputra and Anastasia, 2013). In investment activity, risk and feedback is directly proportional. Therefore, higher risk will consider higher profit also. Hence, many investors do not invest their money in big return because they should have big risk also. This proved that risk tolerance accepted by investor can affect and influence to select portfolio investment.

The image of investor risk will influence the selection of portfolio investment, research conducted by Saputra and Anastasia (2013). This research stated that investors who select portfolio investment only in cash, deposits, and mutual fund share market. Empirical evidence that risk tolerance influence to selection of portfolio investment had been proved by research of Chattopadhyay and Dasgupta (2015) and Chavali and Mohanraj (2016). Empirical evidence about risk tolerance level to decision to invest in share, where higher risk tolerance to share, the preference value share is also higher, this

proved in research conducted by Putri, *et al* (2017). Based on data research above, here the hypothesis in this research:
H_7: Risk Tolerance is significantly influence to Selection of Portfolio Investment

METHOD

Independent variable in this research is risk tolerance and the selection of portfolio investment. Independent variable used in this research is demography variable namely, gender, age and occupation.

First variable is gender; this variable explained the classification of gender from respondents. Gender divided into two categories, male and female. Second variable is age, which explained the age of respondents when they are filling out the question is. Third variable in this research is occupation. Occupation mean in this research is divided into four categories, namely entrepreneur, private employee, government employee, and house wife. Those explanations above about dependent variable and independent variable shown in the table below:

Table 1. Dependent and Independent Variable

Variable Type	**Measurement method**
Dependence Variable	
Portfolio Investment Selection	Using question in questionnaire from six until eight. In question number six, respondent asked to choose one of six kind infestations they are willing, the infestation included gold, share, mutual fund, government obligation, private obligation, and assurance, while investors may choose another of six kind investations had been mentioned. On seventh question, respondents asked to choose the reason why they do investation. The question consist of nine points, choose question a until c describe the reason to save the secure of investor, d until f describe the reason of investor to protect risk tolerance when doing investation, g until h describe investor invest to plan the future. On eight question, investor asked to rank the source that strongly influence the investor when doing investation by giving the rank from 1-5. 1 is the factor that influences investor the most. While the source consist of family and friend, newspaper and financial magazine, television program about business news, broker or investment agency. Determination factor mostly influence used concordance confession by Kendall W.
Risk Tolerance	Use question in questionnaire from nine questions until fourteen questions by using scoring method. Higher score described investor braver to take risk in doing investation. 9. a = 1; b = 3 10. a = 1; b = 3 11. a = 1; b = 2; c = 3 12. a = 1; b = 2; c = 3

	13. a = 4; b = 3; c = 2; d = 1 14. a = 1; b = 2; c = 3; d = 4 To determine the risk tolerance should calculate the score of question number 9-16. From this result, we may make conclusion that taken from 6-10 is risk averter, score 11-15 is risk neutral and 16-20 is risk seeker.
Variable Independence	
Gender	Describe the gender of investor who are respondent in this research. The question in the questionnaire found in third question that gender divided into two, male and female.
Age	Describe the age of investor when they answer questionnaire in this research. Researcher did not limit into group or categories of age in this research. Question in this research found on fourth question.
Occupation	Describe the job of investor when they are respondents in this research. Researcher classified the job of respondent into four, namely entrepreneur, private employee, government employee, and housewife. Out of the jobs classification, respondent may choose another question that found on fifth question in questionnaire in this research.

Source: Chavali and Mohanraj (2016)

The population used in this study are active investors who are still registered as postgraduate students in West Jakarta, namely Trisakti University, Tarumanagara University, Krida Wacana Christian University, Bina Nusantara University, and Esa Unggul University.

While, the sampling is done by stratified random sampling method, so that can be obtained representative sample which in accordance with predetermined criterion (Sugiyono, 2013). Sampling is done online and offline. By online, the data collected and in accordance with the research criteria is as much as 176 and by way of offline, the data collected is as many as 82 respondents. So the sample of the research is amounted to 258 respondents.

The data used in this research is primary data. The method used is survey research. Margaretha and Pambudhi (2015) explain that survey research is a method of research on a collection of objects, but only take a portion of the population within a certain time period using a questionnaire. The distribution of research questionnaires conducted in January - March 2018.

DISCUSSION

The demographic characteristics of respondents in this study consisted of five demographic characters, namely the study program being undertaken by respondents during the filling of the research questionnaire, the majors in the lecture being taken by the respondent, the respondent's gender, the respondent's age at the time of filling out the research questionnaire, and the work behind the respondents in generating funds to invest.

