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**THE EXPANSION OF NINE-YEAR COMPULSORY EDUCATION IN  
INDONESIA: EFFECTS ON THE EDUCATION MOBILITY, 1970-1997**

A Thesis in

Educational Theory and Policy

by

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## ABSTRACT

After independence from 350 years of colonial domination mainly by Dutch, the new government made a commitment to equality of education. This study focuses on a series of education policies on spreading nine-year compulsory education by Soeharto's New Order government. They include: (1) 1973-1978 School Building Program, (2) 1979-1984 Open Junior High School Program, (3) 1984 compulsory initiative for six-year elementary education, (4) 1989 Education Law on nine-year compulsory education, and (5) 1994 emphasis on three-year lower secondary education.

Can social engineering like education policies in particular eliminate educational stratification or as Pitirim Sorokin proposes that there is no trend toward either an increase or decrease of social mobility? The purpose of this study is to provide an insight into this question by examining the effects of a series Indonesian basic education policies on reducing education inequality based on an individual's social origins using the data from the Indonesian Family Life Survey 1997. In addition, this study is also interested in exploring the gender disparities in basic educational attainment for such an Islam-dominant country. Are Muslim girls backward in schooling as commonly perceived?

The results show that over forty-three years period of time, Indonesian children's basic educational attainment in terms of primary school attendance, primary school completion given primary school attendance and junior high school attendance given primary school completion increased. The relatively outstanding changes were consistent with the goals of the state's educational policies accompanied with government direct financial investment or corresponded to the country's economic change. The effects of family background (except number of rooms and mother's education) on the child's educational attainment at the primary level had

disappeared for the most recent cohort but its effects on the transition to junior high school demonstrated no trend of either increase or decrease. The gender disparities in educational attainment at the primary level had disappeared but the advantage of boys at the transition to junior high school was remarkable constancy. Once the girls had attended the junior high school, they were even more likely than the boys to complete the school for the most recent cohorts because of more competitive for girls at the entrance to junior high school and more working opportunities for boys in the labor market. Sometimes Islamic girls were most disadvantageous at certain level of basic education and for certain cohort compared with non-Islamic girls, Islamic boys and non-Islamic boys but it was not always the case.

The findings suggest that the state education policies with real financial investment on the purpose of expanding educational opportunities would increase people's educational attainment. However, even if the expansion of an educational system generally decreases inequalities at particular points of school transition, inequality persists at the other points of transition. The government's efforts on expanding the educational system have not eliminated educational stratification but virtually result in no real change in the structured inequality inherent in differences in family backgrounds. Gender disparities in basic education did not differ for Islam and non-Islam in most cases. Even in the few cases when Islamic girls were assured to be backward, the reasons for the backward cannot be simply attributed to the belief of Islam. They are intertwined with social class and ethnicity issues standing behind the religious affiliation of Islam.

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# CHAPTER I

## Introduction

### *The Purpose of the Study*

The distribution of educational opportunities in a society determines its basic social stratification to a large extent. As Deng and Treiman (1997: 391) point out, “Education is the engine of social mobility in modern societies. In all industrialized or industrializing societies for which we have data, the central answer to the question ‘who gets ahead’ is ‘those who get educated’. The question of who get opportunities for education is therefore central to the study of social stratification.

Despite the general impression that the selective process in the modern education system is mainly based on merits or ability, many studies indicate that characteristics of social status that have nothing to do with merits or ability still exert important influence on the educational opportunity enjoyed by people, especially the connections between family background and educational attainment which are almost ubiquitous in all societies. With the advent of the 20th century, one of the objectives of educational reforms conducted in many countries has been to weaken these connections, yet almost without exception these connections remain. The theory of cultural reproduction developed by Pierre Bourdieu provides a valid interpretation for the way class status is reproduced by the education system and how it is transmitted between generations.

Can social engineering like education policies in particular eliminate educational stratification or as Pitirim Sorokin proposes that there is no trend toward either an increase or decrease of social mobility? The purpose of this study is to provide an insight into this question by examining the effects of a series Indonesian basic education policies on reducing education inequality based on an individual’s social origins using the data from the Indonesian Family Life

Survey 1997. In addition, this study is also interested in exploring the gender disparities in basic educational attainment for such an Islam-dominant country. Are Muslim girls backward in schooling as commonly perceived?

### *Research Questions*

The following research questions facilitate a systematic approach to completing the purpose of this study.

- 1) How did the educational attainment in terms of the transitions of primary and junior high school change over time? Were the changes consistent with the goals of the relative state's policies on spreading nine-year compulsory education from 1973-1994?
- 2) How did the effects of family background on educational attainment change over time? Did the state's educational policies on spreading the nine-year compulsory education decrease the effects of family background on the child's basic educational attainment?
- 3) What was the girl's situation in basic educational attainment in such an Islam-dominant society over forty-three years?

