

CHAPTER 4

DISCUSSION

4.1 Research Explanation

This research analyzes the influence of gender when making an investment decision. Based on some previous research, gender affects people in choosing investment (Mittal and Vyas, 2009). In addition, some studies believe that men and women have different attitudes toward money and investing (Barber and Odean, 1995), Barskey *et al.* (1996), Jianakoplos and Barnesek (1998), and (Lewellen et al, 1977). They stated that women choose less risky investment than men. In this project, researcher is encouraged to prove that gender is related with investment decision and whether women are more risk averse than men.

The data are gotten by distributing questionnaire throughout Yogyakarta, Indonesia. Researcher distributed 145 questionnaires to several security markets in Yogyakarta, that are Danareksa, Valbury, BNI Sekuritas, Mahadana, Sinar Mas Sekuritas, and Optima Sekuritas. But, after the questionnaires checked, there are only 119 questionnaires returned and can be used in this project, in order to be analyzed. The response rate is 0,82. (119/145).

Table 4
The Distribution of Respondents on Each Company

Company	Gender		Total
	Male	Female	
BNI Securities	9	6	15
Sinar Mas Securities	21	17	38
Optima Securities	10	4	14
Danareksa	11	8	19
Valbury	5	3	8
Mahadana Securities	15	10	25
Total	71	48	119

Source: Primary data

Total 119 returned from 6 security companies in Yogyakarta. Sinar Mas Security gives the most respondents, 38 people. In contrast, Valbury in Atma Jaya University only give 8 respondents.

Based on respondent characteristic, the data can be classified as follow.

Table 5
Respondent Characteristic Based on Gender

Gender	Total	Percentage
Male	71	59,7%
Female	48	40,3%
Total	119	100%

Source: Primary data

In table 5, the data show that respondents consist of 71 males and 48 females. If they converted to percentage, 59,7% of the respondent are males and the rest of 40,3% are females. Based on the result, it indicates that majority of the respondents are male.

The descriptive statistic is made to describe the score of the respondents. Table 6 depicts the descriptive statistic.

Table 6
Descriptive Statistic

Score	Investment Risk profile	Total Women	Total Men
11,00 or less	Very Conservative	0	0
Between 11,01 and 20,00	Conservative	9	5
Between 20,01 and 33,00	Moderate	29	38
Between 33,01 and 46,00	Aggressive	10	26
46,01 and greater	Very Aggressive	0	2
Total		48	71
Mean		27,79	33,21

Source: Primary data

The female investment risk profile is range between conservative and aggressive. Most women are in moderate level, 29 persons. 9 women are included in conservative level and 10 women classified as aggressive investors. No women are entered in very conservative and very aggressive level. The women mean is 27,79.

Different with female investors, male investors are range between conservative and very aggressive. Like women investors, most of men investors also classified as moderate investors. In contrast with female investors, there are 2 men investors in very aggressive level and 5 people classified as conservative investor. The rest of 26 people are included in aggressive.

4.2 Hypotheses Testing

4.2.1 First Hypothesis

The first hypothesis is “the differences in gender give impact to the investment decision”. Simple regression and dummy variable are used to analyze whether gender influence investment decision.

$$Y = b_0 + b_1 X$$

Y = Total Questionnaire Score (investment decision)

X = Gender (0 = female, 1 = male)

The data can be seen in Appendix 3. Researcher use Minitab to evaluate the data (Appendix 4). Then, the regression equation is

$$Y = 27,8 + 5,42 X$$

The slope of b_1 is 5,42, applies only to males. For male test taker, the estimated investment test score is increased, relative to female test, by 5,42 points. The intercept b_0 is 27,8. Technically, the intercept is the point at which the regression line and the y-axis interact. This mean that when $x=0$ (for female), the mean score will about 27,8. In the other side, when $x=1$ (for male), the mean score will about 33.