Table 2. Demographic Characteristics of Respondents

No.	Respondents' Characteristics	Respondents' Total	%
1.	Study Program		
	Master	243	94.20%
	Doctoral	15	5.80%
2.	Major		
	Accounting	152	58.90%
	Management	80	31.00%
	Economics	8	3.10%
	Others	18	7.00%
3.	Genders		
	Male	147	57.00%
	Female	111	43.00%
4.	Age		
	21 – 25 years	102	39.54%
	26 – 30 years	99	38.37%
	31 – 35 years	17	6.59%
	36 – 40 years	21	8.14%
	41 – 45 years	8	3,10%
	46 – 50 years	8	3.10%
	> 50 years	3	1.16%
5.	Occupation		
	Entrepreneur	42	16.30%
	Private Employee	161	62.40%
	Civil Servants	17	6.60%
	Housewife	2	0.80%
	Others	36	14.00%

Based on Table 2, it can be seen that the majority of respondents in the study are graduate students who are taking education in the master program. In the study program of the respondents, there was a significant difference between the master students and the doctoral students. From 258 respondents, 243 respondents or 94.20% were master students and the rest were 15 respondents or 5.80% were doctoral students in Indonesia.

When viewed from the majors of the field of study respondents, the majority of respondents are taking the field of accounting studies. Where, 152 respondents or 58.90% of respondents are students majoring in accounting, followed by management majors, that is as much as 80 respondents or as much as 31.00%, and graduate students majoring in economics with respondents as many as 8 respondents or 3.10%. For the rest of the respondents, as many as 18 respondents or 7.00% are graduate students in addition to the three majors (accounting, management, and economics).

Respondents are fairly spread evenly within the gender category; where respondents with male sex are not much different from respondents with female gender. From 258 respondents, 147 respondents or 53, 00% male, while the rest, 111 respondents or 47, 00% were respondents with female gender.

In terms of age, it can be seen that the majority of respondents are young investors with the age group 21-25 years. A total of 102 respondents or 39.54% of the 258 respondents came from the age group 21-25 years. Followed by 99 respondents or 38.37% came from the age group 26 - 30 years. Furthermore, 36-40 year olds were in the third position with a total of 21 respondents or 8.14%. Age group 31-35 years does not have too

many respondents, which are only as much as 17 respondents or 3.59%. Age group 41 - 45 years and 46 - 50 years have the same quantity of respondents, i.e. each of 8 respondents or each of 3.10%. While the age group above 50 years is the age group with the least respondents, as many as 3 respondents or only 1.16% of the total respondents of the study.

In the last demographic characteristic, namely occupation, the majority of respondents work as private employees in West Jakarta. A total of 161 respondents or 61.40% of the 258 respondents work as private employees, 42 respondents or 16.30% of the respondents are entrepreneur, 17 respondents or 6.60% work as civil servants, and 0.80% of respondents or 2 respondents work as housewives. A total of 36 respondents or 14.00% have professions outside the four professions that have been mentioned.

Descriptive Statistics Selection of Investment Portfolio

Investment Portfolio. In this study, there are six choices of investment portfolios that can be selected by respondents as a description of the results of investment decision making. The six options are gold, stocks, mutual funds, government bonds, private bonds, and insurance. In addition to the six portfolio options, respondents can also choose other options if the six portfolio choices are not owned by the respondent.

Table 3. Investment Portfolio

No.	Investment Portfolio Options	Total of Respondents	%
1.	Gold	94	36.40%
2.	Stock	48	18.60%
3.	Mutual Funds	32	12.40%
4.	Government Bonds	11	4.30%
5.	Private Bonds	2	0.80%
6.	Insurance	44	17.10%
7.	Other Investments	27	10.50%
Total		258	100.00%

From the results of table 3 shows that the majority of respondents, i.e. 36.40% of 258 respondents or 94 respondents chose gold as an investment option. Followed by the stock, which amounted to 18.60% or as many as 48 respondents, insurance of 17.10% or as many as 44 respondents, mutual funds of 12.40% or as many as 32 respondents, government bonds of 4.30% or as many as 11 respondents, and private bonds are investments with the fewest enthusiasts, which is only 0.80% of the respondents or as many as 2 respondents. 27 respondents or 10.50% of the 258 respondents chose other investments outside the investment options that have been given.

Factors Affecting Investment Decision Making. Based on research conducted by Chavali and Mohanraj (2016), there are three components or factors of decision making, namely investor security, risk protection, and planning in the future. Here is a table of research on the factors that affect investors in making investment decisions.

