

CHAPTER 3

Research Methodology

3.1 Population and Sample

This study uses all investors in Yogyakarta, who are investing in stocks, as the population. The samples are 100 investors in Yogyakarta. Researcher use purposive sampling not random sampling since the objective of this research is analyzing the relation between gender and investment decision. Criteria for sample are investor who investing in stock or currency trading. The investors come from some security companies throughout Yogyakarta, such as Valbury, IMF, Danareksa, Anugerah Securindo Indah, Bhakti Securities, BNI Securities, Bumiputera Capital Indonesia, Mega Capital Indonesia, Optima Securities, Pacific Capital, Recapital Securities, Reliance Securities, Sinar Mas Securities, Mahadana Securities, Tri Megah Securities.

3.2 Data and Data Gathering

Primary data is used in this research. In primary data collection, people collect the data using methods such as interviews and questionnaires. The key point here is that the data people collected is unique to you and your research and, until you publish, no one else has access to it. There are many methods of collecting primary data and the main methods include: questionnaires, interviews, focus group interviews, observation, case-studies, diaries, critical incidents, and portfolios. In this research, the data are collected by distributing

questionnaire to the sample. The questionnaire is gotten from the internet (http://www.eng.iastate.edu/tkhira/select_papers/R.Results-webposting.pdf).

The main data collection strategy for this research was through distributing questionnaire. A total of one hundred and forty five questionnaires are distributed across some securities market in Yogyakarta, in order to prevent from error responds. First, researcher will ask for permission to the securities market to distribute the questionnaire to the investors. After get the permission, questionnaire will be distributed. Then, after the respondents give it back to the researcher, the questionnaires will be analyzed.

3.3 Measurement of Variables

The dependent variable in this research is investment decision. The independent variable in this research is gender. Researcher tries to analyze the relation between gender (independent variable) and investment decision (dependent variable). Thus, causal explanatory study is used in this research because this study explains the relationship among the variable.

The questionnaire consists of ten questions and provides insight into the differences between the behavior investment between women and men. In each question, there are some possible answers that can be chosen by the respondents but the respondents only choose one answer for each question. Measuring the answer of the questionnaire is by calculating total the score from each number of questionnaires. Every possible answer has different score.

The questionnaire explores differences in women's and men's involvement in investments, risk tolerance levels, attitudes toward and confidence in investing. The criteria used in the questionnaire:

Table 2
Criteria in Questionnaire

If your score is:	Investment Risk profile	Asset Mix
11,00 or less	Very Conservative	100% income
Between 11,01 and 20,00	Conservative	60 % income & 40 % equities
Between 20,01 and 33,00	Moderate	40 % income & 60 % equities
Between 33,01 and 46,00	Aggressive	25 % income & 75 % equities
46,01 and greater	Very Aggressive	100% equity

Source: http://www.eng.iastate.edu/tkhira/select_papers/R.Results-webposting.pdf

Based on this criteria, investors can be classified to their investment risk profile depend on their total score.

Type of questions used in the questionnaire is closed questions. A question is asked and then a number of possible answers are provided for the respondent. The respondent selects the answer which is appropriate. Closed questions are particularly useful in obtaining factual information. In addition, the questionnaire used nominal scale.

3.4 Method of Analysis and Hypotheses Testing

First, general descriptive statistics were computed to provide a broad overview of participants' opinions. Second, to test gender differences in investment decision making, simple regression analyses were performed, using the questionnaire item as the dependent variable, and gender as

independent variable. Dummy variables are also used to determine the relationship between qualitative independent variables or in this research gender and dependent variable. Third, to determine whether women choose less risky investment than men, t-tests were performed on each of the items.

Researcher analyzes the questionnaire and makes the descriptive statistic from the questionnaire result. The descriptive statistic consists of some statistical data from male and female investors. In each questionnaire, the total score reflect to the risk profile of the investors. After the descriptive statistics were made, the questionnaire can be analyzed.

Table 3
Example of How to Analyze Questionnaires

If your score is:	Investment Risk profile	Total women	Total Men
11,00 or less	Very Conservative	x	x
Between 11,01 and 20,00	Conservative	x	x
Between 20,01 and 33,00	Moderate	x	x
Between 33,01 and 46,00	Aggressive	x	x
46,01 and greater	Very Aggressive	x	x
Total Mean			

Source: http://www.eng.iastate.edu/tkhira/select_papers/R.Resultsl-webposting.pdf

Researcher uses simple regression to test the relationship between gender and investment decision. Dummy variables are used in this research to determine the relationship between qualitative independent variables and a dependent variable. The data points for females are shown as 0's, the 1's represent males. Two parallel lines are constricted for the scatter diagram. The top one fits the data for female and the bottom line fits the male data points.

Each of these lines was obtained from a fitted regression function of the form:

$$Y = b_0 + b_1 X$$

Y = Total Questionnaire Score

X = Gender

The result of simple linear regression will be explained. Then, the first hypothesis will be tested t-test, p-test, and R^2 . This study uses t-test and p-test to determine the statistical significance between a sample distribution mean and a parameter. Before test the hypothesis with t-test and p-test, the null and alternative hypothesis will be made. The hypotheses are:

- a. H_0 : Gender does not influence investment decision
- b. H_1 : Gender influences investment decision

In t-test, researcher used 5% level of significance. Then, setup the degree of freedom, those are 118. Find t-table with $\alpha = 5\%$ and $df = 118$. Compare the t calculated and t table. If t calculated bigger than t table, it will reject the null and accept alternative hypothesis. It means that gender affect investment decision. In p-test, researcher also used $\alpha = 5\%$. The rejection of null hypothesis and acceptance of alternative hypothesis when $p\text{-value} < \alpha$. Correlation analysis is used (R^2) to check how much do the variation in investment decision is explained by the variation in gender.

Second hypothesis testing begun when 1 sample t-test is performed to every gender mean. The purpose of this test is to check whether the mean of both men and gender fit with the criteria of type of investor that we have made.

The hypotheses for one sample t-test:

1 sample t-test for female's mean

H_0 : Women mean $\leq 20,00$; women classified as conservative investor

H_1 : Women mean $> 20,01$; women classified as moderate investor

1 sample t-test for male's mean

H_0 : Men mean $\leq 33,00$; men classified as moderate investor

H_1 : Men mean $> 33,01$; men classified as aggressive investor

The analyzer uses 95% confidence level. In hypothesis testing for the one sample t-test, statistical decisions are made to decide whether or not the population mean and the same mean are different. We will compare the calculated value with the table value. If the calculated value of the one sample t-test is greater than the table value, then we will reject the null hypothesis. Otherwise, we will reject the alternative hypothesis.

After 1 sample t-test finished, paired sample t-test is used to compare two population means in the case of two samples that are correlated, in this case, women mean and men mean. To calculate the paired sample t-test, first we have to set up the hypothesis. In a paired sample t-test, we set up two hypotheses.

H_0 : the mean of two paired samples are equal.

H_1 : the means of two paired samples are not equal

After calculating the parameter, we will compare the calculated value with the table value. If the calculated value is greater than the table value, then we will reject the null hypothesis for the paired sample t-test.

Then, after tested with 1 sample and paired t-test, the data will compare each other. The purpose is to check the second hypothesis whether women choose less risky investment than men. The mean will be compare and see from the type of investor they classified. Last, qualitative explanation will support the result.