Coefficient of Determination (R^2)

R-sq (adj) = 12,6 % (see appendix 4)

We found that R^2 is equal to 12,6%. This statistic tell us that 12,6% of the variation in investment decision is explained by the variation in gender. The remaining 77,4% is unexplained. Gender only explain 12,6% because there many factors except gender that also explain investment decision, such

as age, income, education, wealth and marital status of individuals. According to Bajtelsmit and Bernasek (1996), they found that gender is the third most powerful determinant in investing, after age and income. Thus, although gender has linear relationship with gender, gender just explain investment decision by 12,6%.

Researcher uses t-test and p-test to determine the statistical significance between a sample distribution mean and a parameter. The hypotheses are:

H_0 : Gender does not influence investment decision

H_1 : Gender influence investment decision

Use $\alpha = 5\%$

Table 7
t-test and p-test

Predictor	Coefficients	SE Coefficients	t	p
Constant	27,7917	0,9874	28,15	0,000
X	5,420	1,278	4,24	0,000

Source: Appendix 5

t-test

The value of test statistic is $t = 4,24$

Use 5% significance level and degree of freedom are 118, $t_{table} = 1,980$

The rejection region is

$$t < -t_{0,025/118} \approx -1,980 \text{ or } t > t_{0,025/118} \approx 1,980$$

$$t_{calculated} > t_{table} = 4,24 > 1,980$$

p-test

p-value = 0,000

The rejection if p-value < α

0,000 < 0.05

The value t is 4,24; with a p-value of 0. Both t-test and p-test reject the null hypothesis and accept alternative hypothesis. Therefore, there is overwhelming evidence to infer that a linear relationship exists. What this mean is that gender affect investment decision. This result support some previous research that gender is an effective differentiating and classifying factor in investment (Bajtelsmit & Bernasek, 1996; Bajtelsmit & VanDerhei, 1997; Blume, 1978; Coet & McDermott, 1979; Hawley & Fujii, 1993-1994; Higbee & Lafferty, 1972; Hinz, McCarthy, & Turner, 1997; Rubin & Paul, 1979; Sung & Hanna, 1996b; Xiao & Noring, 1994).

Actually there many factors influence investment decision, not only gender but also age, income, education, and even marital status (Mittal and Vyas, 2009). But, gender is unique that differentiate it with other factors. Age always increase, income can change every time, education can be learned, and marital status can alter. People can not change their gender. They may change their sex, from male to female, but this just outside their body. They can not change the stereotype they have since they were born.

The starting point of this paper was the stereotype that women are more risk averse, less confident, and less risk tolerace than men with respect to financial decision making. Every human being has stereotypical identity, they

have some characteristic that differentiate one and another. Difference characteristic among people make each people have different strategy in making investment. Hinz *et al.* (1997), using data from the study of the federal government's Thrift Saving Plan in 1996, concluded that women are less likely to hold risky assets and more likely to allocate assets toward fixed income alternatives (65 per cent of women vs 52 per cent men) rather than toward equities (28 per cent women vs 45 per cent men).

Women tend to avoid investment with high risk. Sunden and Surette (1998) using data from the Survey of Consumer Finance done by the US Federal Reserve System, came to the conclusion that women tend to invest more conservatively and tend to invest their retirement accounts in a more conservative fashion than men. Hallahan, Faff, and Mckenzie (2004), using a psychometric Risk Tolerance Score (RTS) also found that women had lower risk tolerance than men.

Confidence level from one people to another is not the same. The availability of data, practice, and socialization can enhance people's confidence. When people feel certain about the situation, their confidence will be higher. Self-confident people are generally more positive when they believe in themselves and their abilities, and they also believe in the wonders of living life to the full. Men and women have different level of confidence when they make investment decision. A 1992 study conducted by the Investment Marketing Group of America entitled "Women Are Different" maintained that women tend to be less confident in their ability to make the right financial decisions (Schumell, 1996).

There also is a “prevalent belief in our culture that men should, and do, take greater risks than women” (Slovic, 1966, p. 169), which has generated a strongly held view supported by research that gender is an effective differentiating and classifying factor. People have special characteristic in investment decision because of their confidence and attitude toward risk. Thus, gender gives significant influence to investment decision.

