The Rate of Returns to Education: The Case of Indonesia

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Arezia Magdalyn

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Members of the Examining Committee:

Prof. Dr. Peter van Bergeijk (Supervisor)
Prof. Dr. Arjun Bedi (Reader)

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Inquiries:

Postal address:

Institute of Social Studies
P.O. Box 29776
2502 LT The Hague
The Netherlands

Location:

Kortenaerkade 12
2518 AX The Hague
The Netherlands

Telephone: +31 70 426 0460
Fax: +31 70 426 0799

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List of Acronyms

NFLS	The National Labor Force Survey
Sakernas	Survei Tenaga Kerja Nasional (The National Labor Force Survey)
GDP	Gross Domestic Products
Susenas	Survei Sosial Ekonomi Nasional (National Socio-Economic Survey)
Kemendiknas	Kementrian Pendidikan Nasional (The ministry of National Education)
Kemenag	Kementrian Agama (The Ministry of Religious Affairs)
PJP II	Pembangunan Jangka Panjang II (Second Twenty-Five-year Long-term Development Plan)
INEGI	The National Institute of Statistics and Geography
IFLS	Indonesia Family Live Survey
ILO	International Labor Organization
OLS	Ordinary Least Square

Abstract

This research paper objective is to analyze the rate of returns to education in Indonesia using Mincer model. It describes the statistical relationship among market earnings, duration of education, experiences, and quadratic of experiences. In the analysis, we use primary data from the National Labor Force Survey (*Sakernas*) data in 2012. The National Labor Force Survey (NLFS) covers all provinces of Indonesia (33 provinces), 206.100 numbers of household, and 726.044 people of labor individual information.

The analysis is conducted by seeing the effect of difference sex, regions, marital status, and industrial classification. The result indicates that there is an annual increase for 7,7868 percent in earnings due to an extra year of duration of education for individual worker. Moreover, the result indicates that the rate of returns to education for female is higher than male which is showed by increases for 8,96 percent and 7,3526 percent to the rate of returns to education for male and female respectively due to an additional year of schooling.

Moreover, the rate of returns to education for urban areas is higher than rural areas. It is showed by an additional year of schooling is associated with an annual 8,5175 percent, and 6,3995 percent increases in salaries for urban and rural respectively. DKI Jakarta as urban areas and capital city of Indonesia give positive value to earnings. An extra year of schooling in DKI Jakarta increase 11,3734 percent returns to education for individual worker who work in DKI Jakarta. Meanwhile, married man and married woman also have higher the rate of returns to education compare to single man and single woman. The differences are 2,5544 percent and 3,5168 percent higher for married man and married woman.

Furthermore, there are three main industrial sectors which have highest rate of returns to education. Those industrial sectors are industrial 2 (Mining and Quarrying), industrial 3 (Manufacturing Industry), and industrial 8 (Financing, Insurance, Real Estate, and Business Services). An extra year of schooling is associated with 10,31 percent, 9,98 percent, and 11,60 percent increase to the rate of returns to education for industrial 2, industrial 3, and industrial 8 respectively.

Relevance to Development Studies

The advantages of education can be achieved by seeing the capability of worker to understand and adapt new technology which related to the higher level of education. The higher levels of schooling of workers give effects to an upturn in ability and skills of workers. Higher education will increase capability which has an impact to economic growth. In addition, the increased of human capital is associated with innovation and creation to the new technology. It will create increases productivity due to more skilled worker, and it will also reflect to higher wages. Regarding to the large numbers of labor force with educational attainment below senior high school in Indonesia. Indonesia government has to give extra efforts to higher educational level. The quality of higher educational level may help worker to improve new technology and increase the contribution to the economic development.

Keywords

Indonesia, Investment, Human capital, Mincer Model, Rate of Returns to Education, Earnings.

Chapter 1

Introduction

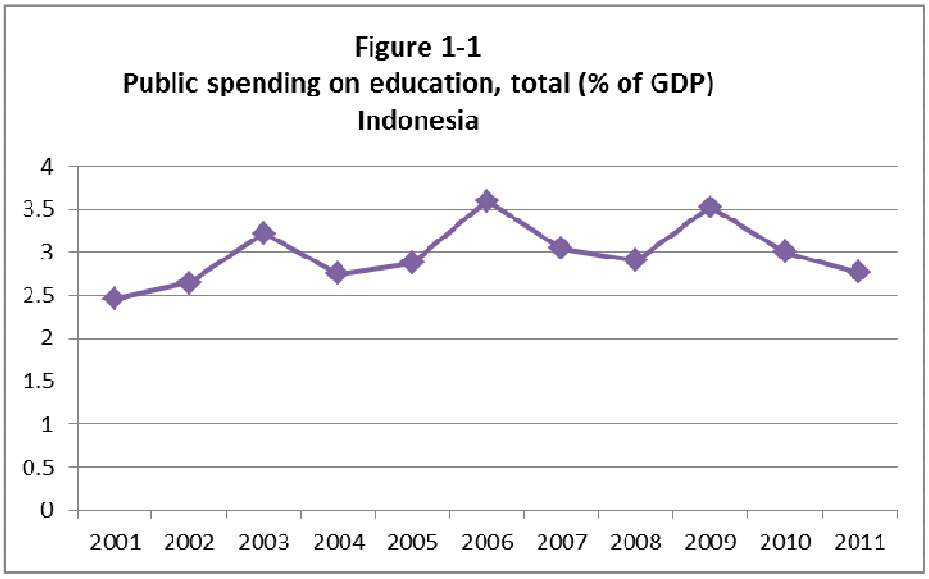
1.1 Background

Education has been considered as a key determinant of economic growth since the introduction of Solow's (1956) growth model. Nelson and Phelps (1966) made the link explicit in what they termed "investment in humans", workers needed education in order to utilize new technologies (the development of which is considered exogenous). In addition education also has a direct positive effect on economic development, economic growth, individual ability (potential) and his or her productivity (Kim and Mohtadi, 1992).

In the same way, the higher level of education of workers reflects to an upturn in capability and skills of workers. Then, the increase of capability due to higher education has an impact to economic growth. It means that capability can increase productivity because higher level of capability makes workers more capable in applying advanced technology and techniques in production. Moreover, there are other indirect linkage between education and economic growth that can be explained as follow:

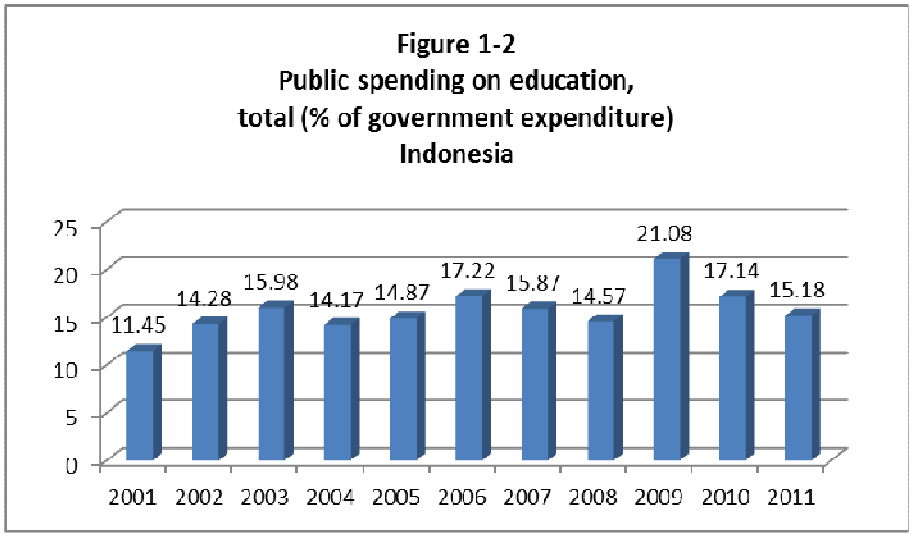
> "Education – on the micro level - could help people to become a 'better' human being, forming strong and stable neighbourhoods and for a conducive and enabling environment for growth to occur and to help overcome poverty." (Bayhaqi 2006:55)

Accordingly, allocate more in education expenditure will increase welfare for the poor society in Indonesia (Figure 1-1 and Figure 1-2). It is related to the fact that labor capabilities measured by the quality of education level. People who have knowledge and skill in technology reflect to accelerate economic growth in Indonesia (Sarasati, 2012). Further, the educational level of workers in Indonesia might help to develop new technology and also to increase the contribution to the economic growth.



Source: http://data.worldbank.org/indicator, accessed 18/07/2013, figure by the author

As a result, the government of Indonesia allocates 20% of government spending to education. Based on the fourth amendment after 2002 to Indonesia's Constitution have need of central and regional governments to distribute at least 20% of their budgetary expenditure to education. Moreover, as obligation, every citizen in Indonesia has to complete nine years of compulsory education. It contains of six years in elementary level and three years in secondary level.



Source: http://data.worldbank.org/indicator, accessed 18/07/2013, figured by the author

However, in Indonesia, equality in education especially to higher education has become a discussed issue. It is due to several reasons. First, there is a common opinion that higher education is a public good. It means that government has an important role in higher education. Meanwhile, the economic advantages of higher education mostly go to individual rather than to the general public. The data survey from statistics Indonesia in 2011 indicated that there was a big deal of inequality in higher education participation. It showed that 5.8 million people who enrolled higher education, there was 4,4 % the proportion of quintile one or the 20 percent of poorest people of the population whereas the proportion of quintile five or the 20 percent of richest people of the population was 43,6 % regarding to the National Socio-Economic Survey (*Susenas*) Statistics Indonesia 2011. Secondly, majority higher education is controlled by socio-economic groups. It is because there is assumption that the role of higher education is to teach forthcoming elite groups. This reason reflects to public opinion that former student of higher education bring high social status. Thirdly, there is expectation of graduated student of higher education in job market who are expected to have well-paid jobs in the formal sector. It gives public opinion that these participants are better off than members in the informal sector. Therefore, regarding to equality debated issue in higher education; there is a strong political aspiration in order to create chances in higher education level for all different groups in society (Wicaksono and Friawan 2011).

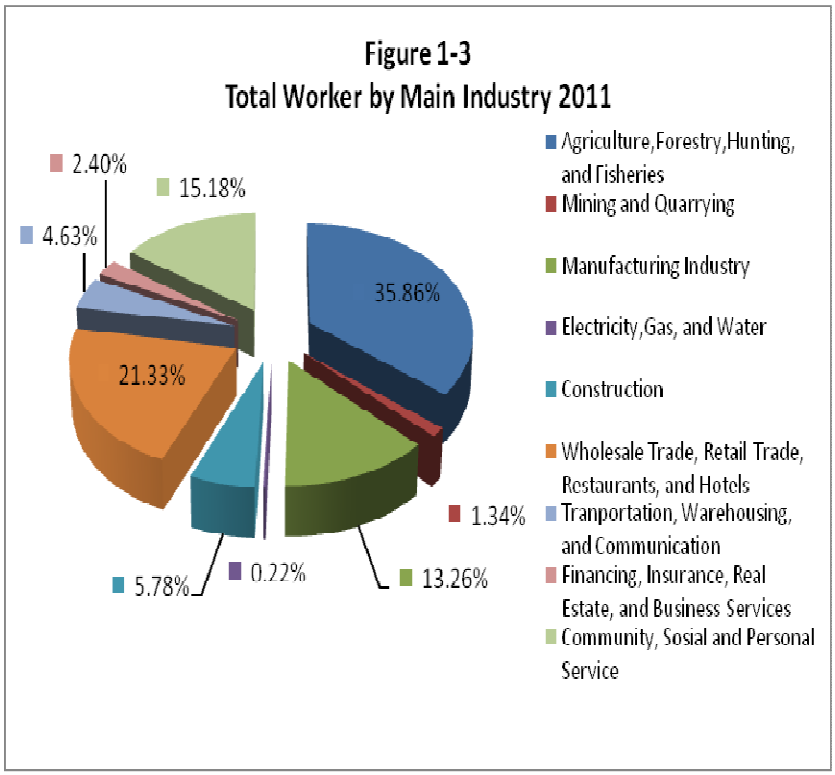
Regarding to Akguc (2010), there is possibility in economy-wide externalities implicit by the investment in human capital especially in the form of educational achievement. It means that the returns to education tend to increase equally to the increase of level educational attainment (Purnastuti et al, 2013). Furthermore, the features of an investment which is showed by successive stages of education related to the student's future receiving power. This is acknowledged by the students and their families especially their parents, and result in as one main motivation for attaining higher level of education. In other words, education has an effect on income or salary. It gives impacts on an individual's wages path over period. The differences in personal wages are correlated to differences in educational achievements, so higher private returns on a higher level of education will encourage people in order to spend more in education achievements (Harberger and Gullermo-Peon, 2012).

Therefore, the benefits of higher education level are measured by the extra wages of higher level of education graduates in competition with lower level of education graduates. This research paper uses data from the National Labor Force Survey (*Sakernas*) from Statistics Indonesia to estimate the rate of returns to education in Indonesia. It can explore individual characteristics like duration of school, age, educational attainment, and experience which have an impact on individual salary in a standard Mincer model.

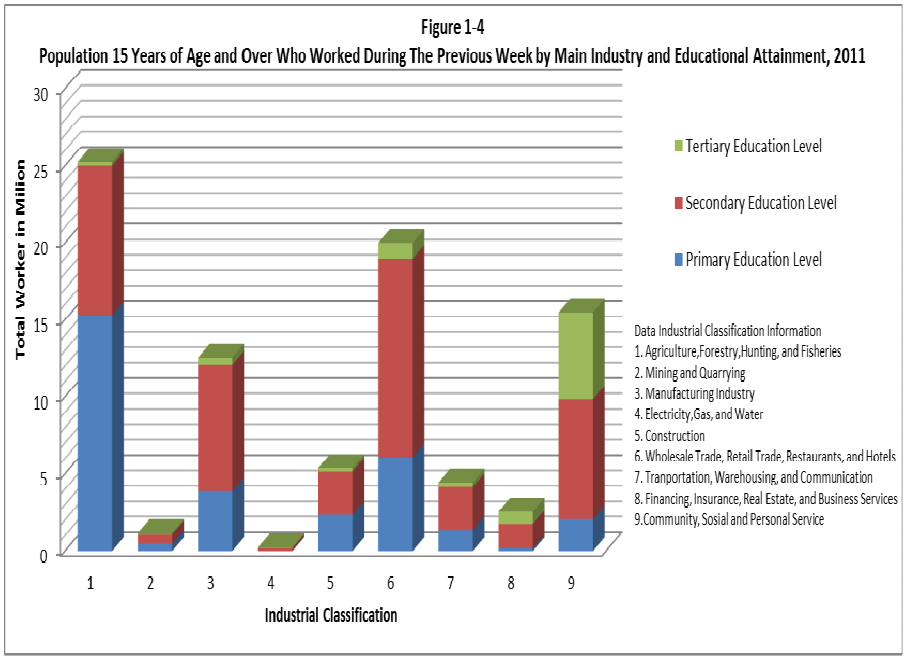
1.2 Problem Statement and Justification

In term of productivity, the importance of education can be recognized by seeing that the ability of worker in order to understand new technology or to adapt new instructions which is determined by the level of education. It can be seen that, higher education level is related to the abilities that required by the job market. Therefore, the increased of human capital related to innovation can accelerate technological catch-up. It also can increase science knowledge and innovation distribution. Productivity will increase regarding to more skilled workers, it also reflects to higher salaries (Montanini, 2013).

In Indonesia, the low quality of labor force is showed by the small number of workers in the formal sectors (Figure 1-3) and also the large numbers of labor force with educational achievement below senior high school (Figure 1-4). Regarding to equality discussed issue in higher education in Indonesia, there is a question arises related to rate of returns to education because individual is hoping to get more returns due to higher education level achievement.



Source: Statistical Yearbook of Indonesia 2012, Author illustrations



Source: Statistical Yearbook of Indonesia 2012, Author illustrations

In view of this, the Mincer model indicates that the correlation between market wages, education, and experience of employment in a country. It shows that time spent in school is the key of determinant of wages. Therefore, data related to years of schooling can be used to estimate the returns to education in countries even with very dissimilar educational systems. This assumption indicates that the choices of schooling as one of forms investments in the long term. It means that worker who attended school longer or graduated from higher education level might achieve other features that would lead worker to earn higher salary regardless of level of educational attainment (Krueger and Lindahl, 2000).

1.3 Research Questions

By considering the background that has been described above, it can be formulated main research question to be studied, which is:

- Is higher level of educational attainment give more rate of returns to education than lower level of educational attainment in Indonesia?

Sub-research questions are:

- How many the rate of return on individual investments to education in Indonesia?
- What is the difference of the rate of return to education between male and female in Indonesia?
- What is the difference of the rate of return to education between urban and rural in Indonesia?
- What is the difference of the rate of return to education between single and married in Indonesia?
- What is the difference of the rate of return to education among

industrial classification in Indonesia?

- Is DKI Jakarta as the capital city of Indonesia gives significant contribution to the rate of return to education?

1.4 Research Objectives

The improvement of access and quality of education can increase society welfare through significant increase in income or salary. Investment in human capital development in Indonesia is lower than required. The overall educational attainment of Indonesian workers has improved remarkably in recent years. However, Indonesia still faces a challenge to increase workers skill through higher level of educational attainment. It means that the struggles in order to improve education level quality, accessible, and labor skills in Indonesia to get higher the rate of return to education are considerable needed.

Therefore, the objectives of this research paper involve the following areas which are: firstly, the main objective is to estimate and compare the rate of returns between higher and lower level of educational attainment. Secondly, this research paper purpose is to observe and analyze the rate of returns to education related to the level of educational attainment. Thirdly, the other goal is to analyze the discrimination of salary between male and female to the rate of returns to education. Next, this research objective is also to observe the rate of return to schooling regarding to area which are rural and urban. Then, the research purpose is to analyze the difference of the rate of schooling between single and married. Sixthly, this research goal is to estimate the effects of industrial classification in Indonesia to the rate of return to education. Lastly, It is to prove that DKI Jakarta as capital city of Indonesia gives big contribution to the rate of return to schooling.