Table 4. Factors Affecting Investment Decision Making

No	**Components or Factors Influencing Decisions on Investing with Decision-Making Variables**	**Total of Respondents**	**%**

1.	Maintain investor security		
	a. Invest to secure life	37	14.30%
	b. Investing in assets that are not at risk	34	13.20%
	c. Meet the needs of families in the future	80	31.00%
	Total	151	58.50%
2.	Protecting the level of risk		
	a. Reduce the tax costs to be deposited	0	0.00%
	b. Protecting finances from risk in investing	15	5.80%
	c. Invest for retirement	26	10.10%
	Total	41	15,90%
3.	Future planning		
	a. Prefers long-term investments rather than short-term investments	41	15.90%
	b. Saving to fulfill social obligations in the future	25	9.70%
	Total	66	25.60%
Grand Total		**258**	**100.00%**

From the results of the research in table 4, it is seen that the majority of respondents, i.e. as many as 58.50% of 258 respondents or a number of 151 respondents tend to invest because of to maintain the security of each individual investor. The biggest factor influencing investor decision in investing is to fulfill family need in the future with total respondent reach 31,00% from all factor or 80 respondent. Within the components of safeguarding investor security, the next factor is investors tend to invest in securing life and investing in non-risk assets. The results showed 14.30% or 37 respondents invested to secure life and the rest, i.e. as many as 13.20% or 34 respondents invested in assets that do not have risks.

Furthermore as many as 66 respondents or 25.60% of the respondents are investing to meet the planning in their future. A total of 41 respondents or 15.90% of the respondents are investing because they prefer investments in the long term rather than in the short term and as many as 25 respondents or 9.70% invest to save in order to meet social obligations in the future.

The last factor component that influences investor decision making in investing is to protect the risk level. In the study, this factor has the fewest respondents. A total of 41 respondents or 15.90% of the respondents invested to protect the level of risk, with the lowest factor of investing against the background to reduce the tax costs to be deposited. No single respondent invests on this basis. Furthermore, as many as 15 respondents or 5.80% of total respondents invest to protect finance from risk in investing and as many as 26 respondents or 10.10% of total respondents invest for retirement.

The Most Influential Source in Investing Decision Making. The five most influencing sources of investors used in research for investment decision-making are family and friends, financial newspapers and magazines, business news television programs, brokers or investment agents, and the internet. The test is done by doing Kendall's W test with test result which can be seen in table 8 below.

Kendall W test results indicate that family and friends are the sources that most influence investors in making investment decisions. It can be seen from the mean rank value of family and friends who have the lowest value of the five sources, which is equal to 2.59.

Table 5. The Most Influential Source in Investing Decision Making

No.	Source in Investing Decision Making	*Mean Rank*
1.	Family and friends	2.59
2.	Newspaper and Business Magazine	2.96
3.	Business News Television Program	3.21
4.	Brokers or investment agents	3.22
5.	Internet	3.02

Newspapers and business magazines are the second source that influences investment decision making with a mean value of 2.96, followed by internet usage, and a business news television program, with mean rank values of 3.02 and 3.21 respectively. A broker or insurance agent with a mean value of 3.22 is the least influential source in making investment decisions in research.

Descriptive Statistics of Risk Tolerance. In the study, risk tolerance is measured by taking into account the four dimensions of risk tolerance. Where the four dimensions consist of: the theoretical dimensions of prospects in the certainty of profit or loss, the risk dimension as the comfort level of investing, the dimension of experience and knowledge and perceptions of investment risk, the speculative risk dimension.

The Prospect Theory Dimension in Certainty of Gaining Profits or Losses. Table 6 illustrates the results of the research on prospect theory in the certainty of obtaining profit. Where it can be seen that as many as 154 respondents from 258 respondents or 59.70% chose to invest in instruments that surely can provide a profit of Rp 10,000,000 if given funds of Rp 20,000,000 and 104 respondents or 40.30% to invest in instruments that have a 50% chance of earning a profit of Rp 20,000,000 and a 50% chance of getting nothing. The results of this study have succeeded in proving that in accordance with the theory of prospects, investors will prefer investment that can provide certainty of profit, although with a smaller nominal, compared with uncertain investment can provide benefits, although with a larger nominal.

Table 6. Certainty Get Profits if you are granted a fund of Rp 20,000,000, then you will use the funds for

Choice	Total of Respondents	%
Invest in an instrument that surely provides a profit of Rp 10,000,000	154	59.70%
Invest in instruments that have a 50% chance of making a profit of Rp 20,000,000 and 50% chance of getting nothing	104	40.0%
Total	**258**	**100.00%**

The second test on the dimensions of the theory of prospects, namely the certainty of profit. The results of the study can be seen in table 7 as presented below.

Table 7. Certainty of Loss
If you are granted a fund of Rp 20,000,000, then you will use the funds for:

Choice	Total of Respondents	%
Invest in instruments that surely give a loss of Rp 5,000,000	78	30.20%
Invest in instruments that have a 50% chance of losing $ 10,000,000 and 50% chance of not getting any losses	180	69.80%
Total	**258**	**100.00 %**

From the results of the research on the dimensions of certainty to get a loss in table 10, if the respondent is given funds amounting to Rp 20,000,000, then the funds will tend to be used by respondents to invest in instruments that have a chance of 50% to get losses of Rp 10,000,000 and 50 % chance of not getting anything by 180 respondents or 69.80%. While the rest, that is as much as 78 respondents or 30.20% of the total respondents prefer to invest in instruments that surely give a loss of Rp 5,000,000. The results also illustrate the prospect theory that investors will tend to choose investments that provide greater losses that are uncertain compared to choosing investments that inevitably provide losses even in smaller amounts.