4.2.2 Second Hypothesis

Second hypothesis is “women choose less risky investment than men”. Researcher tests this hypothesis by analyzing the result of the questionnaire. Before directly use the questionnaire’s result, the data will be test using t-test to check whether the data are valid or not.

1 sample t-test

One sample t-test is a statistical procedure that is used to know the mean difference between the sample and the known value of the population mean. In one sample t-test, we know the population mean. We draw a random sample from the population and then compare the sample mean with the population mean and make a statistical decision as to whether or not the sample mean is different from the population.

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

Use 5% significance level and degree of freedom are 47. Women mean is 27,79.

t calculated = 7,99

t table = 1,677

t calculated > t table → 7,99 > 1,677

Accept H_1 , reject H_0 . It means that the mean of women classified as moderate investors.

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

Use 5% significance level and degree of freedom are 70. The men mean is 33,21.

t calculated = 0,26

t table = 1,667

t calculated < t table → 0,26 < 1,667

Accept H_0 , reject H_1 . It means that the mean of men classified as moderate investor.

Paired sample t-test

Paired sample t-test is a statistical technique that is used to compare two population means in the case of two samples that are correlated. By using the paired sample t-test, we can statistically conclude whether or not male and female are different in making investment decision.

The first is null hypothesis, which assumes that the mean of two paired samples are equal. The second hypothesis in the paired sample t-test will be an alternative hypothesis, which assumes that the means of two paired samples are not equal.

H_0 : Mean male - Mean Female = 0

H_1 : Mean Male – Mean Female \neq 0

Use 5% significance level and degree of freedom are 119

t calculated = -4,24

t table = 1,980 or -1,980

t calculated < t table (-4,24 < -1,980). Accept H_1 , reject H_0 .

After analyzed using 2 sample t-test, t calculated (-4,24) is bigger than t table (-1,980). So, the null hypothesis is rejected and accept alternative hypothesis. It means the means of two paired samples are not equal. The mean of women score is different with men score. From this statement, we can analyzed and compare the mean from men and women. It is accept the second hypothesis that women choose less risky investment than men.

Both men and women classified as moderate investor. But, from the mean, women 27,79 and men 33,21, we can see that women are more risk averse than men. This study support previous study that women choose less risky investment than men (Barber & Odean,1995; Powell & Ansic ,1997; Barskey *et al.*, 1996; Byrnes, Miller, & Schafer 1999; Jianakoplos & Barnesek, 1998; Wang, 1994; Sunden & Surette 1998; Grable & Lytton 1998; Sung & Hanna 1996; Hallahan, Faff, and Mckenzie 2004; Schumell, 1996; Estes & Hosseini, 1988).

Men and women have different characteristic in making investment decision. This different can be seen from some aspects that are risk averse, risk tolerance, and confidence level. Thus, they perform differently in all aspects, in this case in making investment. But, nowadays, the different is not too significant. The result is not surprised since emancipation change the role of gender. Today, equality between male and female look more clearly.

Some successful women now are appearing in global economy, for example:

(http://womeninbusiness.about.com/od/succesfulbusinesswomen/Profiles_of_Succesful_Business_Women.htm)

a. Angela Jia Kim

Successful woman entrepreneur Angela Jia Kim is a young, multi-talented professional. In addition to being an accomplished pianist (she even has several CDs out), she owns two businesses: Om Aroma & Co., that sells luxury organic spa and skincare products; and Savor the Success, a boutique social network for female entrepreneurs and professionals.

b. Derschaun Sharpley

Woman entrepreneur, Derschaun Sharpley, is the president and founder of Helping Individuals Succeed (H.I.S.). Launched in August of 2004, H.I.S. is located in Detroit, Michigan and focuses on developing positive character, and building self-esteem in the lives of inner city youth.

c. Ann Bartlett

Business woman Ann Bartlett, is the founder and owner of The Body in Balance Center, Alexandria, Virginia.

The example of more successful business women appearing in recent time may change the characteristic of women. Women will be more confidence and risk taker because of their intelligence and the broader interaction with other people. Therefore, although women still choose less risky investment than men, the gap between them is getting closer.

