# CHAPTER IV
# RESEARCH REVIEW AND DISCUSSION

**A. Research Review**

1. Subjective Well-Being (SWB).

Happiness or subjective well-being (SWB) is a dependent variable that will be influenced by some independent variables. These variables are used to measure happiness felt by people in Indonesia (individual data from IFLS-5 2014 households). The happiness or SWB is measured with 2 levels: unhappy (0) and happy (1).

**Table 4.1**
**Subjective Well-Being Data**

| SWB | Frequency | | |
|---|---|---|---|
| | Urban | Rural | Total |
| Happy | 5930 | 2343 | 8273 |
| Unhappy | 371 | 185 | 556 |
| Total Obs | 6301 | 2528 | 8829 |

Table 4.2 tells about the happiness frequencies from urban and rural areas. In this study, the value of 1 shows happiness and 0 shows unhappiness. The number of happy people in the urban area is 5930 and in the rural area is 2343. Meanwhile, the number of people who do not feel happy in the urban area is 371 and in the rural area is 185 with the total of observation of 8829 people, which are divided into 6301 in the urban area and 2528 in the rural area.

2. Subjective Health Status (SHS).

  Subjective Health is an independent variable that is measured by looking at subjective health in general. Health has become an important role in looking at the proportion and the impact of happiness on IFLS-5 household.

**Table 4.2**
**Health Data**

| SHS | Frequency | | |
|---|---|---|---|
| | Urban | Rural | Total |
| Health | 5260 | 2092 | 7352 |
| Unhealthy | 1041 | 436 | 1477 |
| **Total Obs** | 6301 | 2528 | 8829 |

Source: Data Processed

  Table 4.4 explains the frequency of people who feel healthy and unhealthy in the urban and rural areas. This study used a sample in the urban area of 6301 and the rural area of 2528 with a total sample of 8829. The Frequency of people who feel health in the urban area is 5260 and in the rural area is 2092. Meanwhile, the frequency of people who do not feel healthy in the urban area is 1041 and in the rural area is 436.

3. Income.

In general, income has become one of the important things or a factor that can impact the subjective well-being. Sohn (2010) and Ladiyanto *et al* (2011) asserted the importance of material factor (income) and non-material factor for happiness in Indonesia. In this study, income is an independent variable or the variable that affects the dependent variable.

**Table 4.3**
**Income Data**

| Region | Mean | Std. deviation | Min | Max |
|---|---|---|---|---|
| Urban and Rural | 2.096.324 | 1.902.897 | 500.000 | 30.000.000 |
| Urban | 2.210.072 | 2.012.264 | 500.000 | 30.000.000 |
| Rural | 1.785.390 | 1.555.451 | 500.000 | 30.000.000 |

Source: Data Processed

Table 4.3 describes the income in Indonesia and on the urban area also rural area with the minimum income of Rp 500.000 and maximal income of Rp 30.000.000. The average income in the urban area is Rp 2.210.072 with the standard deviation of Rp 2.012.264. Meanwhile, in the rural area, the standard deviation is only Rp 1.555.451 and the average income is Rp 1.785.390 or smaller compared to the urban area. Thus, the average of Indonesian people's income is Rp 2.096.324 and the standard deviation is Rp 1.902.897.

4. Education.

Education is one of the factors that influence happiness. In micro theory, a person who has a higher level of education can increase his/her income; when his/her income

is higher, his/her primary needs can be more fulfilled than those with low income. In this study, the education is measured by the last level of an individual's education in IFLS-5 household data. The purpose of this analysis is to measure the effect of education on individual happiness or SWB in Indonesian households.