Risk Dimensions as a Level of Convenience in Investing. In the second dimension test table, the risk dimension as the comfort level in investing in table 8, 129 respondents or 50.00% of 258 respondents chose to invest in investment portfolio with 60% low risk investment composition, 30% on medium risk investment, and 10% on high risk investment. 101 respondents or 39.10% of respondents chose to invest in investment portfolio with 30% low risk investment composition, 40% in medium risk investment, and 30% in high risk investment. The rest of the respondents, i.e. 28 respondents or 10.90% chose to invest with investment portfolio with 10% composition on low risk investment, 40% on medium risk investment, and 50% on high risk investment. Respondents tend to be uncomfortable to accept losses in greater amounts than to receive high profits.

Table 8. Comfort Level in Investing
if you are required to make an investment of Rp 20,000,000 each, then which investment portfolios will you choose

Choice	Total of Respondents	%
60% on low risk investments, 30% on medium risk investments, and 10% on high risk investments	129	50.00%
30% on low risk investments, 40% on medium risk investments, and 30% on high risk investments	101	39.10%
10% on low risk investments, 40% on medium risk investments, and 50% on high risk investments	28	10.90%
Total	**258**	**100.00%**

Dimensions of Experience and Knowledge and Perceptions of Investment Risks. Table 9 is the first test table in the experience dimension and knowledge and perception of investment risk, i.e. experience and knowledge of investment risk. Where in the table can be seen that as many as 178 respondents or 68.90% of the total respondents are investors who avoid risk. Seen from the selection of selected investment, that is 113 respondents or 43.80% of the total respondents chose to place funds on savings or deposits and as many as 65 respondents or 25.10% of the total respondents chose to invest in bonds of high quality and safe or bond mutual funds. The rest of the respondents, or as many as 80 respondents who are 31.00% of total respondent, are respondents who have high tolerance to risk. It is seen from the selection of their investment in stocks or stock mutual funds.

Table 9. Experience and Knowledge of Investment Risks
If you get a fund of Rp 20,000,000, then you will use the funds for

Choice	Total of Respondents	%
Placing funds on savings or deposits	113	43.80%
Invest in high-quality secured bonds or bond mutual funds	65	25.10%
Invest in stocks or stock mutual funds	80	31.00%
Total	**258**	**100.00%**

The second test of the experience dimension and the knowledge and perception of the investment risk, namely the perception of the investment risk. Test results can be seen in table 10 below.

Table 10. Perceptions of Investment Risks
How your friends describe yourself in investing

Choice	Total of Respondents	%
Dare to take risks	32	12.40%
Willing to take risks after doing research first	96	37,20%
Be careful	106	41.10%
Avoid Risk	24	9.30%
Total	**258**	**100.00%**

Based on the perception of investment risk, it can be seen that 106 respondents or 41.10% of all respondents are cautious respondents in investing. 96 respondents or 37.20% are respondents who dare to take risks after doing research first, followed by 32 respondents or 12.40% are respondents who dare to take risks. A total of 24 respondents or 9.30% of the respondents are investors who tend to avoid risks.

Dimensions of Speculative Risk. In assessing speculative risks, respondents are asked to choose one of four prize options if they can choose a prize in the race. The results of this study can be seen from the table 14 below.

Table 11. Speculative Risks
If you are in a race and you can choose one of the following options, which option will you choose

Choice	Total of Respondents	%
Cash Rp 1,000,000	170	65.90%
50% chance to get a prize of Rp 5,000,000	28	10.90%
25% chance to get a reward of Rp 10,000,000	22	8.50%
5% chance to get a reward of Rp 100,000,000	38	14.70%
Total	**258**	**100.00%**

Based on table 11 it can be seen that as many as 170 respondents or 65.90% of the total respondents dare not speculate on the risk or tend to avoid risk. Therefore they chose cash of Rp 1,000,000 as a definite gift option. A total of 38 respondents or 14.70% dare to speculate on risk or have high risk tolerance and dare to decide to choose a prize of Rp 100,000,000, although the chance to get the prize is only 5%. Furthermore, as many as 50 respondents or 19.40% of the total respondents are investors with medium risk tolerance, which consists of 28 respondents or by 10.90% choose a prize of Rp 5.000.000 with only 50% chance and 22 respondents or as much as 8.50% choose the prize of Rp 10,000,000 with a smaller chance, which is equal to 25%.