1.5 Hypothesis

The main hypothesis of this research paper is based on theory that from mincer wage equation, the experience value variable will be positive. On the other hand, the quadratic of the experience value variable will be negative. Secondly, the higher level of educational attainment of individual from the value of duration of education will reflect to the higher rate of returns to education. In other words, the investment in education is one of forms investments in the long term that will give more advantages (Krueger and Lindahl, 2000). In term of gender, the hypothesis is female has lower wages rather than male or in other words there is discrimination wages between male and female (Deolalikar, 1993). The returns to education hypothesis regarding to area between rural and urban indicated that financial earnings in rural area have been lower rather than in urban areas in Indonesia (Speare and Harris, 1986). Moreover, the hypothesis that related to marital status indicated that married males have more wages rather than males who never marry or single (Gray, 1997). Specifically, being married for male shows positively effects on wage, contrary for female who shows negatively because female spends more time to their responsibilities for family (Purnastuti, et al 2011). In term of, industrial classification in Indonesia, the hypothesis indicated that the highest

wages are earned by worker who worked in high paying sectors (Pirmana, 2006).

1.6 Practical Problems in Carrying Out the Research

There are several problems when we obtain the National Labor Force Survey (*Sakernas*) data in 2012. The data is cross section data therefore it only gives information at one point. In addition, the total number of respondent is limited. In a standard Mincer model setting, there is also problem related to the earnings data from the National Labor Force Survey (NFLS) which only available for salaried workers. It is not cover the self-employed and household workers which included in employment categories in Indonesia (Comola and Mello, 2010). Moreover, we only use two types marital status in dummy variable which are single and married. On the other hand, in individual of NFLS data there are four types of marital status which are single, married, widowed, and divorced.

1.7 Organization

This research paper is organized as follows: In chapter 1, I briefly elaborate the background of the research paper which contains the importance of the role of education in Indonesia especially in higher education related to rate of returns to education. Moreover, chapter 1 also discusses the research questions, the objectives of research paper, hypothesis, problem statement and justification, practical problems in carrying out the research paper, and lastly the organization of the research paper. Then, in chapter 2, I explain general overview of education in Indonesia. Firstly, I elaborate types of education in Indonesia. Next, I explain the role of education and conclusion of education overview. In chapter 3 is review of literature. It contains the description of education as human capital investment, Mincer wage equation explanation, the summary of empirical literature review, and conclusion. Next, Chapter 4 is data and methodology. I explain briefly the data, description, and Mincer model. In chapter 5, I explain analysis and result of the research paper. Finally, in chapter 6, I elaborate briefly the conclusion of the research paper and policy relevance to the Rate of Returns to Education in Indonesia.

Chapter 2

General Overview of Education in Indonesia

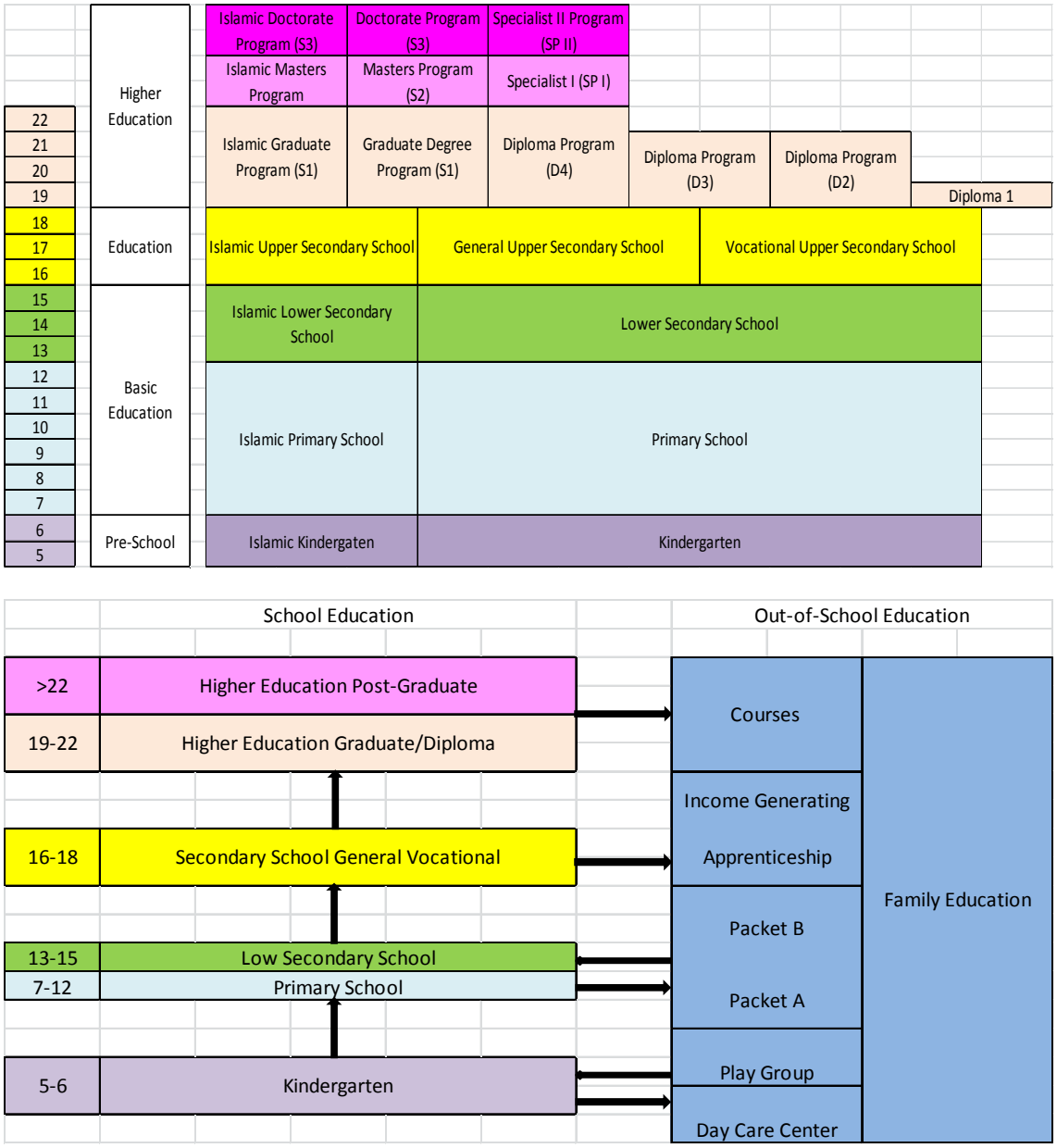
2.1 Types of Education

Education is a vital determinant factor of earning in market of economics. It means that the higher level of educational of achievement in individual, result in the higher expected salary of individual and the steeper of increase in earning capacity over time (Purnastuti et al, 2011). In Indonesia, there are two types of major parts in education which are formal and informal. Further, formal education is elaborated into three parts, which are primary, secondary, and tertiary education level. As obligation, every citizen in Indonesia has to complete nine years of compulsory education. It contains of six years in elementary level and three years in secondary level.

There are two types of education in Indonesia which are formal and informal. Formal means education occurs in school whereas informal school means out-of-school education. Education in Indonesia is below the responsibility of the ministry of National Education or in other words Kementrian Pendidikan Nasional (Kemendiknas) and the Ministry of Religious Affairs or in other words Kementrian Agama (Kemenag). Based on the Indonesia Law No. 2 1989 about school system in Indonesia, the secular schools whether private or public schools are controlled by the Ministry of Education whereas the Islamic schools are controlled by the Ministry of Religion Affairs.

On the other hand, the informal school or out-of-school contain of packets A and B for elementary level, courses, playgroup, daycare center and others. The learning groups or packets A and B are controlled by the Indonesia Government. Packet A is responsible for the learners to complete primary school educations, whereas packet B is responsible for students to achieve lower secondary education. In addition, for informal school such as playgroups and childcare are controlled by the Ministry of Social Affairs and the Ministry of Nation Education. It can be clearly seen as Figure 2-1 and bellow:

Figure 2-1. School System in Indonesia



Education System in Indonesia, Law No. 2 1989
Source: http://www.indonesianembassy.org.uk/education/education_system1.html , accessed 18/07/2013

Education system in Indonesia according to Law No. 2 1989 supports the basic of one national education system. It means that the national education system in Indonesia can be applied in a whole and completely as integrated method. Every citizen in Indonesia has a right to achieve education through formal or informal education system until the level that suitable for their capability. The national education system based on Law No. 2 1989 provides the widest potential range of learning chances to every Indonesia citizen from any different gender or background. Therefore, in the Law all channels, types, level, units of education system are defined including the implementation, the purposes, and standart output of all levels and types of education in Indonesia.

Moreover, regarding to Law No. 2 1989 and Government Regulation No. 28 1990, the obligation of basic education in Indonesia is general education which covers a duration of nine years school. It is divided into six years in primary school and three years in junior high school or lower secondary school. In other words, the basic education level is six years of duration of education program that divided into two divisions, which are primary school and general primary school. After, six year of education program, the basic education level continue with three years education program. It is known as general lower secondary school or lower secondary school. The purpose of this basic education is to support resources in the capabilities of learning contributors in order to improve their quality of life as citizens and to prepare them to enter senior high school education (secondary education) or equivalent level of education.

2.2 The Objective and Role of Education

Regarding to Law No. 2 1989, the national education system in Indonesia divided into two main objectives. Firstly, it is to create a high quality human being and independent citizen who their values based on state ideology or *Pancasila*. Ideology state of Indonesia (*Pancasila*) divided into five principles. First is belief in one God. Second is just and civilized of humanity. Third is unity of Indonesia. Next is populist that led by wisdom of deliberation among representatives of the people. Last is social justice for all.

Secondly, the national education objective is to support the Indonesian people and state. In other words, it is to support broader context of national improvement and social. The purpose of education is to maintain and preserve Indonesia's background. In specific term, education purpose is to create the knowledge, abilities, and logical progress. These objectives are important to develop nation to the next century. National education has obligation to increase the quality of life of the nation and to improve Indonesian people entirely such as in morally, physically, intellectually, socially, and spiritually that based on ideology state of Indonesia.

Moreover, the education system supports citizens regardless of their gender, religion, social, culture, ethnic and economic background to create opportunities in learning. The main strategies of national education system are

the development of opportunity, effectiveness, quality, and applicability to improvement needs.

Indonesia has entered the Second Twenty-Five-year Long-term Development Plan or *Pembangunan Jangka Panjang II* (PJP II). It is divided into two terms which are 1994-1995 to 2018-2019. The importance of PJP II is on the improvement of human capital through education in order to sustain the economic development in Indonesia. The top priorities of PJP II to react to the challenges of modernity can be explained as follow:

1. The accomplishment of the nine year basic national education program. It contains extra three years of schooling at secondary level of education for students aged 12 to 15 years old. In other words, it contains six years of primary education and three years of lower secondary education. The curriculum in lower secondary school is extended with skills training in order to support students who are not capable to continue to the senior secondary school. It needs the role of the citizens and parents to support basic education for every child in Indonesia.
2. Developed justice and quality of education opportunities for all stages and types of education system in Indonesia. It must include educational resources to support process of education. For example, the adequate number and quality of lecturers, staff of education, educational books, school facilities, equipment, infrastructure, and improvement of curriculum.
3. The implementation of policy which organizes the development of industry and business world has to be related to education. It takes several steps, first is planning, next is implementation then assessment, and lastly is certificate of education completion and vocational training that relate to economic needs. The purpose of the implementation of policy is to provide a condition where graduated students are reactive to the skilled labor force and capability. It is related to the number of distribution of quality worker. It also needs the development and advance of vocational and general education in order to provide advance technology in production and human capital.
4. Developed the quality of higher education that provides training and study in order to increase capability to advance technology and science. It means that education has to support trained and expert worker in accordance with requirements of the industrial sectors. Educational system is supported by following criteria: cover competent curriculum in general and vocational secondary school, professionalism in higher education, provide qualified courses and training.
5. Higher education quality by created a condition that helpful for academic students and discussion to guarantee an active technical student. It also encourage of research in tertiary education system that would be advantage for the community. Education Institutional development has to include accreditation system both for private and public institute. Moreover, it should be independent institution that free from government intervention in organization and subsidy.

6. The improvement of a monitoring and evaluation method in quality of education. The educational quality should be continuously widespread, consistent, and valid. In addition, the monitoring system has to be improved and distributed for utilization.
7. The effectiveness in educational organization. It is influenced by variation factors like professionalism in organization system, faithfulness, discipline, capability, working ethics and efficiency cost.

In term of Higher education, it has role for sustainability of economic growth. According to Montanini (2013), the vital function of higher education in term of economy has been the purpose of empirical studies that succeeded in presenting a strong correlation between higher education and economic growth. It is correlated to human capital improvement and technology distribution. Moreover, tertiary education as higher education is the crucial source of knowledge and innovation. It is related to the ability of educational institutions to be highly reactive to recognize strategic needs and to improve important human abilities.

Moreover, university as higher education level is able to recognize the types of abilities that required by the job market. Meanwhile, the increased of human capital related to innovation can accelerate technological catch-up. It also can increase science knowledge and innovation distribution. Productivity will increase regarding to more skilled workers, it also reflects to higher salaries. In private sectors, a higher salary reflects to better quality of life such as better insurance of health care, and increasing the capability of saving and investing so creating consumption growth (Montanini, 2013).

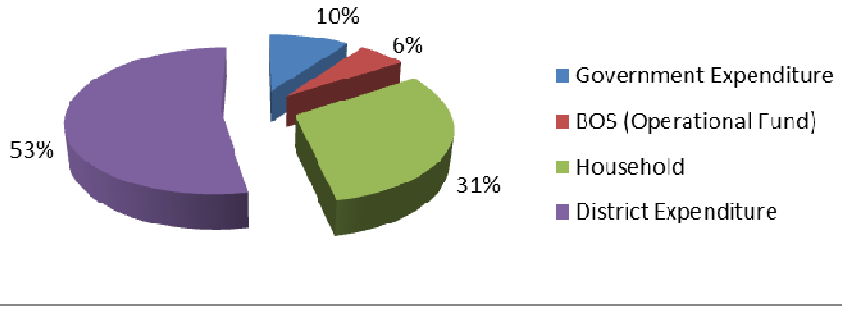
2.3 Government Spending to Education

According to Tobing (2011), the role of improvement of human resources through education is very essential. Indonesia has to make sure better directed education improvement policies, the improvement should be focused. Therefore, the Indonesia government distributes 20% of government expenditure to education based on the fourth amendment after 2002 to Indonesia's Constitution. The fourth amendment regulates central and regional government in order to spend at least 20% of their budgetary spending to education. It has supported a substantial rise in education resources. It is shown that Indonesia has made big contribution to education by allocating 20% of government budget to education. It is supported by the argument of Saraswati (2012) from her International Journal as follow:

> "Indonesia has tried to improve welfare for the poor society by allocating more education spending. It is due to the fact that, quality of education will impact for labour force quality, in which people have science and skill in technology that cause and accelerate economic growth." (Saraswati 2012:427)

Moreover, expenditure of education is allocated by two sources in Indonesia which are public spending and private expenditure. Public expenditure means education expenditure from government and has role to cover operational cost especially in primary and secondary school whereas private expenditure is from household (Sarasaswati, 2012). Expenditure of Education in Indonesia is dominated by public expenditure rather than private expenditure (Figure 2-2). It is supported by World Bank Indonesia data that can be clearly seen as follow:

Figure 2-2
Source of Education Spending in Indonesia



Source: World Bank Data

The biggest result of Indonesia's government spending on education is the access of schooling. It is related to the impressive increases in school participation rate in Indonesia over the last twelve years (Tabel 2-1). However, these increase only focused on the basic education. The access of primary school and junior high school or secondary level show remarkable participation rate. On the other hand, the access to senior high school and especially at tertiary education or higher level of education is increase on average, or still remains particularly low for students.

Table 2-1 Formal Education Participation 2000-2012

Formal Education Participation	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
School Participation Rate , Age 7-12	95.50	95.61	96.10	96.42	96.77	97.14	97.39	97.60	97.83	97.95	97.97	97.49	97.92
School Participation Rate , Age 13-15	79.58	79.35	79.21	81.01	83.49	84.02	84.08	84.26	84.41	85.43	86.11	87.58	89.62
School Participation Rate , Age 16-18	51.17	49.18	49.76	50.97	53.48	53.86	53.92	54.61	54.70	55.05	55.83	57.57	61.24
School Participation Rate , Age 19-24	12.31	11.81	11.62	11.71	12.07	12.23	11.38	12.20	12.43	12.66	13.67	13.91	16.02

Source: http://bps.go.id/ , accessed 18/07/2013

2.4 Conclusion of Education Overview

Education system in Indonesia is based on Law No. 2 1989. There are two types of education system which are formal and informal. Formal means education happens in school whereas informal school means happens in out-of-school education. As obligation, every person in Indonesia has to complete nine years of compulsory basic of education. It covers of six years in primary education level and three years in secondary level. Moreover, there are two objectives of national education system in Indonesia regarding to Law No.

2 1989. Firstly, it is to support human being value and independent citizen who based on state ideology (*Pancasila*). Secondly, it is to encourage broader context of national development and social term. In other words, education objective is to create the abilities, knowledge, and logical progress.

Indonesia has to make sure better directed education improvement policies, or the development of policies should be focused. In order to achieve the role of development of human resources through education, Indonesia government allocates 20% of government spending to education based on the fourth amendment after 2002 to Indonesia's Constitution. This constitution regulates central and regional government to distribute 20% of their budgetary spending to education. It means that Indonesia has made big efforts to education by distributing 20% of government spending to education. The great result of this spending is the impressive increases in school participation rate in Indonesia over the last decades. On the other hand, these impressive increases only focused on basic national education. In other words, the access of primary and junior secondary school show significant participation rate whereas senior secondary school and especially for higher education level show increase on average.

Chapter 3

Review of Literature

3.1 Education as Human Capital Investment

The returns to education has becomes relevant issue for developing countries. It has confirmed that better-educated people are receiving higher wages rather than less-educated people. They also have better occupations and higher status compare to people in low educational achievement. Additionally, the higher educational level attainment of workers might help to develop new technology in order to increase total factor productivity. It is supported by argument as follow:

> "The significance of education can be recognized by considering that worker's ability to absorb new instructions or to understand advanced technology is determined by their education." (Soesilowati and Salim 2009:69)

It means that formal education has strong correlation to human capital development. Human capital means the ability of a worker to supply productive labor to an employer (wage employment) or self-employment. The higher level of their education achievement, the more responsive worker will be. It means that individual capability to create and produce is more potential for worker who achieves higher level of education attainment.