**Table 4.4**
**Education Data**

| Education Attainment  (Year) | Education Attainment | | Quantity |
| --- | --- | --- | --- |
| | Urban | Rural | |
| 0 | 60 | 56 | 116 |
| 1-6 | 1125 | 778 | 1903 |
| 7-9 | 2211 | 886 | 3097 |
| 10-12 | 1413 | 368 | 1781 |
| 13-16 | 1363 | 412 | 1775 |
| 17-18 | 126 | 28 | 154 |
| 19-21 | 3 | - | 3 |
| **Total** | 6301 | 2528 | 8829 |

Source: Data Processed

Table 4.5 describes the levels of education earned by individuals in IFLS-5 household's data. Overall, most individuals stop their education in the 7th year through the 9th year or at the junior high school, from grade one to grade three. Meanwhile, in the next years, education levels decreased until the 21st year consisting

of 3 people only. The urban and rural areas have a similarity to the highest level of education in the same years, i.e. in 7$^{th}$ year and 9$^{th}$ year. At the higher education level, the value of individuals decreased until the level of S3 (Doctor) or on the long education of 21$^{st}$ year. On the long education of 21$^{st}$ years, only 3 individual and only occur in the urban area, while the rural area has no one.

5. Subjective Unemployment Status (SUS).

Subjective Unemployment has a negative impact on happiness or SWB. This statement is supported by Sukirno (2000) who said unemployment can have adverse effects on the economy as well as individuals and communities.

**Table 4.5**
**Unemployment Data**

| SUS | Frequency | | |
| --- | --- | --- | --- |
| | Urban | Rural | Total |
| Employ (0) | 5724 | 2283 | 8007 |
| Unemployment (1) | 577 | 245 | 822 |
| **Total Obs** | 6301 | 2528 | 8829 |

Source: Data Processed

The table explains the frequency from 1 (the employed) and 0 (the unemployed). In the urban areas, individuals who work (the employed) are 5724 and those who do not work (the unemployed) are 577. Meanwhile, in rural areas, the total of the employed and the unemployed is 2283 and 245, respectively.

1. Normality Test

**Table 4.6**
**Normality Test**

| Variable | Obs | W | V | Z | Prob>z |
|---|---|---|---|---|---|
| R | 8829 | 0.46783 | 2378.759 | 20.742 | 0.00000 |
| SWB | 8829 | 0.99697 | 13.531 | 6.950 | 0.00000 |
| SHS | 8829 | 0.99923 | 3.456 | 3.309 | 0.00047 |
| Income | 8829 | 0.99238 | 34.060 | 9.413 | 0.00000 |
| urban_rural | 8829 | 0.99979 | 0.947 | -0.147 | 0.55825 |
| SUS | 8829 | 0.99779 | 9.881 | 6.111 | 0.00000 |
| Education | 8829 | 0.98602 | 62.471 | 11.031 | 0.00000 |

Table shows that all of variable is normal or not distributed. Gujarati (2009) said if the normality test is dominant, not normal then the assumption that can be used is the Central Limit Theorem assumption. The central limit theorem is a condition where the amount of observation is enough (n>30), then the normality assumption can be ignored.

2. **Heteroscedasticity Test**

The test of heteroscedasticity on this research data by Breusch-Pagan test (Cook and Weisberg, 1983) shows the data does not have heteroscedasticity.

**Graphic 4.1**
**Heteroscedasticity**

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Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
        Ho: Constant variance
        Variables: healthy logwage urban_rural unemployment educ