Grouping Risk Tolerance. Risk tolerance is assessed by using a multidimensional risk method, which is to add the weight of questions from numbers 9 to 14 of the research questionnaire. Risk tolerance is divided into three levels, namely risk averter with a total weight of 6-10, risk neutral with a total weight of 11-15, and risk seeker with a total weight of 16-20. The descriptive statistics of the risk tolerance grouping can be seen in table 15 below.

Table 12. Grouping Risk Tolerance

Risk Tolerance	Total of Respondents	%
Risk Averter	94	36.40%
Risk Neutral	131	50.80%
Risk Seeker	33	12.80%
Total	**258**	**100.00%**

Based on the above risk tolerance grouping, it can be seen that as many as 131 respondents or as much as 50.80% are investors with a level of neutral tolerance. A total of 94 respondents or 36.40% are investors who have low risk tolerance level. While the rest, as many as 33 respondents or 12.80% are investors who tend to have a high level of risk tolerance. This proportion shows results consistent with the proportions of Grable and Lytton (1999), where risk neutral is in the first place, and risk averters are second, and risk seekers are in third.

This is because the respondents of the research are postgraduate students with the majority doing not have enough funds to invest by speculating on the risks. Thus, the majority of respondents are risk neutral.

TESTING RESULTS AND DISCUSSION

Influence of Demographic Variables on Risk Tolerance. This study used three demographic variables, namely sex, age, and occupation. Risk tolerance is divided into risk averter, risk neutral, and risk seeker. The test result of hypothesis testing using chi square is as below.

Table 13. Chi Square Test Result Effect of Demographic Variables on Risk Tolerance

Demographic Variables	*Pearson Chi Square*	Conclusion
Gender	0.000	Significant
Age	0.018	Significant
Occupation	0.607	Not Significant

H_1: Gender affects the risk tolerance significantly

Total respondents in the study were as many as 147 respondents and women were as many as 111 respondents. Where 50.80%, consisting of 32.90% of respondents or 85 respondents are male respondents and 17.80% or 46 respondents are female respondents, is the type of investors who tolerate neutral to risk. 36.40% of respondents are investor type risk averters, consisting of 14.70% or 38 male respondents and 21.70% or 56 female respondents. While the rest, i.e. 12.80%, consisting of 9.30% or 24 male respondents and 3.50% or 9 female respondents are risk seeker investors type. Data can be seen in table 17 below.

Table 14. Respondents by Sex and Risk Tolerance

	Risk Averter		*Risk Neutral*		*Risk Seeker*		Total	
	Total	%	Total	%	Total	%	Total	%
Male	38	14.70%	85	32.90%	24	9.30%	147	57.00%
Female	56	21.70%	46	21.70%	9	3.50%	111	43.00%
Total	94	36.40%	131	50.80%	33	12.80%	258	100.00%

Table 13 shows that the Pearson Chi Square value of gender demographic variables has a value of 0.000. Therefore, the decision on hypothesis one is H0 rejected. Therefore, gender has a significant effect on risk tolerance. This study is consistent with research conducted by Saputra and Anastasia (2013), Rahmawati, et al (2015), and Chattopadhyay and Dasgupta (2015).

In accordance with the test results, it can be concluded that male and female investors have a very contradictory nature in the level of investment risk tolerance. Where male investors tend to be more aggressive and have greater acceptance of risk than female investors, the risk averages 14.70% and women 21.70%, on the other hand risk seeker men 9.30% and risk seeker women 3,50%. This is in accordance with research conducted by Saputra and Anastasia (2013) and Rahmawati, et al (2015).

H_2: Age affects risk tolerance significantly

Age group of respondents is the largest in the 21-25 years age group, which amounted to 39.50% or as many as 102 respondents. The smallest age group is in the age group above 50 years, which is equal to 1.20% or as many as 3 respondents. Where respondents with risk averter types are also in the 21-25 age group, the risk neutral types are in the 26-30 year age group, and the risk seeker types are in the 21-25 year age group.

In table 13, the Pearson Chi Square value of the age demographic variable has a value of 0.018. So the decision on hypothesis one is H0 is rejected, where age has a significant effect on risk tolerance. The results of this study are not in accordance with the research that has been done by Rahmawati, et al (2015), and Cahattopadhyay and Dasgupta (2015), Chavali and Mohanraj (2016), where the three studies found that age has no effect on risk tolerance.

Table 15. Respondents by Age and Risk Tolerance

	Risk Averter		*Risk Neutral*		*Risk Seeker*		Total	
	Total	%	Total	%	Total	%	Total	%
21 – 25	43	16.70%	42	16.30%	17	6.60%	102	39.50%
26 – 30	31	12.00%	60	23.30%	8	3.10%	99	38.40%
31 – 35	5	1.90%	8	3.10%	4	1.60%	17	6.60%
36 – 40	8	3.10%	13	5.00%	0	0.00%	21	8.10%
41 – 45	2	0.80%	5	1.90%	1	0.40%	8	3.10%
46 – 50	5	1.90%	2	0.80%	1	0.40%	8	3.10%
>50	0	0.00%	1	0.40%	2	0.80%	3	1.20%
Total	94	36.40%	131	50.80%	33	12.80%	258	100.00%

In the risk takers group, 51.56% of respondents are from the age group 21-25 years old, and continue to decline with the increasing age of respondents in the research. Therefore, it can be concluded that age differences affect the level of tolerance to risk.