Furthermore, education as human capital investment (argued by Schultz, 1961; Becker, 1975, [quoted by Kim and Mohtadi, 1992]) is the distribution of human resources efficiently in term of return on investment which is unresponsive to other types of investment. Education has role to improve individual's potential ability to increase productivity. As a result, better-educated workers will get more returns from education in developing country like Indonesia. It means that more resources should be dedicated to the educational sector. Therefore, the quality, access, facilities and infrastructure of higher level of education can be achieved.

On the other hand, regarding to Harmon et al (2002), investing in human capital can also be risky. Firstly, it is because there is difficult to forecast estimated wages and salaries from different individuals. Secondly, individuals cannot predict whether or not they will be successful in their educational attainment. Therefore, the returns would still seem to differ and randomly, even if each worker were to obtain their expected returns to education that predicted unconditional certainty.

3.2 Mincer Wage Equation

Development economics studies have trusted on wage regressions on years of schooling achieved from data of income in order to support arguments for improved education investment as an effective improvement policy along with to notify studies of the determinants of economic growth. The most popular wage model used in studies of wage determination is the "Mincer" wage model. It supported by the argument from Krueger and Lindahl (2000) in term of elaborating the Mincer wage model equation:

> "Mincer (1974) showed that if the only cost of attending school an additional year is the opportunity cost of students' time, and if the proportional increase in earnings caused by this additional schooling is constant over the lifetime, then the log of earnings would be linearly related to individuals' years of schooling, and the slope of this relationship could be interpreted as the rate of return to investment in schooling". (Krueger and Lindahl 2000:4)

Moreover, the mincer model indicates that the average level of educational attainment in one country would be the main determinant of income growth. According to Heckman et al (2003), Mincer model of earnings is the foundation for economic studies in developing countries because of several main reasons. Firstly, it is the background used to calculate returns to education. Secondly, Mincer model is the basis to estimate returns to education quality. Next, it is the framework to estimate the effect of work experience on male and female salary gaps. Lastly, it has been calculated with data from many countries and different time periods.

However, according to Harberger and Guillermo-Peon (2012), it carried about further improve the educational hierarchy to identify the income difference. Each individual must forgo income that they or else could have achieved. It also frequently ends up acquiring extra cash expenditures. It means that the pattern of extra cash expenditures indicate to extra profits describes an investment profile for each sequential step. For that reason, Harberger and Guilermo-Peon (2012) made basic assumptions as follow:

a) Each extra year of schooling decreases the duration of working and earning life by precisely one year for the same retirement age for all employees.
b) Skipped salaries while schooling or in other words the accurate investment expenditures are time expenditures.
c) For each of the profiles are produce by the data from a national data.

Their studies focused on the age of earnings profiles relate to adjacent levels of schooling. It means that the comparison between level of education such as

high school and university, the costs of university are estimated as the earnings that graduated student from high school achieve during the years that the university students are studying.

3.3 Empirical Literature Review

There are number of development studies that used Mincer model to determine the level of individual earnings. Comola and Mello (2011) used household survey data in order to estimate the determinants of incomes in Indonesia. The result from their study showed that incomes increase regarding to educational attainment and age, and there was differences between men and women salaries. It indicated that women are salaried less than men.

Moreover, their study in 2010, used household survey (*Sakernas*) data in 2004 to estimate the determinants of earnings in Indonesia. The data contains 75.371 households or 237.920 individuals were measured and available only for salaried workers. The result indicates that educational achievement seems to be a dominant forecaster of labor-market outcomes. The members of better-educated households suggest not to accepting low quality non-salaried works (Comola and Mello, 2011).

Harberger and Guillermo-Peon (2012) did a study on the relationship between education and incomes in Mexico. The study compares the benefits of higher education to lower level education or high school graduated. They used data from ENOE, a survey that published quarterly by the National Institute of Statistics and Geography or INEGI in Mexico for second quarter of 2010. The result showed strong support for net present value and internal rates of return to investment regarding to sequential steps up the educational hierarchy.

In addition, Purnastuti (2012) used data from Indonesia Family Live Survey (IFLS) wave IV to estimate the private rates of return to education in Indonesia. The study used ordinary least squares and Mincer model. The result showed that one year of schooling rises an individual's wages by 5,66 percent. Further, study showed there was a gender asymmetry in private economics returns to education between men and women. It indicated returns to women's education being statistically significantly higher than men's education.

Akguc (2010), study on cross-country panel estimations of the returns to the stages of education in primary, secondary, and tertiary using production function in the Mincer model way in order to achieve log-linear equation. The data used dataset on education, output, and capital stock that offered by Cohen and Soto in 2007. The result indicated that the fixed effects estimates income significant and positively retained effects for primary, secondary, and tertiary of schooling on output per worker. It also showed that tertiary education tends to be the most dominant type of schooling rather than primary and secondary schooling. It supported by significant effect on aggregate wage per capita for the range of 11.2 % to 13.2 %.

3.4 Conclusion of Empirical Literature Review

From empirical result, the education has strong correlation with the educational attainment. Regarding to Comola and Mello (2011), the increase of incomes correlated to educational achievement and age. In addition, there was also discrimination of salary between male and female. It indicated that female salary is less than male salary. Moreover, Harberger and Guillermo-Peon (2012) did a research on the relationship between incomes and education in Mexico, the result indicated that there was strong correlation for net present value and internal rates of return to education to sequential steps up the educational level.

Furthermore, Purnastuti (2012) did a study to estimate the private returns to schooling in Indonesia by using Indonesia Family Live Survey (IFLS) data wave IV. The study indicated that returns to female's education is being statically significant higher than return to male' education. In term of educational level, there was a study by Akguc (2010) on cross-country panel estimations of the returns to the stages of education. It indicated that higher education tends to be the most significant type of education rather than primary and secondary level of education. It also showed significant effect on aggregate salary per capita.

Chapter 4

Data and Methodology

4.1 Data

In this research, we use primary data from the National Labor Force Survey (*Sakernas*) data in 2012. The National Labor Force Survey (NLFS) covers all provinces of Indonesia (33 provinces). Total numbers of household samples in NLFS were 206.100 with a response rate of 97.57 percent. In addition, total respondents of NFLS were 726.044 people who cover labor individual information.

The characteristics of NFLS are employment, underemployment, unemployment, and working age people who are in schools, doing housekeeping, and others, except personal doings. Data collection of the NFLS August 2012 used questionnaire for labor personal information which is SAK12-AK. It is aimed for interviewing people about information of the economically active and not economically active people.

The concepts of labor force in NFLS are the same with International Labor Organization (ILO). The population is divided into two categories which are a working age group and a non working age group. There are two major components in the working age group related to their current activities which are in the labor force and not in the labor force. In NFLS, the central information collected is data on individual household members who covering people aged 10 years and older.

Data on individual information in NFLS covers member of household information such as name relation to the household, sex, age, marital status, and education achievement. Then, activities from previous week like worked, temporary not working, looking for work, attending school, doing housekeeping and others. Next, for people who were working give information about place of work or industry, employment status, total hours of work during the previous week, and total income has received. On the other hand, people who were looking for job give information about the duration of looking for work, how they were looking for work, and type of jobs they were looking for whether full or part-time job.

This research only focused on individual household members who worked during previous week and has information about theirs salary. It is covering people aged 15 until 65 years old. The total respondents at those criteria are 186.271 people. The Mincer model estimates the returns of education for individual in Indonesia.

4.2 Definition

Salary
Salary is the compensation paid to a worker from employer, which are divided into payment in cash and or in goods. This research use payment in cash or money in Rupiah.

Duration of Education
The duration of Education is the duration of the highest educational level completed by an individual. In NFLS, the educational attainment data is verified by the receipt of a diploma or certificate. This research uses range for every level of educational attainment as follow:

Table 4-1
Duration of Education

Educational Attainment	Duration of education (years)
No Schooling	0
Did not Complete/Have not yet Completed Primary School	3
Primary School	6
Packet A	6
Junior High School (General)	9
Junior High School (Vocational)	9
Packet B	9
Senior High School (General)	12
Senior High School (Vocational)	12
Packet C	12
Diploma I/II	14
Academy/Diploma III	15
University	17
Master / Phd	20

Note: Packet A, B, and C are the informal school

Experiences
Experience is the length of current main job in years.

Control Variable
Control variable is included in the Mincer model. It divided into sex (male and female), region (urban and rural), marital status (single and married), and industrial classification. Industrial classification divided into nine classifications regarding to Indonesian Standard Industrial Classification in 1990 (table 4-2).

Table 4-2
Industrial Classification

Industrial Classification	Descriptions
Industrial 1	Agriculture, Forestry, Hunting, and Fisheries
Industrial 2	Mining and Quarrying
Industrial 3	Manufacturing Industry
Industrial 4	Electricity,Gas, and Water
Industrial 5	Construction
Industrial 6	Wholesale Trade, Retail Trade, Restaurants, and Hotels
Industrial 7	Transportation, Warehousing, and Communication
Industrial 8	Financing, Insurance, Real Estate, and Business Services
Industrial 9	Community, Social and Personal Service

4.3 Mincer Model

Continuous steps of education has been playing important role to the student's future earning and to be a form of investment. Purnastuti (2012) argue that higher educational achievement individuals accept higher salaries and better jobs of higher status rather than lower educational achievement. In addition, her report paper in Indonesia has proved that Mincer model earnings function discovered the return for an extra year of education is positive and significant to the salary (Purnastuti, 2012).

In this research, we use Mincer model to estimate salary regression. It shows the statistical relationship among market salary, duration of education, and experience. The description of the earnings function used is based on the human capital model elaborated by Mincer in 1974. It showed that employee who joined school longer would earn higher salary regardless of their level of educational attainment. It needs comparisons of earnings through individuals with different levels of educational achievement would estimate the return to education (Krueger and Lindahl, 2000). By following Mincer model, we estimate the return to education by using natural log of individual salary as follow:

$$\ln W_i = \beta_0 + \beta_1 S_i + \beta_2 X_i + \beta_3 X_i^2 + \varepsilon \qquad (4.1)$$

where:

ln Wi	=	natural log of individual salary i
S_i	=	duration of education
X_i	=	experiences (years)
X_i^2	=	quadratic of Xi
ε	=	error term

Regarding to Purnastuti (2011), Mincer model accepts that the forgone earnings are the expenses of schooling and people start to work straightaway after graduated from school. The Mincer model describes the natural logarithm of salary can be showed as a function of duration of education, post schooling employee and its quadratic form. It is supported by her argument as follow:

> "…, this relationship provides a direct measure of the returns to schooling through the coefficient of the years of schooling variable in the earnings regression". (Purnastuti, et al 2011:496)

In order to provide more specific evidence on the returns to education in Indonesia, the basic Mincer equation (4.1) is improved with other variables that might influence salary. The first variable is gender. This variable represents the gender earnings discrimination between male and female. The main reason of this assumption is the roles of males as head of household and females as wife and mother who take care her family. This assumption have resulted discrimination wages where female has lower salary than male. Moreover, according to Deolalikar (1993), they are several reasons why there are gender differences in the returns to education as follow:

> "Gender differences in the returns to schooling may arise for several reasons: differential opportunity costs of schooling for males and females; gender differences in traits, such as manual dexterity, stamina, or strength that are valued by the market; gender specialization in jobs and relative scarcity of one gender; and sex discrimination in the labor market". (Deolalikar 1993:901)

Furthermore, the second variable is region. It is divided by urban and rural areas in Indonesia. The specialization hypothesis in region argues that financial earnings have been smaller in rural rather than in urban areas in Indonesia (Speare and Harris, 1986). There is also assumption that earnings inequality between urban and rural areas because mostly urban salary comes from salary employment and non-farm self-employment which are different from agricultural income in rural areas (Van Cao and Akita, 2008).

Other variable is marital status. In NFLS (*Sakernas*) data there are four marital statuses which are single, married, divorced, and widowed. We only use single and married statuses as variables. This variable represents the difference between married and single marital statuses. For male, the hypothesis is human capital salary equations show that married males have more salary rather than males who never marry. It is because that married male tends to be more productive by giving extra effort or time on labor market activities (Gray, 1997). It is also supported by his argument as follow:

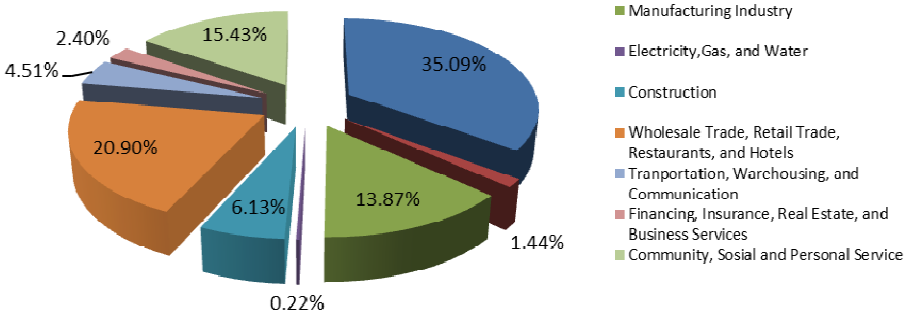
> "The longer a man is married, the more opportunities his wife will have to augment his human capital and the higher should be his marriage wage premium". (Gray 1997:484)

On the other hand, for females, they are tend to have low market wages because married female spends more time to home responsibilities. So, being married for male shows positively effects on salary, contrary for female who shows negatively regarding to their duties as mother and wife and other domestic responsibilities (Purnastuti, et al 2011).

The last variable is industrial classification in Indonesia. Based on Indonesian Standard Industrial Classification in 1990, there are nine industrial classifications. Firstly, there are agriculture, forestry, hunting, and fisheries. Secondly, there are mining and quarrying. Thirdly, there is manufacturing industry. Then, there are electricity, gas, and water. Next, there is construction. Sixthly, there are wholesale trade, retail trade, restaurants, and hotels. Seventhly, there are transportation, warehousing, and communication. Then, there are financing, insurance, real estate, and business services. Lastly, there are communities, social and personal service.

The specialization hypothesis for industrial classification is the highest salaries are earned by people who worked in high paying sectors. It means that they are work in sector like mining and quarrying, and also in financing, insurance, real estate, and business services. Moreover, the industrial sector dummies steadily have a strong significant influence on salary and become another factor that most essential after duration of education in Mincer model (Pirmana, 2006). The distribution of worker by industrial classification (Figure 4.1) can be seen as follow:

Figure 4.1
Population 15 Years of Age and Over Who Worked by Main Industry 2012



Source: Statistics Indonesia, Author illustrations

In this research, return to education in Indonesia use cross-section primary data from the National Labor Force Survey (*Sakernas*) data in 2012. The primary data covers all provinces of Indonesia which is total number 33 provinces. We use Ordinary Least Square (OLS) technique on basic Mincer's log earnings. The estimation of return to education through Mincer model can be improved with other control variables that might influence earnings as follow:

$$\ln Wi = \beta_0 + \beta_1 S_i + \beta_2 X_i + \beta_3 X_i^2 + \beta_4 \text{ sex} + \beta_5 \text{ region} + \varepsilon \qquad (4.2)$$

Where:

ln Wi	=	natural log of individual salary i
Si	=	duration of education
Xi	=	experiences (years)
X_i^2	=	quadratic of Xi
sex	=	variable (dummy) sex
region	=	variable (dummy) region
ε	=	error term

Other control variables are marital status and industrial classification, the estimation of return to education improved can be seen through equation (4.3) and (4.4) as follow:

$$\ln Wi = \beta_0 + \beta_1 S_i + \beta_2 X_i + \beta_3 X_i^2 + \beta_4 \text{ marital\_status} + \varepsilon \qquad (4.3)$$

Where:

ln Wi	=	natural log of individual salary i
Si	=	duration of education
Xi	=	experiences (years)
X_i^2	=	quadratic of Xi
marital_status	=	variable (dummy) marital status
ε	=	error term

$$\ln Wi = \beta_0 + \beta_1 S_i + \beta_2 X_i + \beta_3 X_i^2 + \beta_4 \text{ sex} + \beta_5 \text{ region} + \beta_6 \text{ industrial\_1} + \beta_7 \text{ industrial\_2} + \beta_8 \text{ industrial\_3} + \beta_9 \text{ industrial\_4} + \beta_{10} \text{ industrial\_5} + \beta_{11} \text{ industrial\_6} + \beta_{12} \text{ industrial\_7} + \beta_{13} \text{ industrial\_8} + \varepsilon \qquad (4.4)$$

Where:

ln Wi	=	natural log of individual salary i
Si	=	duration of education
Xi	=	experiences (years)
X_i^2	=	quadratic of Xi
Industrial_1	=	variable (dummy) industrial 1
Industrial_2	=	variable (dummy) industrial 2

Industrial_3	=	variable (dummy) industrial 3
Industrial_4	=	variable (dummy) industrial 4
Industrial_5	=	variable (dummy) industrial 5
Industrial_6	=	variable (dummy) industrial 6
Industrial_7	=	variable (dummy) industrial 7
Industrial_8	=	variable (dummy) industrial 8
ε	=	error term

Regarding to basic Mincer model (4.1), the returns to education in this research is obtained by the first derivative of Mincer model respect to experience variable. It can be clearly seen as follow:

$$\frac{\partial \ln Wi}{\partial Xi} = \beta_2 + 2\beta_3 X_i \quad (4.5)$$

When potential work experience reaches peaks level, the equation is:

$$\beta_2 + 2\beta_3 X_i = 0 \quad (4.6)$$

Equation (4.3) means that the increase in salary related to an extra year of potential worker. In the coefficients on the potential worker experience variable, there is expected sign in squared term and it is showed the concavity curve of the experience on earnings model. The symbol β_2 represents the estimated coefficient on the experience variable and β_3 represents the estimated coefficient on the quadratic experienced variable. Therefore, the interest of the level of experience is predicted at the earning experience peaks level, it can be seen from (4.4) equation (Purnastuti, et al 2011).