        chi2(5)     =   2533.33
        Prob > chi2 =    0.0000
```

3. **Multicolinearity Test**

**Table 4.7**
**Multicolinearity**

| Variable | VIF | 1/VIF |
|----------|-----|-------|
| SHS | 1.01 | 0.988653 |
| Income | 1.19 | 0.843479 |
| Education | 1.19 | 0.839706 |
| urban_rural | 1.03 | 0.970163 |
| SUS | 1.01 | 0.992663 |
| Mean VIF | | 1.09 |

The table shows the VIF < 10, it is mean the regression is free from the problem of multicollinearity. Gujarati (2007) provided some indicators that can be used to see the presence of Multicollinearity on a regression equation and one of the indicator is the value of *the variance inflation factor* (VIF)

B. **The Analyzes of Odd Ratio of Logistic Regression in Indonesia**

1. Logistic Regression.

**Table 4.8**
**Logistic Regression**
**Dependent Variable: Subjective Well-Being**

| Independent Variable | Indonesia | | Urban | | Rural | |
|---|---|---|---|---|---|---|
| | Coef | Odd Ratio | Coef | Odd Ratio | Coef | Odd Ratio |
| **SHS** | 1,0639*** | 2,8978*** | 0,9085*** | 2,4806*** | 1,362*** | 3.904*** |
| | (0,9519) | (0,2758) | (0,1184) | (0,2937) | (0,1636) | (0,6389) |
| **Income** | 0,398*** | 1,4889*** | 0,4162*** | 1,5162*** | 0,366*** | 1,443*** |
| | (0,0781) | (0,1162) | (0,0958) | (0,1453) | (0,1341) | (0,1935) |

Continues Table 4.8

Logistic Regression

| Education | 0,1363*** | 1,1461*** | 0,1441*** | 1,15505*** | 0,122*** | 1,129*** |
|---|---|---|---|---|---|---|
| | (0,0122) | (0,014) | (0,0148) | (0,0171) | (0,0205) | (0,0232) |
| SUS | -0,703*** | 0,495*** | -0,7778*** | 0,4593*** | -0,5856*** | 0,556*** |
| | (0,1214) | (0,0601) | (0,1466) | (0,0673) | (0,22009) | (0,1225) |
| Observation | 8829 | | 6301 | | 2528 | |
| Pseudo $R^2$ | 0,0988 | | 0,0968 | | 0,1036 | |

***,**, * significant at 0.01, 0.05, 0.1 respectively; () Robust Standard Error

Source: Data Processed

The table above is the result of processing data dependent and independent that use analysis of logistic regression odds ratio using data from IFLS-5. The total observation is 8829 individuals in Indonesia: 6301 ones in urban areas and 2528 ones in rural areas. The data processing above used Subjective Well-Being (SWB) or can be said as individual happiness which was used as the dependent variable. The analysis in this Table has been done in 3 areas: urban area, rural area, and Indonesia as a whole area. The analysis conclusion from these areas/regions above can be seen as follows:

a. Subjective Health Status (SHS).

The analysis result in Indonesia (as a whole) shows the subjective health status variable has a positive and significant correlation with happiness with the level of probability 0.000 or on the level of significance at 1%. And the result from the odd ratio also shows a healthy person will be happier (2.8978 points) than those who feel unhealthy. The urban and rural areas also show a positive and significant correlation with happiness with a significance level of 1%. In the urban area, the result of odd ratio shows a person who feels healthy will be happier (2.4806 points) than an unhealthy person, while in rural areas, a person who feels healthy will be happier (3.904 points).

On the variable SHS, it has been proven that the health variable has an effect on individual happiness or SWB. This study is also in line with research conducted by Arkoff (1975) he said the happiness can also be obtained from three things one of them is health. Besides that, Buss (in Franken, 2002) also said there are eight basic desires that a person has, one of them is the desire to be healthy. An individual who feels healthy will be easier to fulfill his goals and purpose in their lives. Seligman (2005) also said a healthy people get a positive contribution in happiness compared to unhealthy people. Rahayu (2014) also proved that health is a part of SWB or happiness.

b.  Income.

The coefficient results from income variable in urban and rural areas explain the existence of a positive correlation between dependent variables with a significance level of 1%. This is supported by the result of odd ratio estimation which shows an individual who has higher income in the urban area (1.5162 points) and in the rural area (1.443 points) will be happier compared to an individual with low income. The result of the areas above has the same result in Indonesia as a whole that income has a positive and significant correlation with happiness with the significance level of 1%. This is also proven by the result of odd ratio that shows an individual with higher income will be happier (1.4889 points).

The analysis result of the income variable showed that it has a positive and significant correlation with happiness or SWB. Easterlin (1974) found the Easterlin Paradox, i.e. an increase in income cannot increase a happiness or SWB. Easterlin Paradox happened because of two things, i.e. adaptation process and relative income. According to Brikman (in Wu, 2001), the adaptation process or the hedonic adaptation is a conjecture that indicates the rapid return of the level of human happiness, even though someone has undergone changes due to positive or negative experience. Based on this theory, if an individual earns money, then he/she has the desire to increase the earning of money with the hope that his/her level of happiness will increase. However, in essence, the level of happiness does not