H_3: Employment significantly affects risk tolerance

Investors working as private employees tend to be dominant in all types of investor risk tolerance. Overall, private employees have a proportion of 23.60% in risk inverter type, 31.00% in risk neutral type, and 7.80% in risk seeker type. Respondents with employment as an entrepreneur have a proportion of 9.70% in risk inverter type, 5.00% in risk type of averter, and 1.60% in seeker tips. Respondents with jobs as civil servants tend to be risk-neutral types of investors, since the largest proportion share is in the type of risk neutral, which is 2.70%, followed by 2.30% as the risk averter, and the last is the risk seeker with the proportion of 1, 60% of the total respondents. The data show that a housewife tends to have a risk neutral and a risk enthusiast, and not a risk-averse investor type. It can be seen from the proportion of risk averter is equal to 0.00% in respondents housewives. The results can be seen in table 19 below.

Table 16. Respondents According to Employment and Risk Tolerance

	Risk Averter		*Risk Neutral*		*Risk Seeker*		Total	
	Total	%	Total	%	Total	%	Total	
Entrepreneur	13	5.00%	25	9.70%	4	1.60%	42	16.30%
Private Employee	61	23.60%	80	31.00%	20	7.80%	161	62.40%
Civil Servants	6	2.30%	7	2.70%	4	1.60%	17	6.60%
Housewives	0	0.00%	1	0.40%	1	0.40%	2	0.80%
Others	14	5.40%	18	7.00%	4	1.60%	36	14.00%
Total	94	36.40%	131	50,80%	33	12.80%	258	100.00%

In table 16, the job demography variable has a Pearson Chi Square value of 0.607. So the decision on hypothesis one is H_0 accepted, where the work does not significantly

affect the risk tolerance. The results of this study are in accordance with research conducted by Pratiwi and Prijati (2015) and not in accordance with research conducted by Saputra and Anastasia (2013). As it happens because the research respondents expect additional income from investment returns, so the job does not affect the investment risk tolerance.

Influence of Demographic Variables on Selection of Investment Portfolio. Similar to the effect of demographic variables on risk tolerance, this study used three demographic variables, namely gender, age, and occupation. While the investment portfolio is divided into seven categories, namely gold, stocks, mutual funds, government bonds, private bonds, insurance, and other investment options. Testing hypothesis using chi square test which result can be seen as follows.

Table 17. Chi Square Test Result Effect of Demographic Variables on Selection of Investment Portfolio

Demographic Variables	*Pearson Chi Square*	Conclusion
Gender	0.001	Significant
Age	0.499	Not Significant
Occupation	0.002	Significant

H_4: Gender influences the selection of investment portfolio significantly

Table 18 shows that male respondents dominate the selection of investment portfolio in gold, which is 17.10%. Later, 13.20% of men chose to invest in stocks, 10.50% in mutual funds, 7.80% on insurance, 2.30% in government bonds, 0.00% on private bonds, and 6.20% selected investment portfolio other outside the research variables. As for female respondents, 19.40% of respondents also chose to invest in gold, 9.30% in insurance, 5.40% in stocks, 1.90% respectively in mutual funds and government bonds, and 0.80% on private bonds. While, 4.30% on the choice of other investment instruments outside the research variables. On that basis, it can be seen that gold remains the preferred investment option, both for male and female respondents in Postgraduate students in West Jakarta. On the other hand, private bonds are the most unpopular investment instruments for both male and female respondents in the research.

Table 18. Respondents by Gender and Selection of Investment Portfolio

	Gold		Stocks		Mutual Funds		Government Bonds		Private Bonds		Insurance		Others		Total	
	Total	%	Total	%	Total	%	Total	%	Total	%	Total	%	Total	%	Total	%
Male	44	14.1%	34	13.20 %	27	10.50%	6	2.30%	0	0.00%	20	7.80%	16	6.20%	147	57.00$
Female	50	19.40 %	14	5.40%	5	1,90%	5	1.90%	2	0.80%	24	9.30%	11	4.30%	111	43.00%
Total	94	36.40 %	48	18.60 %	32	12.40%	11	4.30%	2	0.80%	44	17.10%	27	10.50%	258	100.00 %

Testing hypothesis 4 seen in table 18, the gender influence on the selection of investment portfolio significantly, showing results with Pearson Chi Square value of 0.001 smaller than 0.05, then H0 rejected. This means that hypothesis 4 is accepted, gender influences the selection of the investment portfolio significantly. This is in accordance with research conducted by Saputra and Anastasia (2013), Rahmawati, et al (2015), and Chavali and Mohanraj (2016).