Chapter 5

Analysis and Result

5.1 Ordinary Least Square of Standard Mincer Model for Male and Female

Table 5-1 describes the estimation of the rate of returns to education in year 2012 using individual data from National Labor Force Survey (NFLS) was estimated by log earning function and Ordinary Least Square (OLS). The standard Mincer model designed to observe the relationship among duration of education, experience, and individual earnings.

Table 5-1
Standard Mincer Model for Male and Female Variables

	all	male	female
Constant	12.79118***	13.00859***	12.39562***
	[0.005436]	[0.006483]	[0.009115]
	(2353.255)	(2006.467)	(1359.967)
Duration of education	0.077868***	0.073526***	0.0896***
	[0.000442]	[0.000539]	[0.000715]
	(176.2695)	(136.3077)	(125.2411)
Experiences	0.052576***	0.044292***	0.057569***
	[0.000651]	[0.000755]	[0.001154]
	(80.70074)	(58.69235)	(49.86684)
Quadratic of experiences	-0.000985***	-0.000832***	-0.000997***
	[0,00211]	[0.00243]	[0,00375]
	(-46.73625)	(-34.22452)	(-26.59316)
R squared	0.217529	0.197746	0.278526
F-Statistic	14850.78	8602.676	7148.629
Prob(F-statistic)	0.000000	0.000000	0.000000
Observations	186271	124435	61836

Notes: ***, **, * indicate the level of significance at 1%, 5%, and 10% levels respectively
Standard errors are in square bracket
t-Statistics are in parentheses

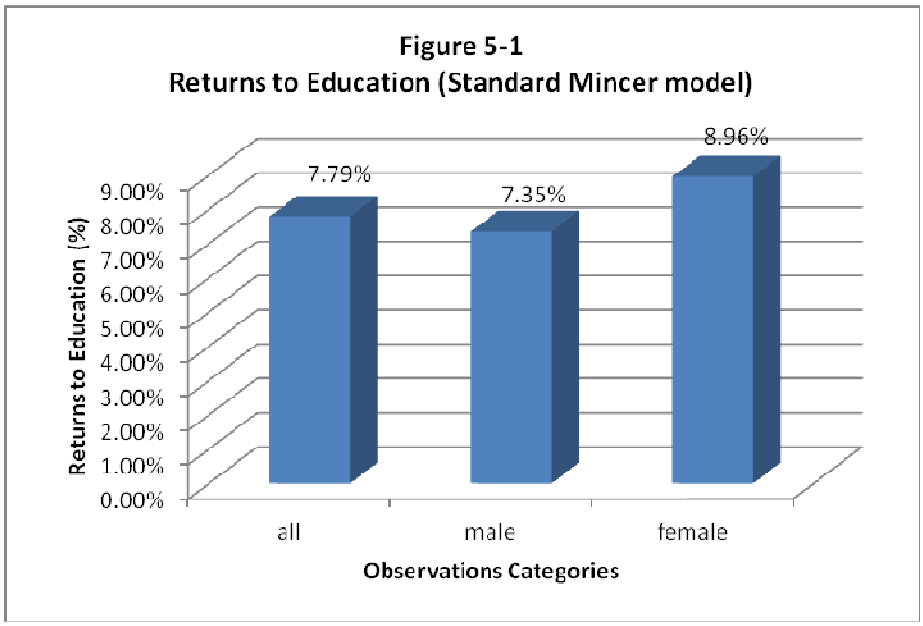
Source: Author's calculation based on NFLS data 2012

The result from table 5-1 indicates that the standard Mincer equation using OLS estimation of the earnings function parameters is assumed education to be exogenous. It means that the education variable is independent of all others reaction values. The econometrics analysis of the rate of returns to education is estimated using the basic Mincer model, as illustrated in previous section (equation 4.1). The natural logarithm of earnings is regressed on duration of education, experiences, and the quadratic of experiences term. The results are showed in table 5-1.

According to table 5-1, R-square for total is 0.217529 which indicates that 21,7529 percent of the variance of the dependent variables in log earnings was explained by the equation of Mincer model. The R-square for male and female are 0.197746 and 0.278526 respectively. It means that 19,7746 percent and 27,8526 of the variance of the dependent variables in log earnings for male and female was explained by the Mincer model.

Moreover, table 5-1 illustrates the OLS coefficients estimated for the male and female separately. The three standard Mincer models regarding to table 5-1 results indicates that an additional year of duration of education is associated with an annual 7,7868 percent, 7,3526 percent, and 8,96 percent increase in earnings for total, male, and female respectively (Figure 5-1).

Figure 5-1
Returns to Education (Standard Mincer model)



Source : Author illustration based on Table 5-1

These estimates of the rate of returns to education are substantially higher than Purnastuti (2012) which indicates that one year of education rises an individual's earnings by 5,66 percent. Her studies using individual data from Indonesia Family Live Survey (IFLS) wave IV. In addition, table 5-1 result

shows agreement with some empirical studies. Regarding to Purnastuti (2012), the estimation of the standard Mincer model indicated that the rate of returns for an extra year of education is positive and significant. It also supported by some empirical studies, for instance: Comola and Mello (2011) in Indonesia, Harberger and Guillermo-Peon (2012) in Mexico, and Akguc (2010) among across countries.

Moreover, study showed there was a gender asymmetry in returns to education between male and female. It showed that the rate of returns to female's education being statistically significantly higher than return to male's education (Purnastuti, 2012). Based on table 5-1, the estimation results indicates that the rate of returns to education female is being significantly higher than male's earnings for 8,96 percent and 7,3526 percent respectively.

Regarding to Purnastuti (2012), the experiences of earnings profiles have concave curve. It means that experiences are rising or positive sign at the first and then falling or negative sign after reaching a given number of years. It is supported by the result of table 5-1, at the first experiences increase earnings associated with additional worker market experience. It showed that results indicates an annual 5,2576 percent, 4,4292 percent, and 5,7569 percent increase in earnings for total, male, and female based on additional worker market experience. However, after a given number of years of experiences, the rate of returns to education is falling. It is supported by negative signs for coefficient of quadratic of experiences which are -0,0985 percent, -0,0832 percent, and -0,0997 percent decrease in earnings for total, male, and female respectively.

Furthermore, table 5-1 presents the three augmented models for total, male, and female separately explain about 21,7529 percent, 19,7746 percent, and 27,8526 percent respectively of the variation in actual earnings.

The summary statistics for the main variables used in this research for all, male, and female are reported in table 5-2. The mean of monthly earnings are 13,844 for total, 13,97 for male workers, and 13,609 for female workers. The standard deviation shows the concentrated data from the mean. The standard deviation of monthly earnings are 87,9871 percent for total, 81,5805 percent for male, and 94,5393 percent for female. The smaller standard deviation means the more concentrated data around the mean. The high result of standard deviation indicates that the data points are spread out more in a big range of values from mean.

Table 5-2
Summary Statistics of Standard Mincer Model for Male and Female Variables

Dependent Variable	All		Male		Female	
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
Monthly earnings	13.844	0.879871	13.97	0.815805	13.609	0.945393

Source: Author's calculation based on NFLS data 2012

5.2 Ordinary Least Square of Mincer Model for Urban and Rural

The other variable is region. It is divided by urban and rural areas in Indonesia. Table 5-3 illustrates the OLS coefficients estimated for the urban and rural separately. The standard Mincer models regarding to table 5-3 results indicates that an additional year of duration of education is associated with an annual 8,5175 percent, and 6,3995 percent increase in earnings for urban and rural respectively. It supported by some empirical studies which are Speare and Harris (1986) argue that the rate of returns to education have been lower in rural rather than in urban areas in Indonesia, and Van Cao and Akita (2008) show that there is earnings inequality between urban and rural areas (Figure 5-2).

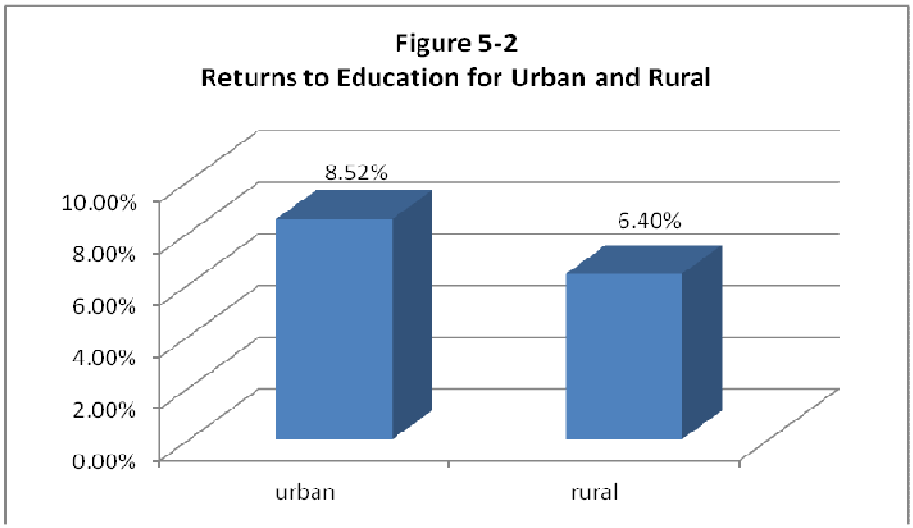
Table 5-3
Standard Mincer Model for Urban and Rural Variables

	all	urban	rural
Constant	12.79118***	12.67961***	12.96716***
	[0.005436]	[0.007513]	[0.008136]
	(2353.255)	(1687.661)	(1593.837)
Duration of education	0.077868***	0.085175***	0.063995***
	[0.000442]	[0.000587]	[0.000718]
	(176.2695)	(145.1328)	(89.08144)
Experiences	0.052576***	0.059329***	0.040519***
	[0.000651]	[0.000859]	[0.000999]
	(80.70074)	(69.05487)	(40.57583)
Quadratic of experiences	-0.000985***	-0.001054***	-0.000839***
	[0,00211]	[0,00284]	[0,000314]
	(-46.73625)	(-37.16766)	(-26.73507)
R squared	0.217529	0.261643	0.134258
F-Statistic	14850.78	11197.27	3383.753
Prob(F-statistic)	0.000000	0.000000	0.000000
Observations	186271	104629	81642

Notes: ***, **, * indicate the level of significance at 1%, 5%, and 10% levels respectively
Standard errors are in square bracket
t-Statistics are in parentheses

Source: Author's calculation based on NFLS data 2012

In addition, based on table 5-3, The R-squared for urban and rural are 0.261643 percent and 0.134258 respectively. It means that 26,1643 percent and 13,4258 percent of the variance of the dependent variables in log earnings for urban and rural are explained by the regression of Mincer model equation.



Source : Author illustration based on Table 5-3

The summary statistics of standard Mincer model used in this research for urban and rural are reported in table 5-4. The mean of monthly earnings are 13,931 for urban areas, and 13,719 for rural areas. Meanwhile, the standard deviation of monthly earnings are 89,2455 percent for urban, and 84,5751 percent for rural areas. It means that the result of standard deviation shows the data points are spread out from mean which larger than a big variety of values regarding to high standard deviation.

Table 5-4
Summary Statistics of Standard Mincer Model for Urban and Rural Variables

Dependent Variable	All		Urban		Rural	
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
Monthly earning	13.844	0.879871	13.931	0.892455	13.719	0.845751

Source: Author's calculation based on NFLS data 2012

In term of control variables which are sex and region, from the estimation results in table 5-5, it can be clearly seen that female will has lower earnings compared to male. The differences is about -37,3379 percent. It means that if the individual is female, then the earning is about 37,3379 percent lower relative to male. The hypothesis for these results are in agreement with study that if two individuals have the same characteristics except gender then those the rate of returns to education would still remains dissimilar or in other words female's earnings is about lower relative to male as their counterparts (Pirmana, 2006).

5.3 Ordinary Least Square of Mincer Model with Control Variables Sex and Region

Moreover, regarding to table 5-5, it is clear that individual who lived in rural areas will has lower earnings compared to individual in urban areas. The differences is about -4,9432 percent. It is supported by empirical study that people who lived in urban areas will have a bigger rate of returns to education compared to people in rural areas (Pirmana, 2006). For the R-squared, the result regarding to table 5-5 is 0.258245 which implies that 25,8245 percent of the variation in earnings is explained by variables that involved in the Mincer model.

Table 5-5
Mincer Model with Control Variables Sex and Region

	Mincer model
Dependent Variables	
Constant	12.95066*** [0.006136] (2110.536)
Duration of education	-0.373379*** [0.003997] (-93.42383)
Experiences	0.048796*** [0.000636] (76.77221)
Quadratic of experiences	-0.000891*** [0,00205] (-43.38047)
Control Variables	
Sex	-0.373379*** [0.003997] (-93.42383)
Region	-0.049432*** [0.003980] (-12.41987)
R squared	0.258245

F-Statistic	11158.81
Prob(F-statistic)	0.000000
Observations	186271

Notes: ***, **, * indicate the level of significance at 1%, 5%, and 10% levels respectively
Standard errors are in square bracket
t-Statistics are in parentheses

Source: Author's calculation based on NFLS data 2012

The summary statistics of Mincer model include control variables which are sex and region are reported in table 5-6. The mean of monthly earning is 13,84448. Meanwhile, the standard deviation of monthly earning is 87,9871 percent. It means that the high result of standard deviation indicates the data points are spread out from mean value.

Table 5-6
Summary Statistics of Mincer Model Include Control Variables
(Sex and Region)

Dependent Variable	Mincer model include control variables (sex and region)	
	Mean	Standard Deviation
Monthly earning	13.84448	0.879871

Source: Author's calculation based on NFLS data 2012

5.4 Ordinary Least Square of Mincer Model for Single and Married

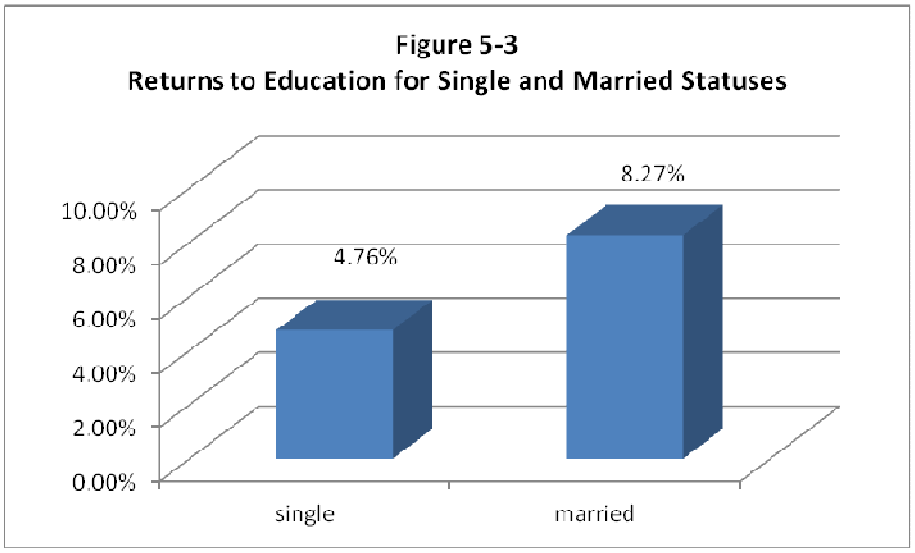
Next variable is marital status; there are four types of marital status regarding to NFLS data 2012 in Indonesia which are single, married, widowed, and divorced. Table 5-7 describes the estimation the rate of returns to education for only single and married as independent variables. According to table 5-7, R-squared for single and married variables are 0.065357 and 0.237508. It means that 6,5357 percent and 23,7508 percent of the variance of the dependent variable in rate of returns to education can be explained by the equation of earnings function. Table 5-7 indicates the OLS coefficients estimated for the single and married marital statuses separately. It can be clearly seen that an additional year of duration of education is associated with 4,7615 percent and 8,2684 percent increase in rate of returns to education for single and married respectively (Figure 5-3). It showed that the rate of returns to education for single marital status is lower than married marital status. For more specifically, the hypothesis argues that married male has higher wages rather than single male (Gray, 1997). It is supported by the data from table 5-8, It indicates that an additional year of duration of schooling is associated with 6,1587 percent and 8,7141 percent increase in rate of returns to education for single male and married male respectively.

Table 5-7
Standard Mincer Model for Single and Married Variables

	single	married
Constant	12.9751***	12.85778***
	[0.013495]	[0.006329]
	(961.4996)	(2031.611)
Duration of education	0.047615***	0.082684***
	[0.001109]	[0.000506]
	(42.92901)	(163.3583)
Experiences	0.047535***	0.041938***
	[0.002114]	[0.000764]
	(22.48736)	(54.92748)
Quadratic of experiences	-0.001269***	-0.000694***
	[0,00887]	[0,00242]
	(-14.29937)	(-28.66046)
R squared	0.065357	0.237508
F-Statistic	771.5516	12131.17
Prob(F-statistic)	0.000000	0.000000
Observations	37753	136233

Notes: ***, **, * indicate the level of significance at 1%, 5%, and 10% levels respectively
Standard errors are in square bracket
t-Statistics are in parentheses

Source: Author's calculation based on NFLS data 2012



Source : Author illustration based on Table 5-7

On the other hand, the hypothesis for female argues that married female has lower salary rather than single female because their spend extra time to home responsibilities (Purnastuti, et al 2011).). However, the data from table 5-8 shows that an additional year of duration of schooling is associated with 3,971 percent and 7,4878 percent increase in rate of returns to education for single female and married female respectively (Figure 5-4). It means that married female has higher salary rather than single female. The hypothesis related to this result is because married women have time strategy between work and family and capabilities to manage money as a consequences women become more professional than men. In addition, women who had jobs before marriage tend to keep their jobs as it would be difficult to get another job (Papanek and Schwede, 1988). Those factors could be the main reasons for married female has higher salary rather than single female. Their professional active and experiences might increase married female wages.