change because of the adaptation that person feels towards his/her environment. Relative income is defined as the social comparison of individuals' income with his/her community's income. These two behaviors create the income aspiration, which is the ideal measure of individual income that covers primary needs and other needs (Alois Stutzer, 2004). This is what affects the Easterlin Paradox. The existence of the Easterlin paradox showed that there are other factors besides income (material) that can affect happiness. Blanchflower and Oswald (2004) revealed that relative income has an important role in increasing the happiness, not absolute income. Seligman (2005) claimed that money is an external factor that can affect happiness. Todaro and Smith (2006) revealed that the level of income is one of the ways used by society to gain a better life. Stutzer (2010) found that income aspiration is a determinant of happiness. Relative income also serves as a determinant of happiness (Clark and Senik, 2011). The positive influence of income on happiness is also strengthened by Rahayu (2014) who proved that income can positively influence happiness.

c. Education.

The education data was elicited from urban and rural areas and Indonesia as a whole. The coefficient result in the education variable also shows a positive and significant correlation with happiness with the level of significance at 1%. While the result from odd ratio also shows the education affects positive and significant to happiness. So,

in Indonesia, an individual who has more than a one-year education will feel happier (1.1461 points), in the urban area 1,155 point and in the rural area (1.129 points).

The education variable generates the same result as the studies conducted by Seligman (2003) and Huang (2008). They explained that the happiness can be achieved when an individual can fulfill various goals; one of them is education. Chen (2012) proved that education along with the ability to establish broader correlation will have a positive impact on well-being. This is in line with Cunado and Gracia's (2012) idea who said that people with higher level of education have a possibility to get a better job so their income can be higher and influence the level of their happiness. Rahayu (2014) also found that education has an important role in happiness.

d. Subjective unemployment status.

In Indonesia, the SUS variable has a negative and significant effect on happiness with the significance level of 1%. This is also confirmed by the odd ratio result that the unemployed are not happier (0.495 points) compared to those who have a job or the employers.

In the urban area, the SUS variable has a negative and significant correlation with happiness with the significance level of 1%. The odd ratio estimation also proves that the unemployed are not happier (0.4593 points). In the rural area, the unemployment variable has a positive and significant correlation with happiness

with the significance level of 1%. The odd ratio result also shows that the unemployed do not feel happier (0.5567 points). Thus, the unemployment variable has a negative effect on happiness.

The SUS variable shows a negative and significant correlation with happiness. This is in line with a study by Clark and Oswald (1994) which used microdata from the United Kingdom. They found that unemployment can significantly decrease people's happiness. Then Di Tella, Mac Culloch, and Oswald (2001) found the same result, i.e. the unemployed is less happy than the employed. Frey and Stutzer (2002) also reveal a negative effect of unemployment on happiness as evidenced by their empirical analysis on happiness.

Overall, this study shows the significance between variables in Indonesian rural and urban areas. The variables of SHS, income, and education have a correlation and positive effect on SWB or happiness. The value of probability for urban and rural areas is similar, i.e. 0.000. Nevertheless, the level of income in the rural area has a different value of probabilities, i.e. 0.006, but is still on probability level of 1%. Meanwhile, the unemployment variable produces a significant correlation with unhappiness with the probability value of 0.000 in the urban area and 0.008 in the rural area. The value of probability in Indonesia has a similar value with each variable, i.e. 0.000.

The equation model in this study generates 9.8% (Indonesia), 9.6% (urban area), and 10.36% (rural area). These areas are explained by the factors that influence SWB or happiness probability. The percentage is shown in Pseudo $R^2$

value contained on the Table above, including 0.0988 points (Indonesia), 0.0968 points (urban), and 0.1036 points (rural).