H_5: Age affects the selection of investment portfolios significantly

From table 19 below, it can be deduced that all age groups tend to choose gold as an investment option. At age 21 years up to 25 years, 16.70% from 39.50%, age group 26 years up to 30 years as many as 12.00% from 38.40%, age group 31 years up to 35 years as many as 1,90% from 6.60%, age group of 36 years old to 40 years old, 3.90% from 8.10%, 41 to 45 years old, 1.20% from 3.10%, 45 years up to 50 years to 0.40% of 3.10%, and the age group above 50 years by 0.40% from 1.20%.

Table 19. Total of Respondents by Age and Selection of Investment Portfolio

	Gold		Stocks		Mutual Funds		Government Bonds		Private Bonds		Insurance		Others		Total	
	Total	%	Total	%	Total	%	Total	%	Total	%	Total	%	Total	%	Total	%
21-25	43	16.70%	19	7.40%	13	5.00%	7	2.70%	1	0.40%	13	5.00%	6	2.30%	102	39.50%
26-30	31	12.00%	23	8.90%	16	6.20%	2	0.80%	1	0.40%	17	6.60%	9	3.50%	99	38.40%
31-35	5	1.90%	4	1.60%	1	0.40%	0	0.00%	0	0.00%	3	1.20%	4	1.60%	17	6.60%
36-40	10	3,90%	1	0.40%	0	0.00%	1	0.40%	0	0.00%	5	1.90%	4	1.605	21	8.10%
41-45	3	1.20%	1	0.40%	1	0.40%	0	0.00%	0	0.00%	3	1.20%	0	0.00%	8	3.10%
46-50	1	0.40%	0	0.00%	0	0.00%	1	0.40%	0	0.00%	3	1.20%	3	1.20%	8	3,10%
>50	1	0.40%	0	0.00%	1	0.40%	0	0.00%	0	0.00%	0	0.00%	1	1.40%	3	1.20%
Total	94	36.40%	48	18.60%	32	12.40%	11	4.30%	2	0.80%	44	17.10%	27	10.50%	258	100,00%

Source: data processed

Private bonds become investment instruments that tend to be avoided from all age groups of respondents. In the 21 to 25 years old and 26 years old until the age of 30 years, only 0.40% each chooses private bonds as the preferred investment instrument. For ages ranging from 36 years to 40 years old, 41 years old up to 45 years old, 46 years old up to 50 years old, and age above 50 years, respondents did not choose private bonds as the preferred investment instrument.

The results of hypothesis testing 5 in table 17 shows the results with Pearson Chi Square value of 0.499 greater than 0.05, then H0 accepted. This means that hypothesis 5 is rejected; age has no effect on the selection of investment portfolio. The results of this study are not in accordance with research conducted by Saputra and Anastasia (2013), Pratiwi and Prijati (2015), Rahmawati, et al (2015), and Chavali and Mohanraj (2016).

The age difference of respondents in the study did not affect the level of financial tolerance. This may be due to the fact that the respondent is a student who is pursuing a postgraduate program that has a better understanding of finance. They tend to be financially savvy, even supported with sufficient experience, then it does not mean that getting older will tend to avoid risk in investing.

H_6: Occupation has an effect on the selection of investment portfolios significantly

At occupation, gold remains a mainstay of investment instruments. Respondents who are self-employed, private employees, civil servants, and other employment outside the research variables continue to entrust the funds they have to invest in gold investment instruments. Bonds remain the last option to invest.

For hypothesis 6, that is occupation influential to the selection of investment portfolio significantly, showing result with value Pearson Chi Square equal to 0,875 bigger than 0,05, then H_0 accepted. This means that hypothesis 6 is rejected, the occupation has no effect on the selection of the investment portfolio. The results of this

study are not in accordance with research conducted by Sadhiq and Ishaq (2014), Pratiwi and Prijati (2015), and Chavali and Mohanraj (2016).

Table 20. Respondents According to Employment and Selection of Investment Portfolio

	Gold		Stocks		Mutual Funds		Government Bonds		Private Bonds		Insurance		Others		Total	
	Total	%	Total	%	Total	%	Total	%	Total	%	Total	%	Total	%	Total	%
Entrepreneur	13	5.00%	10	3.90%	5	1.90%	3	1.20%	1	0.40%	6	2,30%	4	1,60%	42	16,30%
Private Employee	54	20.90%	29	11.20%	23	8.90%	6	2.30%	1	0.40%	28	10,90%	20	7,80%	161	62,40%
Civil Servants	7	2.70%	3	1.20%	1	0.40%	1	0.40%	0	0.00%	4	1,60%	1	0,40%	17	6,60%
Housewives	0	0.00%	1	0.20%	0	0.00%	0	0.00%	0	0.00%	1	0,40%	0	0,00%	2	0,80%
Others	20	7.80%	5	1.90%	3	1.20%	1	0.40%	0	0.00%	5	1,90%	2	0,80%	36	14,00%
Total	94	36.40%	48	18.60%	32	12.40%	11	4.30%	2	0.80%	44	17,10%	27	10,50%	258	100,00%

Source: data processed

Occupation does not affect the selection of investment portfolios. This is because in each background group of respondent's occupation, investment portfolio equals treatment that is as an instrument to provide additional income. Therefore, regardless of the yield, the investment portfolio basically will still provide additional income on each investor.