Table 5-8
Standard Mincer Model for Male and Female
(Single and Married Variables)

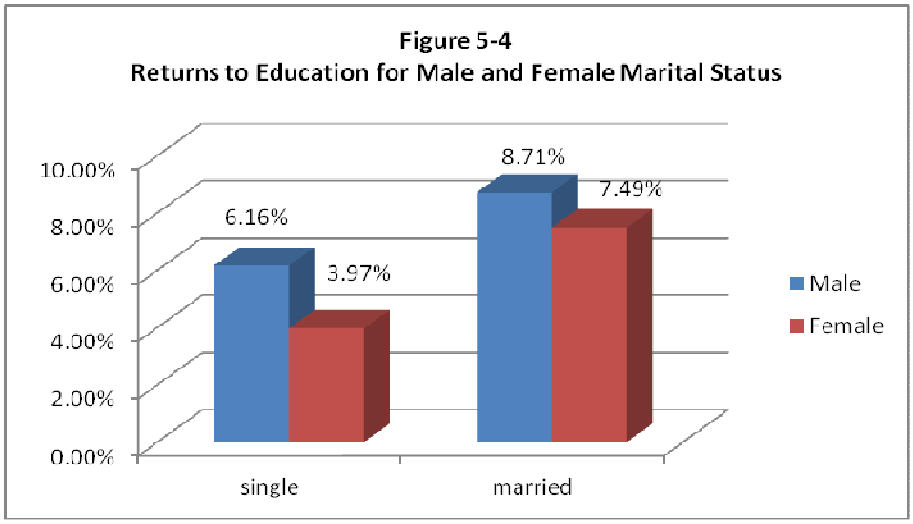
	Male		Female	
	single	married	single	married
Constant	12.89154***	13.00123***	13.01695***	12.83632***
	[0.02261]	[0.010439]	[0.016771]	[0.007915]
	(570.1669)	(1245.424)	(776.1718)	(1621.825)
Duration of education	0.061587***	0.087141***	0.03971***	0.074878***
	[0.001865]	[0.000793]	[0.001375]	[0.000652]
	(33.02633)	(109.8553)	(28.87348)	(114.7707)

Experiences	0.04963***	0.034155***	0.044789***	0.042939***
	[0.003547]	[0.001138]	[0.002664]	[0.001001]
	(13.99094)	(30.01736)	(16.81573)	(42.90462)
Quadratic of experiences	-0.00134***	-0.000525***	-0.001171***	-0.000723***
	[0.000173]	[0,00358]	[0.000106]	[0,00319]
	(-7.741120)	(-14.67426)	(-11.08510)	(-22.7065)
R squared	0.090397	0.252546	0.051586	0.205355
F-Statistic	433.0675	5094.696	363.0458	6167.459
Prob(F-statistic)	0.000000	0.000000	0.000000	0.000000
Observations	14667	51035	23085	85198

Notes: ***, **, * indicate the level of significance at 1%, 5%, and 10% levels respectively
Standard errors are in square bracket
t-Statistics are in parentheses

Source: Author's calculation based on NFLS data 2012

Moreover, regarding to table 5-8, R-squared for single male, married male, single female, and married female are 0.090397, 0.252546, 0.051586, and 0.205355 respectively. It means that 9,0397 percent, 25,2546 percent, 5,1586 percent, and 20,5355 percent of the variance of the dependent variables in log earnings for male, married male, single female, and married female are explained by the regression of earnings model.



Source : Author illustration based on Table 5-8

The summary statistics of Standard Mincer model for single and married in this research are reported in table 5-9. The mean of monthly earnings are 13,588 for single status, and 13,948 for married status. Whereas, the standard deviation of monthly earnings are 87,9871 percent for single, and 88,0092 percent for married. It means the data points are not concentrated from mean.

Table 5-9
Summary Statistics of Mincer Model for Single and Married

Dependent Variable	All		Single		Married	
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
Monthly earning	13.844	0.879871	13.588	0.785653	13.948	0.880092

Source: Author's calculation based on NFLS data 2012

Furthermore, the summary statistics of Standard Mincer model for single and married marital statuses which are divided into male and female separately are reported in table 5-10. The mean of monthly earnings are 13,67 for single male, 14,18 for married male, 13,535 for single female, and 13,802 for married female. Meanwhile, the standard deviation results are spread out from mean of monthly earnings which are 77,7195 percent for single male, 81,2859 percent for married male, 78,6592 percent for single female, and 88,9672 percent for married female.

Table 5-10
Summary Statistics of Mincer Model for Single and Married
(Male and Female Respectively)

Dependent Variable	Single Male		Married Male		Single Female		Married Female	
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
Monthly earning	13.67	0.777195	14.18	0.812859	13.535	0.786592	13.802	0.889672

Source: Author's calculation based on NFLS data 2012

5.5 Ordinary Least Square of Mincer Model with Control Variable Marital Status

Table 5-11 illustrates the estimation of the rate of returns to education including control variable marital status. The improved Mincer models regarding to table 5-11 results indicates that an additional year of duration of education is associated with an annual 7,6837 percent increase in earnings. In addition, the R-squared is 0.224536 which indicates that 22,4536 percent of the variance of the dependent variables in log earnings can be explained by the regression of Mincer model. Table 5-11 also indicates that individual who has

status married will has higher earnings compared to individual has status single. The differences is about 24,5963 percent.

Table 5-11
Mincer Model with Control Variable Marital Status

	Mincer model
Dependent Variables	
Constant	12.66538*** [0.006577] (1925.634)
Duration of education	0.076837*** [0.000460] (166.8565)
Experiences	0.043044*** [0.000715] (60.23082)*
Quadratic of experiences	-0.000734*** [0,00299] (-32.00472)
Control Variable	
Marital Status	0.245963 [0.005186] (47.43197)
R squared	0.224536
F-Statistic	10853.9
Prob(F-statistic)	0.000000
Observations	173986

Notes: ***, **, * indicate the level of significance at 1%, 5%, and 10% levels respectively
Standard errors are in square bracket
t-Statistics are in parentheses

Source: Author's calculation based on NFLS data 2012

The summary statistics of improved Mincer model with control variable in this research are reported in table 5-12. The mean of monthly earnings is 13.86834. Whereas, the standard deviation of monthly earnings is 87,2937 percent. It

means that the result of standard deviation indicates that the data points are spread out from mean.

Table 5-12
Summary Statistics of Mincer Model with Control Variable Marital Status

Dependent Variable	Mincer model include control variables (marital status)	
	Mean	Standard Deviation
Monthly earning	13.86834	0.872937

Source: Author's calculation based on NFLS data 2012

5.6 Ordinary Least Square of Mincer Model with Control Variable Marital Status for Male and Female

Table 5-13 describes the estimation of the rate of returns to education that include control variable marital status for male and female respectively. The improved Mincer models based on table 5-13 results indicates that an additional year of duration of schooling are associated with an annual 8,2813 percent and 6,8897 percent increase in earnings for male and female respectively. Moreover, the R-squared results are 0.266989 and 0.186058. It means that 26,6989 percent and 18,6058 percent of the variance of the dependent variables in log earnings for male and female respectively can be explained by the regression of rate of returns to education.

Table 5-13
Mincer Model with Control Variables Marital Status for Male and Female

	Mincer model	
Dependent Variables	male	female
Constant	12.68644***	12.70277***
	[0.010258]	[0.008494]
	(1236.751)	(1495.419)
Duration of education	0.082813***	0.068897***
	[0.000733]	[0.000589]
	(112.9798)	(116.9624)
Experiences	0.036004***	0.043716***
	[0.00108]	[0.000932]
	(33.33419)	(46.90553)
Quadratic of experiences	-0.000582***	-0.000757***
	[0,00344]	[0,00300]
	(-16.92662)	(-25.22558)

Control Variables		
Marital Status	0.352287***	0.187455***
	[0.007794]	[0.006785]
	(45.19755)	(27.62748)
R squared	0.266989	0.186058
F-Statistic	5309.824	5236.061
Prob(F-statistic)	0.000000	0.000000
Observations	65703	108283

Notes: ***, **, * indicate the level of significance at 1%, 5%, and 10% levels respectively
Standard errors are in square bracket
t-Statistics are in parentheses

Source: Author's calculation based on NFLS data 2012

Moreover, table 5-13 describes that individual who has status married for male will has higher earnings compared to male who has status single. The differences is about 35,2287 percent. Whereas, married female will has bigger earnings compared to female who are not married yet. The difference is about 18,058 percent. It means that married male or female can give higher earning rather than single male or single female.

The summary statistics of improved Mincer model with control variables marital status for male and female in this research are reported in table 5-14 and table 5-15. Based on table 5-14, the mean of monthly earnings regarding to marital status for male is 14.06452. Whereas, the standard deviation of monthly earnings is 83,2461 percent. It means that the result of standard deviation point out that the data points are not concentrated from mean.

Table 5-14
Summary Statistics of Mincer Model with Control Variable Marital Status for Male

Dependent Variable	Mincer model include control variables (marital status_male)	
	Mean	Standard Deviation
Monthly earning	14.06452	0.832461

Source: Author's calculation based on NFLS data 2012

Furthermore, regarding to table 5-15, the mean of monthly earnings regarding to marital status for female is 13.74349. While, the standard deviation of monthly earnings is 87,5144 percent. It means that the result of high standard deviation illustrates that the data points are spread out from mean of monthly earning.

Table 5-15
Summary Statistics of Mincer Model with Control Variable Marital Status for Female

Dependent Variable	Mincer model include control variables (marital status_female)	
	Mean	Standard Deviation
Monthly earning	13.74349	0.875144

Source: Author's calculation based on NFLS data 2012

5.7 Ordinary Least Square of Mincer Model for Industrial Classification

Table 5-16 and 5-17 describe the estimation of the rate of returns for industrial classification regarding to Indonesian Standard Industrial Classification in 1990. There are nine types of industrial classification. The R-squared for each industrial classification regarding to table 5-13 and 5-14 are 0.06333, 0.253462, 0.240819, 0.32962, 0.106556, 0.122636, 0.128553, 0.301507, and 0.377902. It means that 6,333 percent, 25,3462 percent, 32,962 percent, 10,6556 percent, 12,2636 percent, 12,8553 percent, 30,1507 percent, and 37,7902 percent of the variance of the dependent variable in log earnings for each type of industry can be explained by the regression of earnings model.

The standard Mincer models regarding to table 5-16 shows that an additional year of duration of education is associated with an annual 5,3576 percent increase in earnings for industrial 1 (Agriculture, Forestry, Hunting, and Fisheries). For industrial 2 (Mining and Quarrying), there is 9,99789 increase in rate of returns to education for an additional year of duration of education. Next, industrial 3 (Manufacturing Industry) indicates that an additional year of duration of education is related with an annual 10,3128 percent increase in salary. In industrial 4 (Electricity, Gas, and Water), there is also 9,139 percent increase in earnings due to an additional year of duration of education.

Furthermore, regarding to table 5-17, in industrial 5 (Construction) indicates that an additional year of duration of education is connected to an annual 4,8863 percent increase in earnings. For industrial 6 (Wholesale Trade, Retail Trade, Restaurants, and Hotels), there is 6,2702 percent increase in rate of returns to education due to an additional year of duration of education. Then, industrial 7 (Transportation, Warehousing, and Communication) shows that an extra year of schooling is associated with 6,8747 percent increase in earnings. Next, industrial 8 (Financing, Insurance, Real Estate, and Business Services), there is 11,6008 increase in earnings due to an extra year of schooling. Last, industry 9 (Community, Social and Personal Service) indicates that an extra year of schooling is associated with 9,0044 percent increase in rate of returns to education (Figure 5-5).

Table 5-16
Standard Mincer Model for Industrial Classification
(Industrial 1 to 4)

	industrial 1	industrial 2	industrial 3	industrial 4
Constant	13.12572***	13.30343***	12.60838***	12.79541***
	[0.012760]	[0.02885]	[0.014571]	[0.104632]
	(1028.629)	(461.1252)	(865.2864)	(122.2892)
Duration of education	0.053576***	0.099789***	0.103128***	0.09139***
	[0.001333]	[0.002819]	[0.001341]	[0.008343]
	(40.20110)	(35.40037)	(76.91678)	(10.95459)
Experiences	0.022592***	0.052228***	0.039926***	0.055564***
	[0.001359]	[0.004414]	[0.001561]	[0.009336]
	(16.62298)	(11.83239)	(25.57539)	(5.951322)
Quadratic of experiences	-0.000622***	-0.001185***	-0.000887***	-0.000606***
	[0,00390]	[0.000170]	[0,00531]	[0.000344]
	(-15.95487)	(-6.988599)	(-16.68518)	(-1.762327)
R squared	0.06333	0.253462	0.240819	0.32962
F-Statistic	642.5191	519.9121	2213.909	117.842
Prob(F-statistic)	0.000000	0.000000	0.000000	0.000000
Observations	40417	5528	22621	742

Notes: ***, **, * indicate the level of significance at 1%, 5%, and 10% levels respectively
Standard errors are in square bracket
t-Statistics are in parentheses

Source: Author's calculation based on NFLS data 2012

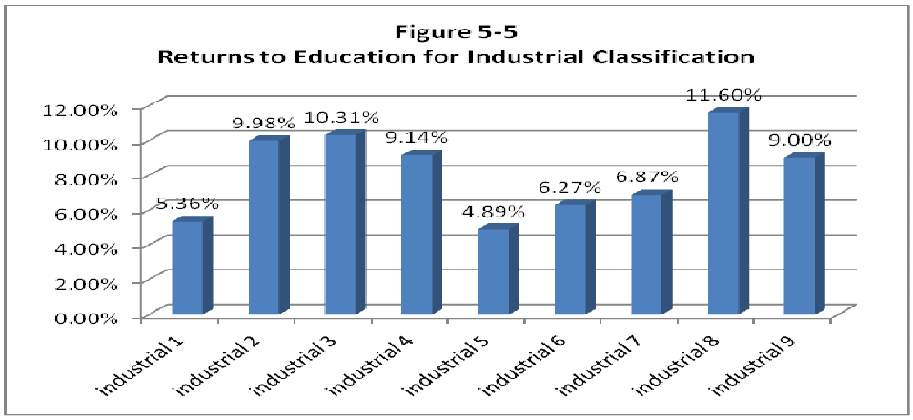
Based on Pirmana (2006), the highest earnings are earned by people who worked in high paying industrial sectors. Regarding to table 5-16, table 5-17, and figure 5-5 the highest earnings are in industrial 8 (Financing, Insurance, Real Estate, and Business Services) for 11,60 percent, industrial 3 (Manufacturing Industry) for 10,31 percent, and industrial 2 (Mining and Quarrying) for 9,98 percent. Those sectors are categorizes as high paying industrial sectors based on his study. Moreover, the hypothesis shows that the industrial sectors have significant influence on wages and become another factor that most essential after duration of schooling (Pirmana, 2006).

Table 5-17
Standard Mincer Model for Industrial Classification
(Industrial 5 to 9)

	industrial 5	industrial 6	industrial 7	industrial 8	industrial 9
Constant	13.42325***	12.91235***	13.0847***	12.4544***	12.2642***
	[0.018868]	[0.012519]	[0.019932]	[0.0394]	[0.013026]
	(711.4312)	(1031.398)	(656.4779)	(316.1047)	(941.537)
Duration of education	0.048863***	0.062702***	0.068747***	0.116008***	0.090044***
	[0.001790]	[0.0011]	[0.001784]	[0.002805]	[0.000935]
	(27.29704)	(56.99896)	(38.53209)	(41.36071)	(96.3183)
Experiences	0.029892***	0.056714***	0.038144***	0.058683***	0.086286***
	[0.002232]	[0.001421]	[0,002265]	[0.003943]	[0.001375]
	(13.38999)	(39.90611)	(16.83932)	(14.8817)	(62.73542)
Quadratic of experiences	-0.000614***	-0.001312***	-0.000957***	-0.001028***	-0.001333***
	[0,00774]	[0,00490]	[0,00772]	[0.000156]	[0,00440]
	(-7.935199)	(-26.77341)	(-12.40311)	(-6.586324)	(-30.27898)
R squared	0.106556	0.122636	0.128553	0.301507	0.377902
F-Statistic	341.5721	1528.43	578.0713	774.9615	9502.557
Prob(F-statistic)	0.000000	0.000000	0.000000	0.000000	0.000000
Observations	16311	33706	12769	5462	48714

Notes: ***, **, * indicate the level of significance at 1%, 5%, and 10% levels respectively
Standard errors are in square bracket
t-Statistics are in parentheses

Source: Author's calculation based on NFLS data 2012



Source : Author illustration based on Table 5-16 and 5-17

The summary statistics of standard Mincer model used in this research for industrial classification are reported in table 5-18 and 5-19. The mean of monthly earnings are 13.5881 for industrial 1, 14.347 for industrial 2, 13.7208 for industrial 3, and 14.2749 for industrial 4. Meanwhile, the standard deviation of monthly earnings are 79,0908 percent for industrial 1, 86,8486 percent for industrial 2, 77,8589 percent for industrial 3, 78,5193 percent for industrial 4. It means that the results of high standard deviation shows the data points are spread out from mean.

Table 5-18
Summary Statistics of Standard Mincer Model for Industrial Classification Variables
(Industrial 1 to 4)

Dependent Variable	industrial 1		industrial 2		industrial 3		industrial 4	
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
Monthly earning	13.5881	0.790908	14.347	0.868486	13.7208	0.778589	14.2749	0.785193

Source: Author's calculation based on NFLS data 2012

Moreover, the summary statistics of standard Mincer model for industrial 5 to 9 are reported in table 5-19. The mean of monthly earnings are 13.987 for industrial 5, 13.71 for industrial 6, 13.865 for industrial 7, 14.22 for industrial 8, and 14.02 for industrial 9. Meanwhile, the standard deviation of monthly earnings are 63,8629 percent for industrial 5, 77,2295 percent for industrial 6, 73,8014 percent for industrial 7, 84,2673 percent for industrial 8, and 103,0635 percent for industrial 9. It also means that the results of standard deviation are high indicates that's the data points are spread out from mean of monthly earnings.

Table 5-19
Summary Statistics of Standard Mincer Model for Industrial Classification Variables
(Industrial 5 to 9)

Dependent Variable	industrial 5		industrial 6		industrial 7		industrial 8		industrial 9	
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
Monthly earning	13.987	0.638629	13.71	0.772295	13.865	0.738014	14.22	0.842673	14.02	1.030635

Source: Author's calculation based on NFLS data 2012

5.8 Ordinary Least Square of Mincer Model with control variable Industrial Classification

Table 5-20 illustrates the estimation of the rate of returns to education with control variables of industrial classification based on Indonesian Standard Industrial Classification in 1990. There are nine types of industrial classification. In this OLS regression, there are eight industrial sectors which are industrial 1 to industrial 8 that include in equation as control variables. Industrial 9 is the base for other industrial sectors.

The improved Mincer model based on table 5-20 results indicates that the R-squared is 0.249112 which indicates that 24,9112 percent of the variance of the dependent variables in log earnings can be explained by the regression of Mincer model. Moreover, table 5-20 shows that individual who worked in industrial 1 (Agriculture, Forestry, Hunting, and Fisheries) has higher earnings compared to individual who worked in Industrial 9 (Community, Social and Personal Service), the difference is about 8,8856 percent. In industrial 2 (Mining and Quarrying), individual worker has higher wages also compared to individual worker in industrial 9, the difference is about 82,9932 percent. The high result of this difference is because mining and quarrying categories as high paying industrial sectors (Pirmana, 2006).

In addition, regarding to table 5-20, individual who worked in industrial 3 (Manufacturing Industry) has higher wages compared to individual who worked in industrial 9, the difference is about 9,6992 percent. Worker in industrial 4 (Electricity, Gas, and Water) has higher earnings also compared to industrial 9 for about 35,9809 percent differences. In industrial 5 (Construction), there is differences salary for individual worker compared to individual who worked in industrial 9. The difference is about 39,845 percent higher rather than industrial 9. It means that at the same qualifications of worker except industrial sector, the rate of returns to education in industrial 1,2,3,4 and 5 is higher rather than individual who worked in industrial 9.

Moreover, based on table 5-20, individual who worked in industrial 6 (Wholesale Trade, Retail Trade, Restaurants, and Hotels), or industrial 7 (Transportation, Warehousing, and Communication), or industrial 8 (Financing, Insurance, Real Estate, and Business Services) has higher earnings compared to individual who worked in industrial 9 (Community, Social and Personal Service). The differences are 11,8809 percent, 24,4646 percent, 30,359 percent respectively. It means that at the same criteria individual who worked in industrial 6,7,8 has difference salary for 11,8809 percent, 24,4646 percent, 30,359 percent higher rather than individual who worked in industrial 9.

Table 5-20
Mincer Model with Control Variables Marital Status

	Mincer model
Dependent Variables	
Constant	12.5816*** [0.008039] (1565.099)
Duration of education	0.084054*** [0.000508] (165.3277)
Experiences	0.055739*** [0.000641] (86.88869)
Quadratic of experiences	-0.001018*** [0,00207] (-49.24427)
Control Variables	
Industrial 1	0.088856*** [0.006535] (13.59653)
Industrial 2	0.829932*** [0.012043] (68.91629)
Industrial 3	0.096992***

	[0.006672]
	(14.53751)
Industrial 4	0.359809***
	[0.028581]
	(12.58899)
Industrial 5	0.39845***
	[0.00924]
	(43.12405)
Industrial 6	0.118809***
	[0.005907]
	(20.11488)
Industrial 7	0.244646***
	[0.00815]
	(30.01668)
Industrial 8	0.30359***
	[0.011003]
	(27.5914)
R squared	0.249112
F-Statistic	4833.133
Prob(F-statistic)	0.000000
Observations	186271

Notes: ***, **, * indicate the level of significance at 1%, 5%, and 10% levels respectively
Standard errors are in square bracket
t-Statistics are in parentheses

Source: Author's calculation based on NFLS data 2012

The summary statistics of improved Mincer model used in this research with control variables industrial classification are reported in table 5-21. The mean of monthly earnings is 13.84448. Meanwhile, the standard deviation of monthly earnings is 0.879871 or 87,9871 percent. It means that the result of high standard deviation indicates the data points are spread out from mean or in other words are not concentrated.

Table 5-21
Summary Statistics of Mincer Model with Control Variables Industrial Classification

Dependent Variable	Mincer model include control variables (industrial classification)	
	Mean	Standard Deviation
Monthly earning	13.84448	0.879871

Source: Author's calculation based on NFLS data 2012

5.9 Ordinary Least Square of Standard Mincer Model for DKI Jakarta

DKI Jakarta as capital city of Indonesia is the most populous city in Indonesia and also in Southeast Asia. DKI Jakarta is the center of economics country, political, and culture city in Indonesia. Table 5-22 describes the estimation of the rate of returns to education for DKI Jakarta variable. Regarding to table 5-22, the R-squared result is 0.344424. It means that 34,4424 percent of the variance of the dependent variables can be explained by the regression of earnings model. In addition, the result indicate that an extra year of schooling is associated with an annual 11,3734 percent increase in rate of returns to education. The prob (F-statistic) result shows that rate of returns to education in Jakarta is significant.

Table 5-22
Standard Mincer Model for DKI Jakarta Variables

	DKI Jakarta
Constant	12.6987***
	[0.03358]
	(378.1613)
Duration of education	0.113734***
	[0.00264]
	(43.08517)
Experiences	0.049434***
	[0.003542]
	(13.9556)
Quadratic of experiences	-0.000727***
	[0.000121]
	(-5.980802)

R squared	0.344424
F-Statistic	774.5793
Prob(F-statistic)	0.000000
Observations	4564

Notes: ***, **, * indicate the level of significance at 1%, 5%, and 10% levels respectively
Standard errors are in square bracket
t-Statistics are in parentheses

Source: Author's calculation based on NFLS data 2012

Table 5-23 illustrates the summary statistics of standard Mincer model used in this research for DKI Jakarta. The mean of monthly earnings is 13.80175. Meanwhile, the standard deviation of monthly earnings is 88,9672 percent. It indicates that the result of high standard deviation shows the data points are spread out from mean in regression of monthly earnings.

Table 5-23
Summary Statistics of Standard Mincer Model for DKI Jakarta Variables

Dependent Variable	Mincer model for DKI Jakarta	
	Mean	Standard Deviation
Monthly earning	13.80175	0.889672

Source: Author's calculation based on NFLS data 2012

5.10 The Comparison of Ordinary Least Square of Standard Mincer Model by Gender and Urban-Rural Areas

Table 5-24 compares the estimation of the rate of returns for male and female in urban and rural areas. Based on table 5-24, the R-squared for male in urban areas, male in rural areas, female in urban areas, and female in rural areas are 0.241849, 0.116762, 0.306935, and 0.200304 respectively. It means that 24,1849 percent, 11,6762 percent, 30,6935 percent, and 20,0304 percent of the variance of the dependent variable in log earnings can be explained by the regression of Mincer model. Moreover, the standard Mincer models regarding to table 5-24 results shows that an extra year of schooling is associated with an annual 8,2502 percent, 5,853 percent, 9,2045 percent, and 7,8319 percent increase in earnings for male in urban areas, male in rural areas, female in urban areas and female in rural areas respectively. The regression results indicate that male and female in urban areas have higher earnings compare to male and female in rural areas (figure 5-6). For female, it supported by empirical study which is Pirmana (2006) argue that majority of female worker in rural areas is work in

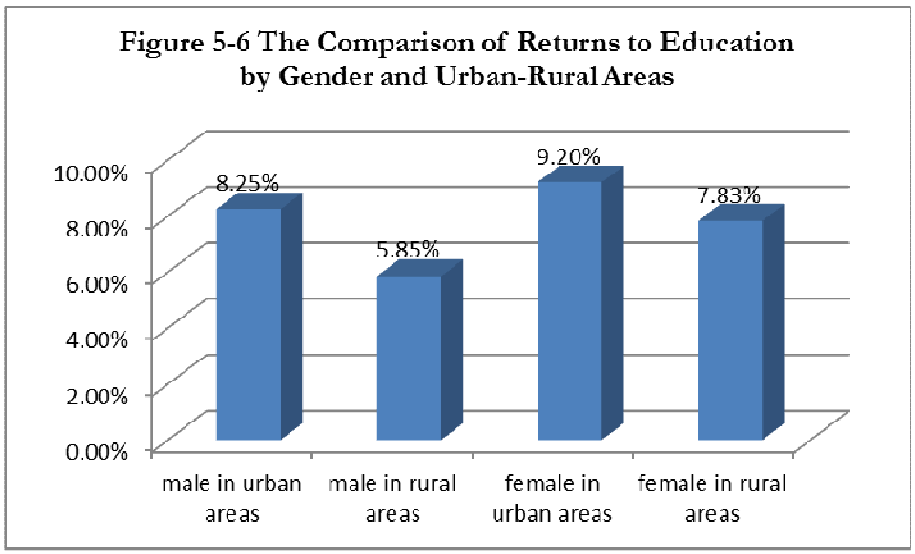
agriculture sectors which involve as a poor farm labors. It might be one reason behind higher earnings for female in urban areas rather than rural areas. For both male and female in urban areas, the infrastructure and abilities are more advanced and the chance of a high return to investment is higher in urban areas. Therefore, regarding to a better of infrastructure and higher-skilled labor force, urban areas obtain a more rapid rise in earnings rather than rural areas (Van Cao and Akita, 2008).

Table 5-24
The Comparison of Standard Mincer Model by Gender and Urban-Rural Areas

	male in urban areas	male in rural areas	female in urban areas	female in rural areas
Constant	12.87477***	13.19134***	12.37724***	12.49378***
	[0.009292]	[0.009341]	[0.012018]	[0.014439]
	(1385.589)	(1412.258)	(1029.853)	(865.2771)
Duration of education	0.082502***	0.05853***	0.092045***	0.078319***
	[0.000734]	[0.000855]	[0.000926]	[0.001195]
	(112.4495)	(68.43332)	(99.41213)	(65.54212)
Experiences	0.051785***	0.032784***	0.060894***	0.048635***
	[0.001018]	[0.001119]	[0.001483]	[0.001853]
	(50.88358)	(29.30059)	(41.06822)	(26.24561)
Quadratic of experiences	-0.000933***	-0.000678***	-0.000972***	-0.000941***
	[0,00333]	[0,00353]	[0,00496]	[0,00576]
	(-27.99943)	(-19.21251)	(-19.61378)	(-16.33504)
R squared	0.241849	0.116762	0.306935	0.200304
F-Statistic	6366.783	1975.16	5154.525	1722.514
Prob(F-statistic)	0.000000	0.000000	0.000000	0.000000
Observations	67538	56897	37092	24744

Notes: ***, **, * indicate the level of significance at 1%, 5%, and 10% levels respectively
Standard errors are in square bracket
t-Statistics are in parentheses

Source: Author's calculation based on NFLS data 2012



Source : Author illustration based on Table 5-24

Table 5-25 indicates the summary statistics of the comparison standard Mincer model used in this research by gender and urban-rural areas. The mean of monthly earnings are 14.057 for male in urban areas, 13.85294 for male in rural areas, 13.71508 for female in urban areas, and 13.42837 for female in rural areas. Meanwhile, the standard deviation of monthly earnings are 83,4642 percent for male in urban areas, 77,4731 percent for male in rural areas, 94,5616 percent for female in urban areas, and 91,7292 percent for female in rural areas. It means that the results of standard deviation are high indicates that's the data points are not concentrated from mean of monthly earnings.

Table 5-25
Summary Statistics of the Comparison Standard Mincer Model by Gender and Urban-Rural Areas

Dependent Variable	Male in Urban Areas		Male in Rural Areas		Female in Urban Areas		Female in Rural Areas	
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
Monthly earning	14.057	0.834642	13.85294	0.774731	13.71508	0.945616	13.42837	0.917292

Source: Author's calculation based on NFLS data 2012

Chapter 6

Conclusion

In this research paper, we estimated the rate of returns to education in Indonesia based on Mincer model. Regarding to theory, the duration of schooling has been playing important role to the individual student for future earning and become a part of investment. It means that higher educational attainment accept higher wages and better type of jobs in industrial classification than lower educational attainment. Moreover, Standard mincer model shows that rate of returns to education regression estimated the return for an extra year of education is significant and positive to the wages (Purnastuti, 2012)

The total number of observation is 726.044 individual people in household and 33 provinces of Indonesia. The data we use is primary data from the National Labor Force Survey (*Sakernas*) data in 2012 and cover labor individual information. Collected data used questionnaire of SAK12-AK by interviewing people personally related to economically active and not economically active individual people in labor market. The characteristics of data are employment, underemployment, unemployment, and working age people who are in schools, doing housekeeping, and others, except personal doings.

We use standard Mincer model and improved Mincer model which is include control variables. The control variables are in dummy variables which are sex, region, marital status, and industrial classification. The purpose of regression is to show the statistical relationship among market wages, duration of schooling, and experience. The variables are salary in log form as dependent variable, duration of education and experience as independent variables, and control variables in dummy variables form. Those control variables might be affect dependent or independent variables. It will be kept constant or monitored in order to try to minimize its effect on the regression.

By estimating regression of log earnings from Mincer model, the regression result shows that higher level of educational achievement give more rate of returns to education than lower level of educational achievement in Indonesia. In other words, the relationship between the rate of returns to education or earnings and duration of education is positive and significant. The regression result describes all coefficients in all duration of education are positive and statistically significant at one percent. It indicates that the result of regression of Mincer model confirm a positive relationship between individual's duration of education and earnings. Moreover, the rate of return on individual investment to education shows that an additional extra year of schooling is associated with an annual 7,7868 percent increase in earnings for individual worker in Indonesia. The explanation behind for the higher level of educational attainment give more rate of return to education compare to lower level of educational attainment is because the scarcity of skilled worker in

Indonesia, which leads to rapid increase in salaries of worker with higher level of educational attainment (Pirmana, 2006)

On the other hand, the quadratic of experience give negative sign to rate of returns to education. It is because after a given number of years of experiences, the earning is falling. The profiles of experiences have concave curve, or in other words experiences at the first will increase earnings and then will fall after reaching a given number of years (Purnastuti, 2012). The results of regression Mincer model shows that experiences is positive value for 5,2576 percent and the quadratic of experiences is negative for -0,0985 percent.

By considering a gender asymmetry in returns to education between male and female, the result indicates that there are also increase in earnings for 7,3526 percent, and 8,96 percent for male and female respectively, due to an additional year of duration of schooling. It means that the return to female's education is statistically higher than return to male's education (Purnastuti, 2012). The difference is 1,6074 percent. The main reason behind the higher returns to education for female than male is related to choosiness in labor force contribution. In the young group, females in the labor force might be deeply selected than male in the direction of more capable and talented worker (Purnastuti, 2012). Moreover, the higher interest costs of assets for schooling investment in female might be the reason for the individual rates of returns to education for female higher than male (Behrman and Deolalikar, 1995).

By analyzing urban and rural areas, the result of relationship between the rate of returns to education and duration of schooling in urban areas is different compare to rural areas. The results show that earnings in urban areas are higher compare to rural areas. An extra year of schooling is connected with an annual 8,5175 percent, and 6,3995 percent increase in salaries for urban and rural respectively. It indicates that there is inequality of earnings between urban and rural areas. The assumption for this is because mostly urban earnings are from salary employment or non-farm self-employment which different from in rural areas from agricultural earnings (Van Cao and Akita, 2008).

In order to observe the single and married differences of marital status in the rate of returns to education, the regression results show that married man has higher the rate of returns to education compare to single man. The result shows that an additional year of schooling is linked with 6,1587 percent and 8,7141 percent increase in rate of returns to education for single male and married male respectively. It is because that married man likely to be more productive rather than single man, they give additional effort on industry market activities (Gray, 1997). In addition, the regression result for woman show that married woman has higher the rate of returns to education rather than single woman. The difference is 3,5168 percent higher in earnings for married woman compared to single female. It because married woman is more professional rather than single woman, they can handle time strategy between work and family and have abilities to manage money (Papanek and Schwede, 1988).

Furthermore, by considering nine industrial classifications differences regarding to Indonesian Standard Industrial Classification in 1990, they are three main highest industrial sectors which give largest the rate of returns to education. It is divided into three sectors which are industrial 8 (Financing, Insurance, Real Estate, and Business Services), industrial 3 (Manufacturing Industry), and industrial 2 (Mining and Quarrying). An additional year of duration of education is connected with 11,60 percent, 10,31 percent, and 9,98 percent increase in earnings for industrial 8, industrial 2, and industrial 3 respectively. It is because those industrial sectors are classifies as high paying industrial sectors (Pirmana, 2006). Others industrial sectors are also give positive value to the rate of returns to education. The result shows that an extra year of schooling is associated with an annual 5,3576 percent increase in wages for industrial 1 (Agriculture, Forestry, Hunting, and Fisheries). For industrial 4 (Electricity, Gas, and Water), there is 9,139 percent increase in the rate of returns to education due to an extra year of schooling. In industrial 5 (Construction) describes that an extra year of duration of education is associated to an annual 4,8863 percent increase in earnings. Then, for industrial 6 For industrial 6 (Wholesale Trade, Retail Trade, Restaurants, and Hotels), there is 6,2702 percent increase in earnings due to an extra year of schooling. Next, industrial 7 (Transportation, Warehousing, and Communication) indicates that an additional year of schooling is connected with 6,8747 percent increase in the rate of returns to education. Last, industry 9 (Community, Social and Personal Service) indicates that an additional year of schooling is linked with 9,0044 percent increase in earnings.

By considering DKI Jakarta as urban areas and capital city of Indonesia, it indicates that DKI Jakarta give positive value to the rate of returns to education. An extra year of education in DKI Jakarta increase 11,3734 percent returns to education for individual worker in DKI Jakarta. The result is higher compare to regression result of urban areas for all provinces in Indonesia which is 8,5175 percent. It is because of DKI Jakarta is the center of economy and government. DKI Jakarta is the principal access to the rest of provinces in Indonesia and the largest city of Indonesia.

In conclusion, improvement in educational level attainment relates to the potentials of an individual worker to have a better salary will increasingly open. The differences of earnings by educational level achievement indicate that the tendencies to increase as the improvement in educational level attainment. In other words, the effect of schooling on wages is bigger for worker with higher level of educational attainment (Pirmana, 2006). Therefore, Indonesia government should more concentrated in investment in higher level of education, it should be a main concern of current policy. It is because the effectiveness of the investment in higher level of education increases the rate of returns to education to their former levels (Purnastuti et al, 2013).

6.1 Policy Relevance to the Rate of Returns to Education in Indonesia.

The Indonesia government has been trying to allocate 20 percent of government expenditure to education regarding to the fourth amendment after 2002 to Indonesia's Constitution. This government expenditure only concentrated on basic national educational which are primary and secondary levels of education. The great effect of this government expenditure is the significant increases participation rate on basic national level of education. On the other hand, senior secondary level of school and especially for higher education level show increase only on average, as illustrated in previous section (table 2-1).