Effect of Risk Tolerance on Investment Portfolio Selection

H7: Risk tolerance influences the selection of investment portfolios significantly

The effect of risk tolerance on the selection of investment portfolio is the last hypothesis of research. The distribution of risk tolerance to the selection of investment portfolio can be seen in table 21 below.

Table 21. Respondents According to Risk Tolerance and Selection of Investment Portfolio

	Gold		Stocks		Mutual Funds		Government Bonds		Private Bonds		Insurance		Others		Total	
	Total	%	Total	%	Total	%	Total	%	Total	%	Total	%	Total	%	Total	%
Risk Averter	40	15.50%	11	4.30%	3	1.20%	4	1.60%	1	0.40%	21	8.10%	14	5.40%	94	36.40%
Risk Neutral	45	17.40%	28	10.90%	21	8.10%	4	1.60%	1	0.40%	23	8.90%	9	3.50%	131	50.80%
Risk Seeker	9	3.50%	9	3.50%	8	3.10%	3	1.20%	0	0.00%	0	0.00%	4	1.60%	33	12.80%
Total	94	36.40%	48	18.60%	32	12.40%	11	4.30%	2	0.80%	44	17.10%	27	10.50%	258	100.00%

It can be seen that respondents with low risk tolerance and neutral risk tolerance tend to choose to invest in a secure investment instrument, namely gold. For the type of respondents who have a high tolerance level, have the equation of investment placement proportion, which is 3.50% in gold and 3.50% in stocks as the investment instrument with the highest risk. Respondents at the level of neutral tolerance, the stock occupies the second position as the instrument selected respondents to invest, with a proportion of 10.90% of the total proportion of investment from the three risks on the seven instruments of investment.

CONCLUSION

This study examines the effect of demographic variables on the selection of investment portfolio and risk tolerance, and the effect of risk tolerance on the selection of investment portfolio in Postgraduate students in Indonesia. Based on the research that has been done, then there are conclusions that can be taken, namely:

1. Demographic variables have a significant effect on investor risk tolerance of Postgraduate students in Indonesia. This is evident from the results of the research test,

in which two of the three demographic variables used, namely Gender and age, significantly influence the tolerance of investor risks Postgraduate students in Jakarta, and only occupation that does not significantly affect the investor risk tolerance Postgraduate students in Jakarta.

2. Demographic variables do not affect the selection of investment portfolio in Postgraduate students in Jakarta. This conclusion is derived from two factors of demographic variables, namely age and occupation, which have no effect on the risk tolerance of postgraduate students in Jakarta. As for gender, it has an influence on the selection of investment portfolio significantly.
3. Risk tolerance affects towards the selection of investment portfolio significantly in postgraduate students in Jakarta.

Based on the results of the research, it is expected that investors can be more familiar with the level of tolerance to the investment risk of their own personality traits. It certainly cannot be separated from the background of demography or demographic factors that helped shape the mindset of investors in investing. Investors with male gender can choose investment products with high risk level, while investors with female gender can choose investment products with low risk level. So in the future, the selection of investment portfolio can provide benefits and satisfaction on the investment made.

For investors in the elderly, it is advisable to choose to invest in investment products with low risk levels, such as gold and deposits. While for investors with young age, allowed to choose investment products with high risk levels, such as stocks and foreign exchange. So from the investment activities undertaken, it is expected that investors can precisely select investment products in accordance with the financial plans that have been owned by each investor.

Investment advisers can provide the right investment portfolio options to potential investors by considering the gender and age factor of potential investors, who have different levels of tolerance to risk, which will ultimately have different effects on the selection of investment portfolios. For example, in potential male investors, investment advisers can offer investment products with high risk levels, such as mutual funds, insurance, stocks, commodity exchanges, and foreign exchange. As for potential female investors, investment advisors can offer low risk investment products, such as gold, Bank Indonesia Certificates, government bonds, and banking products such as deposits. This is because, from the results of the study found that investors with male sex tend to risk seeker, while investors with female sex tend to risk averter. In addition, potential young investors can also be offered investment products with high risk levels, while for prospective investors who are elderly, are expected to invest in investment products with low risk levels.

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