This research paper shows evidence of the rate of returns to education in Indonesia and underlines some important points. The regression result indicates that earnings is connected with an additional year of schooling, it gives significant and positive value to salaries (Purnastuti, 2012). It means that higher education from duration of education value give significant and positive effect to the rate of returns to education. Higher education is important because it gives more advantages to earnings. Therefore, Indonesia government has to make sure better focused education development policies, or the development of policies should be concentrated in all level of educations not only in primary and secondary levels.

Appendix 1. Regression result of Mincer standard model

Dependent Variable: LOG(SALARY)
Method: Least Squares
Sample (adjusted): 1 186271
Included observations: 160263 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DURATION_OF_EDUC ATION	0.077868	0.000442	176.2695	0.0000
EXPERIENCES	0.052576	0.000651	80.70074	0.0000
EXPERIENCES^2	-0.000985	2.11E-05	-46.73625	0.0000
C	12.79118	0.005436	2353.255	0.0000

R-squared	0.217529	Mean dependent var	13.84448
Adjusted R-squared	0.217514	S.D. dependent var	0.879871
S.E. of regression	0.778319	Akaike info criterion	2.336663
Sum squared resid	97081.68	Schwarz criterion	2.336913
Log likelihood	-187236.3	Hannan-Quinn criter.	2.336738
F-statistic	14850.78	Durbin-Watson stat	0.551829
Prob(F-statistic)	0.000000		

Appendix 2. Regression result of Mincer model for male

Dependent Variable: LOG(SALARY)
Method: Least Squares
Sample (adjusted): 1 124435
Included observations: 104707 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DURATION_OF_EDUC ATION	0.073526	0.000539	136.3077	0.0000
EXPERIENCES	0.044292	0.000755	58.69235	0.0000
EXPERIENCES^2	-0.000832	2.43E-05	-34.22452	0.0000
C	13.00859	0.006483	2006.467	0.0000

R-squared	0.197746	Mean dependent var	13.96964
Adjusted R-squared	0.197723	S.D. dependent var	0.815805
S.E. of regression	0.730716	Akaike info criterion	2.210453
Sum squared resid	55905.67	Schwarz criterion	2.210819
Log likelihood	-115721.0	Hannan-Quinn criter.	2.210564
F-statistic	8602.676	Durbin-Watson stat	0.338616
Prob(F-statistic)	0.000000		

Appendix 3. Regression result of Mincer model for female

Dependent Variable: LOG(SALARY)
Method: Least Squares
Sample (adjusted): 1 61836
Included observations: 55556 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DURATION_OF_EDUC ATION	0.089600	0.000715	125.2411	0.0000
EXPERIENCES	0.057569	0.001154	49.86684	0.0000
EXPERIENCES^2	-0.000997	3.75E-05	-26.59316	0.0000
C	12.39562	0.009115	1359.967	0.0000

R-squared	0.278526	Mean dependent var	13.60859
Adjusted R-squared	0.278487	S.D. dependent var	0.945393
S.E. of regression	0.803035	Akaike info criterion	2.399236
Sum squared resid	35823.58	Schwarz criterion	2.399878
Log likelihood	-66641.97	Hannan-Quinn criter.	2.399436
F-statistic	7148.629	Durbin-Watson stat	0.445403
Prob(F-statistic)	0.000000		

Appendix 4. Regression result of Mincer model for urban

Dependent Variable: LOG(SALARY)
Method: Least Squares
Sample (adjusted): 1 104629
Included observations: 94800 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DURATION_OF_EDUC ATION	0.085175	0.000587	145.1328	0.0000
EXPERIENCES	0.059329	0.000859	69.05487	0.0000
EXPERIENCES^2	-0.001054	2.84E-05	-37.16766	0.0000
C	12.67961	0.007513	1687.661	0.0000

R-squared	0.261643	Mean dependent var	13.93109
Adjusted R-squared	0.261620	S.D. dependent var	0.892455
S.E. of regression	0.766878	Akaike info criterion	2.307064
Sum squared resid	55749.70	Schwarz criterion	2.307463
Log likelihood	-109350.8	Hannan-Quinn criter.	2.307185
F-statistic	11197.27	Durbin-Watson stat	0.431547
Prob(F-statistic)	0.000000		

Appendix 5. Regression result of Mincer model for rural

Dependent Variable: LOG(SALARY)
Method: Least Squares
Sample (adjusted): 1 81642
Included observations: 65463 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DURATION_OF_EDUC ATION	0.063995	0.000718	89.08144	0.0000
EXPERIENCES	0.040519	0.000999	40.57583	0.0000
EXPERIENCES^2	-0.000839	3.14E-05	-26.73507	0.0000
C	12.96716	0.008136	1593.837	0.0000

R-squared	0.134258	Mean dependent var	13.71905
Adjusted R-squared	0.134218	S.D. dependent var	0.845751
S.E. of regression	0.786949	Akaike info criterion	2.358755
Sum squared resid	40538.03	Schwarz criterion	2.359310
Log likelihood	-77201.58	Hannan-Quinn criter.	2.358927
F-statistic	3383.753	Durbin-Watson stat	0.277475
Prob(F-statistic)	0.000000		

Appendix 6. Regression result of Mincer model include sex and region control variables

Dependent Variable: LOG(SALARY)
Method: Least Squares
Sample (adjusted): 1 186271
Included observations: 160263 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DURATION_OF_EDUC ATION	0.078666	0.000444	177.0142	0.0000
EXPERIENCES	0.048796	0.000636	76.77221	0.0000
EXPERIENCES^2	-0.000891	2.05E-05	-43.38047	0.0000
SEX	-0.373379	0.003997	-93.42383	0.0000
REGION	-0.049432	0.003980	-12.41987	0.0000
C	12.95066	0.006136	2110.536	0.0000

R-squared	0.258245	Mean dependent var	13.84448
Adjusted R-squared	0.258222	S.D. dependent var	0.879871
S.E. of regression	0.757803	Akaike info criterion	2.283251
Sum squared resid	92030.02	Schwarz criterion	2.283624
Log likelihood	-182954.3	Hannan-Quinn criter.	2.283362
F-statistic	11158.81	Durbin-Watson stat	0.576009
Prob(F-statistic)	0.000000		

Appendix 7. Regression result of Mincer model for single

Dependent Variable: LOG(SALARY)
Method: Least Squares
Sample (adjusted): 1 37753
Included observations: 33105 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DURATION_OF_EDUC ATION	0.047615	0.001109	42.92901	0.0000
EXPERIENCES	0.047535	0.002114	22.48736	0.0000
EXPERIENCES^2	-0.001269	8.87E-05	-14.29937	0.0000
C	12.97510	0.013495	961.4996	0.0000

R-squared	0.065357	Mean dependent var	13.58847
Adjusted R-squared	0.065272	S.D. dependent var	0.785653
S.E. of regression	0.759580	Akaike info criterion	2.288018
Sum squared resid	19098.01	Schwarz criterion	2.289034
Log likelihood	-37868.43	Hannan-Quinn criter.	2.288343
F-statistic	771.5516	Durbin-Watson stat	0.224559
Prob(F-statistic)	0.000000		

Appendix 8. Regression result of Mincer model for married

Dependent Variable: LOG(SALARY)
Method: Least Squares
Sample (adjusted): 1 136233
Included observations: 116841 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DURATION_OF_EDUC ATION	0.082684	0.000506	163.3583	0.0000
EXPERIENCES	0.041938	0.000764	54.92748	0.0000
EXPERIENCES^2	-0.000694	2.42E-05	-28.66046	0.0000
C	12.85778	0.006329	2031.611	0.0000

R-squared	0.237508	Mean dependent var	13.94764
Adjusted R-squared	0.237489	S.D. dependent var	0.880092
S.E. of regression	0.768513	Akaike info criterion	2.311315
Sum squared resid	69005.30	Schwarz criterion	2.311646
Log likelihood	-135024.2	Hannan-Quinn criter.	2.311415
F-statistic	12131.17	Durbin-Watson stat	0.414302
Prob(F-statistic)	0.000000		

Appendix 9. Regression result of Mincer model for marital status (single and married)

Dependent Variable: LOG(SALARY)
Method: Least Squares
Sample (adjusted): 1 173986
Included observations: 149946 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DURATION_OF_EDUCATION	0.076837	0.000460	166.8565	0.0000
EXPERIENCES	0.043044	0.000715	60.23082	0.0000
EXPERIENCES^2	-0.000734	2.29E-05	-32.00472	0.0000
MARITAL_STATUS	0.245963	0.005186	47.43197	0.0000
C	12.66538	0.006577	1925.634	0.0000

R-squared	0.224536	Mean dependent var	13.86834
Adjusted R-squared	0.224516	S.D. dependent var	0.872937
S.E. of regression	0.768722	Akaike info criterion	2.311860
Sum squared resid	88605.27	Schwarz criterion	2.312191
Log likelihood	-173322.1	Hannan-Quinn criter.	2.311958
F-statistic	10853.90	Durbin-Watson stat	0.366883
Prob(F-statistic)	0.000000		

Appendix 10. Regression result of Mincer model for single male

Dependent Variable: LOG(SALARY)
Method: Least Squares
Sample (adjusted): 1 14667
Included observations: 13077 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DURATION_OF_EDUCATION	0.061587	0.001865	33.02633	0.0000
EXPERIENCES	0.049630	0.003547	13.99094	0.0000
EXPERIENCES^2	-0.001340	0.000173	-7.741120	0.0000
C	12.89154	0.022610	570.1669	0.0000

R-squared	0.090397	Mean dependent var	13.67006
Adjusted R-squared	0.090188	S.D. dependent var	0.777195
S.E. of regression	0.741321	Akaike info criterion	2.239539
Sum squared resid	7184.349	Schwarz criterion	2.241826
Log likelihood	-14639.22	Hannan-Quinn criter.	2.240303
F-statistic	433.0675	Durbin-Watson stat	0.232662
Prob(F-statistic)	0.000000		

Appendix 11. Regression result of Mincer model for single female

Dependent Variable: LOG(SALARY)
Method: Least Squares
Sample (adjusted): 1 23085
Included observations: 20028 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DURATION_OF_EDUCATION	0.039710	0.001375	28.87348	0.0000
EXPERIENCES	0.044789	0.002664	16.81573	0.0000
EXPERIENCES^2	-0.001171	0.000106	-11.08510	0.0000
C	13.01695	0.016771	776.1718	0.0000

R-squared	0.051586	Mean dependent var	13.53520
Adjusted R-squared	0.051444	S.D. dependent var	0.786592
S.E. of regression	0.766092	Akaike info criterion	2.305172
Sum squared resid	11752.04	Schwarz criterion	2.306751
Log likelihood	-23079.99	Hannan-Quinn criter.	2.305688
F-statistic	363.0458	Durbin-Watson stat	0.230998
Prob(F-statistic)	0.000000		

Appendix 12. Regression result of Mincer model for married male

Dependent Variable: LOG(SALARY)
Method: Least Squares
Sample (adjusted): 1 51035
Included observations: 45240 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DURATION_OF_EDUCATION	0.087141	0.000793	109.8553	0.0000
EXPERIENCES	0.034155	0.001138	30.01736	0.0000
EXPERIENCES^2	-0.000525	3.58E-05	-14.67426	0.0000
C	13.00123	0.010439	1245.424	0.0000

R-squared	0.252546	Mean dependent var	14.17854
Adjusted R-squared	0.252496	S.D. dependent var	0.812859
S.E. of regression	0.702784	Akaike info criterion	2.132554
Sum squared resid	22342.31	Schwarz criterion	2.133325
Log likelihood	-48234.38	Hannan-Quinn criter.	2.132797
F-statistic	5094.696	Durbin-Watson stat	0.465538
Prob(F-statistic)	0.000000		

Appendix 13. Regression result of Mincer model for married female

Dependent Variable: LOG(SALARY)
Method: Least Squares
Sample (adjusted): 1 85198
Included observations: 71601 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DURATION_OF_EDUCATION	0.074878	0.000652	114.7707	0.0000
EXPERIENCES	0.042939	0.001001	42.90462	0.0000
EXPERIENCES^2	-0.000723	3.19E-05	-22.70650	0.0000
C	12.83632	0.007915	1621.825	0.0000

R-squared	0.205355	Mean dependent var	13.80175
Adjusted R-squared	0.205322	S.D. dependent var	0.889672
S.E. of regression	0.793096	Akaike info criterion	2.374310
Sum squared resid	45034.55	Schwarz criterion	2.374823
Log likelihood	-84997.48	Hannan-Quinn criter.	2.374468
F-statistic	6167.459	Durbin-Watson stat	0.363735
Prob(F-statistic)	0.000000		

Appendix 14. Regression result of Mincer model for marital status (male)

Dependent Variable: LOG(SALARY)
Method: Least Squares
Sample (adjusted): 1 65703
Included observations: 58317 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DURATION_OF_EDUCATION	0.082813	0.000733	112.9798	0.0000
EXPERIENCES	0.036004	0.001080	33.33419	0.0000
EXPERIENCES^2	-0.000582	3.44E-05	-16.92662	0.0000
MARITAL_STATUS	0.352287	0.007794	45.19755	0.0000
C	12.68644	0.010258	1236.751	0.0000

R-squared	0.266989	Mean dependent var	14.06452
Adjusted R-squared	0.266938	S.D. dependent var	0.832461
S.E. of regression	0.712745	Akaike info criterion	2.160700
Sum squared resid	29622.81	Schwarz criterion	2.161469
Log likelihood	-62997.76	Hannan-Quinn criter.	2.160939
F-statistic	5309.824	Durbin-Watson stat	0.406797
Prob(F-statistic)	0.000000		

Appendix 15. Regression result of Mincer model for marital status (female)

Dependent Variable: LOG(SALARY)
Method: Least Squares
Sample (adjusted): 1 108283
Included observations: 91629 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DURATION_OF_EDUCATION	0.068897	0.000589	116.9624	0.0000
EXPERIENCES	0.043716	0.000932	46.90553	0.0000
EXPERIENCES^2	-0.000757	3.00E-05	-25.22558	0.0000
MARITAL_STATUS	0.187455	0.006785	27.62748	0.0000
C	12.70277	0.008494	1495.419	0.0000

R-squared	0.186058	Mean dependent var	13.74349
Adjusted R-squared	0.186023	S.D. dependent var	0.875144
S.E. of regression	0.789561	Akaike info criterion	2.365375
Sum squared resid	57119.00	Schwarz criterion	2.365890
Log likelihood	-108363.5	Hannan-Quinn criter.	2.365532
F-statistic	5236.061	Durbin-Watson stat	0.328086
Prob(F-statistic)	0.000000		

Appendix 16. Regression result of Mincer model for industrial 1

Dependent Variable: LOG(SALARY)
Method: Least Squares
Sample (adjusted): 1 40417
Included observations: 28513 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DURATION_OF_EDUCATION	0.053576	0.001333	40.20110	0.0000
EXPERIENCES	0.022592	0.001359	16.62298	0.0000
EXPERIENCES^2	-0.000622	3.90E-05	-15.95487	0.0000
C	13.12572	0.012760	1028.629	0.0000

R-squared	0.063330	Mean dependent var	13.58812
Adjusted R-squared	0.063232	S.D. dependent var	0.790908
S.E. of regression	0.765495	Akaike info criterion	2.303551
Sum squared resid	16705.76	Schwarz criterion	2.304710
Log likelihood	-32836.58	Hannan-Quinn criter.	2.303924
F-statistic	642.5191	Durbin-Watson stat	0.376968
Prob(F-statistic)	0.000000		

Appendix 17. Regression result of Mincer model for industrial 2

Dependent Variable: LOG(SALARY)
Method: Least Squares
Sample (adjusted): 1 5528
Included observations: 4598 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DURATION_OF_EDUC ATION	0.099789	0.002819	35.40037	0.0000
EXPERIENCES	0.052228	0.004414	11.83239	0.0000
EXPERIENCES^2	-0.001185	0.000170	-6.988599	0.0000
C	13.30343	0.028850	461.1252	0.0000

R-squared	0.253462	Mean dependent var	14.34730
Adjusted R-squared	0.252974	S.D. dependent var	0.868486
S.E. of regression	0.750638	Akaike info criterion	2.265083
Sum squared resid	2588.523	Schwarz criterion	2.270680
Log likelihood	-5203.426	Hannan-Quinn criter.	2.267053
F-statistic	519.9121	Durbin-Watson stat	0.907171
Prob(F-statistic)	0.000000		

Appendix 18. Regression result of Mincer model for industrial 3

Dependent Variable: LOG(SALARY)
Method: Least Squares
Sample (adjusted): 1 22621
Included observations: 20942 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DURATION_OF_EDUC ATION	0.103128	0.001341	76.91678	0.0000
EXPERIENCES	0.039926	0.001561	25.57539	0.0000
EXPERIENCES^2	-0.000887	5.31E-05	-16.68518	0.0000
C	12.60838	0.014571	865.2864	0.0000

R-squared	0.240819	Mean dependent var	13.72083
Adjusted R-squared	0.240710	S.D. dependent var	0.778589
S.E. of regression	0.678441	Akaike info criterion	2.062153
Sum squared resid	9637.395	Schwarz criterion	2.063672
Log likelihood	-21588.81	Hannan-Quinn criter.	2.062649
F-statistic	2213.909	Durbin-Watson stat	0.749401
Prob(F-statistic)	0.000000		

Appendix 19. Regression result of Mincer model for industrial 4

Dependent Variable: LOG(SALARY)
Method: Least Squares
Sample (adjusted): 1 742
Included observations: 723 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DURATION_OF_EDUC ATION	0.091390	0.008343	10.95459	0.0000
EXPERIENCES	0.055564	0.009336	5.951322	0.0000
EXPERIENCES^2	-0.000606	0.000344	-1.762327	0.0784
C	12.79541	0.104632	122.2892	0.0000

R-squared	0.329620	Mean dependent var	14.27486
Adjusted R-squared	0.326823	S.D. dependent var	0.785193
S.E. of regression	0.644230	Akaike info criterion	1.963996
Sum squared resid	298.4083	Schwarz criterion	1.989353
Log likelihood	-705.9844	Hannan-Quinn criter.	1.973783
F-statistic	117.8420	Durbin-Watson stat	1.653334
Prob(F-statistic)	0.000000		

Appendix 20. Regression result of Mincer model for industrial 5

Dependent Variable: LOG(SALARY)
Method: Least Squares
Sample (adjusted): 1 16311
Included observations: 8596 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DURATION_OF_EDUC ATION	0.048863	0.001790	27.29704	0.0000
EXPERIENCES	0.029892	0.002232	13.38999	0.0000
EXPERIENCES^2	-0.000614	7.74E-05	-7.935199	0.0000
C	13.42325	0.018868	711.4312	0.0000

R-squared	0.106556	Mean dependent var	13.98664
Adjusted R-squared	0.106244	S.D. dependent var	0.638629
S.E. of regression	0.603752	Akaike info criterion	1.829157
Sum squared resid	3131.922	Schwarz criterion	1.832442
Log likelihood	-7857.719	Hannan-Quinn criter.	1.830278
F-statistic	341.5721	Durbin-Watson stat	0.671752
Prob(F-statistic)	0.000000		

Appendix 21. Regression result of Mincer model for industrial 6

Dependent Variable: LOG(SALARY)
Method: Least Squares
Sample (adjusted): 1 33706
Included observations: 32808 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DURATION_OF_EDUC ATION	0.062702	0.001100	56.99896	0.0000
EXPERIENCES	0.056714	0.001421	39.90611	0.0000
EXPERIENCES^2	-0.001312	4.90E-05	-26.77341	0.0000
C	12.91235	0.012519	1031.398	0.0000

R-squared	0.122636	Mean dependent var	13.70909
Adjusted R-squared	0.122556	S.D. dependent var	0.772295
S.E. of regression	0.723424	Akaike info criterion	2.190480
Sum squared resid	17167.72	Schwarz criterion	2.191504
Log likelihood	-35928.63	Hannan-Quinn criter.	2.190807
F-statistic	1528.430	Durbin-Watson stat	0.555483
Prob(F-statistic)	0.000000		

Appendix 22. Regression result of Mincer model for industrial 7

Dependent Variable: LOG(SALARY)
Method: Least Squares
Sample (adjusted): 1 12769
Included observations: 11760 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DURATION_OF_EDUC ATION	0.068747	0.001784	38.53209	0.0000
EXPERIENCES	0.038144	0.002265	16.83932	0.0000
EXPERIENCES^2	-0.000957	7.72E-05	-12.40311	0.0000
C	13.08470	0.019932	656.4779	0.0000

R-squared	0.128553	Mean dependent var	13.86511
Adjusted R-squared	0.128331	S.D. dependent var	0.738014
S.E. of regression	0.689034	Akaike info criterion	2.093287
Sum squared resid	5581.366	Schwarz criterion	2.095795
Log likelihood	-12304.53	Hannan-Quinn criter.	2.094129
F-statistic	578.0713	Durbin-Watson stat	0.682100
Prob(F-statistic)	0.000000		

Appendix 23. Regression result of Mincer model for industrial 8

Dependent Variable: LOG(SALARY)
Method: Least Squares
Sample (adjusted): 1 5462
Included observations: 5390 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DURATION_OF_EDUC ATION	0.116008	0.002805	41.36071	0.0000
EXPERIENCES	0.058683	0.003943	14.88170	0.0000
EXPERIENCES^2	-0.001028	0.000156	-6.586324	0.0000
C	12.45440	0.039400	316.1047	0.0000

R-squared	0.301507	Mean dependent var	14.21962
Adjusted R-squared	0.301118	S.D. dependent var	0.842673
S.E. of regression	0.704468	Akaike info criterion	2.137994
Sum squared resid	2672.938	Schwarz criterion	2.142886
Log likelihood	-5757.894	Hannan-Quinn criter.	2.139702
F-statistic	774.9615	Durbin-Watson stat	1.205639
Prob(F-statistic)	0.000000		

Appendix 24. Regression result of Mincer model for industrial 9

Dependent Variable: LOG(SALARY)
Method: Least Squares
Sample (adjusted): 1 48714
Included observations: 46933 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DURATION_OF_EDUC ATION	0.090044	0.000935	96.31830	0.0000
EXPERIENCES	0.086286	0.001375	62.73542	0.0000
EXPERIENCES^2	-0.001333	4.40E-05	-30.27898	0.0000
C	12.26420	0.013026	941.5370	0.0000

R-squared	0.377902	Mean dependent var	14.01985
Adjusted R-squared	0.377862	S.D. dependent var	1.030635
S.E. of regression	0.812920	Akaike info criterion	2.423718
Sum squared resid	31012.54	Schwarz criterion	2.424464
Log likelihood	-56872.18	Hannan-Quinn criter.	2.423953
F-statistic	9502.557	Durbin-Watson stat	0.654948
Prob(F-statistic)	0.000000		

Appendix 25. Regression result of Mincer model for industrial classification

Dependent Variable: LOG(SALARY)
Method: Least Squares
Sample (adjusted): 1 186271
Included observations: 160263 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DURATION_OF_EDUC ATION	0.084054	0.000508	165.3277	0.0000
EXPERIENCES	0.055739	0.000641	86.88869	0.0000
EXPERIENCES^2	-0.001018	2.07E-05	-49.24427	0.0000
INDUSTRIAL_1	0.088856	0.006535	13.59653	0.0000
INDUSTRIAL_2	0.829932	0.012043	68.91629	0.0000
INDUSTRIAL_3	0.096992	0.006672	14.53751	0.0000
INDUSTRIAL_4	0.359809	0.028581	12.58899	0.0000
INDUSTRIAL_5	0.398450	0.009240	43.12405	0.0000
INDUSTRIAL_6	0.118809	0.005907	20.11488	0.0000
INDUSTRIAL_7	0.244646	0.008150	30.01668	0.0000
INDUSTRIAL_8	0.303590	0.011003	27.59140	0.0000
C	12.58160	0.008039	1565.099	0.0000

R-squared	0.249112	Mean dependent var	13.84448
Adjusted R-squared	0.249061	S.D. dependent var	0.879871
S.E. of regression	0.762468	Akaike info criterion	2.295562
Sum squared resid	93163.06	Schwarz criterion	2.296309
Log likelihood	-183934.8	Hannan-Quinn criter.	2.295784
F-statistic	4833.133	Durbin-Watson stat	0.615759
Prob(F-statistic)	0.000000		

Appendix 26. Regression result of Mincer model for DKI Jakarta

Dependent Variable: LOG(SALARY)
Method: Least Squares
Sample (adjusted): 1 4564
Included observations: 4427 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DURATION_OF_EDUCATION	0.113734	0.002640	43.08517	0.0000
EXPERIENCES	0.049434	0.003542	13.95560	0.0000
EXPERIENCES^2	-0.000727	0.000121	-5.980802	0.0000
C	12.69870	0.033580	378.1613	0.0000

R-squared	0.344424	Mean dependent var	14.20806
Adjusted R-squared	0.343979	S.D. dependent var	0.841356
S.E. of regression	0.681457	Akaike info criterion	2.071737
Sum squared resid	2053.970	Schwarz criterion	2.077515
Log likelihood	-4581.789	Hannan-Quinn criter.	2.073775
F-statistic	774.5793	Durbin-Watson stat	1.487585
Prob(F-statistic)	0.000000		

Appendix 27. Regression result of Mincer model for male in urban areas

Dependent Variable: LOG(SALARY)
Method: Least Squares
Sample (adjusted): 1 67538
Included observations: 59880 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DURATION_OF_EDUCATIO N	0.082502	0.000734	112.4495	0.0000
EXPERIENCES	0.051785	0.001018	50.88358	0.0000
EXPERIENCES^2	-0.000933	3.33E-05	-27.99943	0.0000
C	12.87477	0.009292	1385.589	0.0000

R-squared	0.241849	Mean dependent var	14.05700
Adjusted R-squared	0.241811	S.D. dependent var	0.834642
S.E. of regression	0.726756	Akaike info criterion	2.199616
Sum squared resid	31625.01	Schwarz criterion	2.200217
Log likelihood	-65852.51	Hannan-Quinn criter.	2.199803
F-statistic	6366.783	Durbin-Watson stat	0.416817
Prob(F-statistic)	0.000000		

Appendix 28. Regression result of Mincer model for male in rural areas

Dependent Variable: LOG(SALARY)
Method: Least Squares
Sample (adjusted): 1 56897
Included observations: 44827 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DURATION_OF_EDUCATIO N	0.058530	0.000855	68.43332	0.0000
EXPERIENCES	0.032784	0.001119	29.30059	0.0000
EXPERIENCES^2	-0.000678	3.53E-05	-19.21251	0.0000
C	13.19134	0.009341	1412.258	0.0000

R-squared	0.116762	Mean dependent var	13.85294
Adjusted R-squared	0.116703	S.D. dependent var	0.774731
S.E. of regression	0.728122	Akaike info criterion	2.203393
Sum squared resid	23763.44	Schwarz criterion	2.204171
Log likelihood	-49381.76	Hannan-Quinn criter.	2.203638
F-statistic	1975.160	Durbin-Watson stat	0.250516
Prob(F-statistic)	0.000000		

Appendix 29. Regression result of Mincer model for female in urban areas

Dependent Variable: LOG(SALARY)
Method: Least Squares
Sample (adjusted): 1 37092
Included observations: 34921 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DURATION_OF_EDUCATIO N	0.092045	0.000926	99.41213	0.0000
EXPERIENCES	0.060894	0.001483	41.06822	0.0000
EXPERIENCES^2	-0.000972	4.96E-05	-19.61378	0.0000
C	12.37724	0.012018	1029.853	0.0000

R-squared	0.306935	Mean dependent var	13.71508
Adjusted R-squared	0.306876	S.D. dependent var	0.945616
S.E. of regression	0.787264	Akaike info criterion	2.359608
Sum squared resid	21641.02	Schwarz criterion	2.360577
Log likelihood	-41195.94	Hannan-Quinn criter.	2.359917
F-statistic	5154.525	Durbin-Watson stat	0.487125
Prob(F-statistic)	0.000000		

Appendix 30. Regression result of Mincer model for female in rural areas

Dependent Variable: LOG(SALARY)
Method: Least Squares
Sample (adjusted): 1 24744
Included observations: 20635 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DURATION_OF_EDUCATIO N	0.078319	0.001195	65.54212	0.0000
EXPERIENCES	0.048635	0.001853	26.24561	0.0000
EXPERIENCES^2	-0.000941	5.76E-05	-16.33504	0.0000
C	12.49378	0.014439	865.2771	0.0000

R-squared	0.200304	Mean dependent var	13.42837
Adjusted R-squared	0.200187	S.D. dependent var	0.917292
S.E. of regression	0.820355	Akaike info criterion	2.442034
Sum squared resid	13884.29	Schwarz criterion	2.443572
Log likelihood	-25191.69	Hannan-Quinn criter.	2.442537
F-statistic	1722.514	Durbin-Watson stat	0.386574
Prob(F-statistic)	0.000000		

Appendix 31. SAK 12-AK Questioner

BPS Statistics Indonesia

SAK 12-AK
One Set for
BPS Regency

THE NATIONAL LABOR FORCE SURVEY 2012

INFORMATION OF HOUSEHOLD MEMBERS

CONFIDENTIAL **QUARTER** ☐

I. LOCATION IDENTIFICATION

1	PROVINCE		☐☐
2	REGENCY/MUNICIPALITY *)		☐☐
3	SUB-REGENCY		☐
4	VILLAGE/POLITICAL DISTRICT ADDMINISTEREDBY LURAH *)		☐
5	VILLAGE CATEGORY	*URBAN -1 RU RAL - 2*	
6	CENCUS BLOCK CODE		
7	SERIAL NUMBER OF QUARTERL Y SAMPLED SAKERNAS		☐☐☐☐
8	SERIAL NUMBER OF SAMPLE HOUSEHOLD {SAK11.DSRT BLOCK III COLUMN (1)}		☐☐
9	NAME OF HOUSEHOLD HEAD		

II. SUMMARY

1	NUMBER OF HOUSEHOLD MEMBERS	☐☐
2	NUMBER OF HOUSEHOLD MEMBERS AGED 10 YEARS AND OVER	☐☐

III . INFORMATION OF FIELD WORKER

1	A. ENUMERATOR CODE:		☐☐ ☐
	B. ENUMERATOR HANDPHONE NUMBER:	☐☐☐☐☐☐☐☐☐☐☐☐	
2	NAME OF ENUMERATOR:	DATE OF ENUMERATION:	SIGNATURE: .....
3	A. NAME OF SUPERVISOR:	DATE OF SUPERVISION:	SIGNATURE: .....
	B. SUPERVISOR HANDPHONE N UMBER:	☐☐☐☐☐☐☐☐☐☐☐☐	

**) Please, crossed it out the inapplicable one*

IV. LIST OF HOUSEHOLD MEMBERS

Number	Name of Household Members	Relationship to Head of Household *(code)*	Sex *Male1 Female 2*	Age *(Years)*	Only for Those Aged 10 Years and Over	
					Marital Status *(code)*	School Participation *(code)*
(1)	(2)	(3)	(4)	(5)	(6)	(7)
01						
02						
03						
04						
05						
06						
07						
08						
09						
10						
11						
12						
13						
14						
15						

Codes for Column (3)
Relation to Head of Household

1 Household Head
2 Wife or husband
3 Son or daughter
4 Son/Daughter in-law
5 Granchild
6 Parent, Father/ Mother in-law
7 Others Relative
8 Housemaid
9 Others

Codes for Column (6)
Marital Status

1 Single
2 Married
3 Divorced
4 Widowed

Codes for Column (7)
School Participation

1 No Schooling
2 In Formal School
3 In Non Formal School
4 Not In School Anymore

1. After recording all of the household members in column (2) and column (3), please confirm to the respondent once more whether anyone such as : housemaid(s), driver, gardener, baby sitter and others on the same context, whom living in that household. If you found them, please added those names on the list.
2. Please confirm by asking whether anyone name was missed out. As an example: new born babies, and members of household who have been away for less than 6 months. If you found them, please added those names on the list.
3. If there is a household member who is leaving for less than 6 months but intended to move or would leaving home for 6 months and more is not counted as a household member, take he/she out from the list.
4. Finally, reordering the serial number in column (1).

V. CHARACTERISTICS OF HOUSEHOLD MEMBER AGED 10 YEARS AND OVER

Name: …….. Serial No: …… ……..

Informant:

V. A. EDUCATION

1. a. What is (NAME) the highest level of educational attained?

NO SCHOOLING	1		GENERAL SENIOR HIGH SCHOOL	8
INCOMPLETED PRIMARY SCHOOL	2		VOCATIONAL SENIOR HIGH SCHOOL	9
PRIMARY SCHOOL	3		PACKAGE C	10
PACKAGE A	4	Q1c	DIPLOMA I/II	11
GENERAL JUNIOR HIGH SCHOOL	5		DIPLOMA III	12
VOCATIONAL JUNIOR HIGH SCHOOL	6		DIV/S1	13
PACKAGE B	7		S2/S3	14

Filled in by Supervisor

b. Field of study:
……

c. Has (NAME) ever had training/course and got **certificate**?

Yes 1 No 2 → ***SUB BLOCK V.B***

d. If "Yes", please stated the two main training/ courses based on priority use:

Filled in by Supervisor

1

2

V.B. ACTIVITY DURING THE PREVIOUS WEEK

2. a. During the previous week?

	Yes	*No*
1. Did (NAME) go to work?	*1*	*2*
2. Did (NAME) go to school?	*1*	*2*
3. Did (NAME) do housekeeping?	*1*	*2*
4. Did (NAME) have others activity, exclude 'personal action' ?	*1*	*2*

(If Q2.a.1 through Q2a.4=2, go to Q3)

b. According to the number of "yes" answered above, which activity was mostly engaged the time during the previous week?

1 → **Q4** *2 3 4*

(If Q2.a.1=1, go to Q4)

3. Did (NAME) have a job but temporarily not working [1] during the previous week?

Yes 1 No 2

4. Is (NAME) looking for a job?

Yes 1 No 2

5. Have (NAME) established a new business/firm during previous week?

Yes 1 No 2

Asked if Q4 = 2 and Q5 = 2

6. The main reason of not looking for a job/establishing a new business/firm:

Discouraged [2]	*1*
Have a job but has not started yet	*2*
Attending school	*3*
Housekeeping	*4*
Already have a job	*5*
Sufficient income	*6*
Unable to do work	*7* → **Q23**
……Others	*8*

(COMPLETELY WROTE)

7. If offered a job, would (NAME) accept it?

YES *1* NO *2*

(If Q2a.1 = 2 and Q3 = 2, go to Sub Block VE)

Q8 TO Q18 are just for household member who employed (Q2a.1 = 1 or Q3 = 1)

8. a. Total working day(s): …… .....day(s)

b. Total number of working hours of **all jobs** during the previous week:

Mon	Tue	Wed	Thr	Fr	Sat	Sun	Total

V.C. MAIN JOB

9. What is (NAME) main industry during the previous week of jobs?

……

……

Filled in by Supervisor

(COMPLETELY WROTE)

10. What is (NAME) main occupation during the previous week?

……

……

Filled in by Supervisor

(COMPLETELY WROTE)

11. What is (NAME) total number of hours worked of a main job during the previous week? ..... *Hours*

12. What is (NAME) main employment status during the previous week:

Own account worker	*1*	
Employer assisted by temporary workers/ unpaid worker	*2*	**Q14**
Employer assisted by permanent workers	*3*	
Employee	*4*	
Casual employee **in agriculture**	*5*	
Casual employee **not in agriculture**	*6*	
Unpaid workers	*7* → **Q15**	

13. How much do (NAME) usually get a salary/wage/income of a main job per month?

a. Cash : Rp. ……

b. Goods: Rp. ……

Asked if Q12 = 1, 2, 3, or 4

14. How long have (NAME) been working for the main job?

YEAR(S) ..... *MONTH(S)*

1) Temporarily not working: if Q3=1, Q12 cannot be coded as 5 or 6 or 7.

2) Q6 code 1: A reason for the looking job several times but do not obtain the job. So that they feel will not have a job or due to situation/condition/climate

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