### *Country Briefing*

According to the 2004 updated data by the U.S. Census Bureau, Indonesia is the world's fourth most populous nation followed by China, India and United States. More than 238,000,000 people live across the large chain of islands that stretches more than 5,000 kilometers from east

to west and comprises more than 7.9 million square kilometers of land and sea and some 13,667 islands (Frederick and Worden 1993).

Although Indonesia adopted the western structure of government after independence with the separated powers into executive, legislative, and judicial branches, it was essentially an autocratic country until 1990s, emphasizing on consensus, unity and controlled political development. Pancasila was set forth as the state philosophy. Any other political ideologies were considered illegal. The five principles of Pancasila are: 1) belief in one supreme God; 2) humanitarianism; 3) nationalism expressed in the unity of Indonesia; 4) consultative democracy; 5) social justice (Indonesia Handbook 2000).

Indonesia had 350 years of history as a colony. It was occupied by a number of colonists. The spice trade was first dominated by Portuguese and then by the Dutch East India Company until 1799. After that, the Netherlands government controlled large portions of the Indonesian archipelago until 1942 when Japan commandeered the colony in the World War II to forge a Greater Asian Co-prosperity Sphere. The extent and shape of Indonesia today mostly inherited from the Netherlands East Indies that the Dutch colonial forces conquered over more and more islands between the early 17<sup>th</sup> and early 20<sup>th</sup> centuries to form (Soedijarto, Moleong etc. 1980). Indonesia became an independent state during 1945-49 after about three and half a century of colonial domination. As a nation, Indonesia has experienced different political experiments such as parliamentary democracy, state-controlled, leftist theories of government and since 1965, and a military-run regime of technocrats emphasizing rapid economic development (Kipp and Rodgers 1987).

One of the startling features of Indonesia is its social variety and complexity. Indonesia has over 300 ethnic groups whose members speak at least 669 distinct languages and over 1,100

different dialects in addition to Indonesian, the national tongue. Political systems vary from Western democracy of Central Java to the egalitarian communities of hunter-gatherers of Sumatran jungles; economic patterns vary from rudimentary slash-and-burn agriculture to highly sophisticated computer microchip assembly plants; living arrangements of Indonesians vary from extended families living in isolated bamboo longhouses to nuclear families in urban high-rise apartment complexes (Frederick and Worden 1993). Religion is also an outstanding component of social complexity and conflict. Major world religions – Islam, Christianity, Buddhism and Hinduism – are all represented in this world’s largest archipelago. Indonesia possesses the world’s largest Muslim population (87% of the population is Muslim) and yet is not an Islamic state. Muslim still remains a religious practice but not a political force in this country. The unofficially leading position of Muslim and the continuing growing of Christianity make some Muslims unsatisfied (Ricklefs 2001). Tensions and conflicts among different religions become one of the major sources of social turbulence.

Indonesia is a highly stratified society (Frederick and Worden 1992). The definition of social class is also a complex issue. It is hard to define it in a simple term of ethnicity, economic status, religious affiliation or political power. The upper class of the society consists of powerful generals and Chinese capitalists (cukong). The lower class is basically composed of all the poor people from different social background such as peasantry, small landowners, some orthodox Muslim and indigenous people. Between the upper and lower class “lay a complex mosaic of middle-class groups” (ibid: 87). They “united not by any political vision, economic interests, ethnic identification or even income levels, but by patterns of consumption” (ibid).

Indonesia’s social complexity partly derives from its historical experience. The chain of islands was located along a number of ancient trade routes linking India and China and later,

connecting Europe and the Spice Islands (the Moluccas of Eastern Indonesia). Traders speaking different languages and with different ethnicity, religion and cultural background communicated and exchanged their various cultures along side with doing business.

Indonesia's variation in culture has also been influenced by its geographic characteristics (Kipp and Rodgers 1987). Indonesia is a territory of thousands of islands which connects the Indian Ocean and the Pacific Ocean and bridges the mainland Asia and Australia. The sea area is four times greater than its land area while the land area is generally covered by thick tropical rain forests as well as volcanoes (Indonesia Year Book 1996-97). The Indonesian peoples, especially those in the less populous, more ethnically diverse islands of Outer Indonesia (the bulk of the country's land area excluding Java, Bali, and Madura), developed in isolation because they were separated from one another by seas or mountain ranges that prevented easy contact.

Social diversity and physical segregation often put such a paradisiacal country blessed with rich natural resources into a tight spot by deep racial divides and religious warring. Understanding and tolerance among different social groups has always been a big issue for the Indonesian society. Several generations of the Indonesian government after Independence have been struggling for the motto of Indonesians – “unity through diversity” (*Bhinneka Tunggal Ika*). Besides the central government's direct projects on extending its influence in the outlying ethnic homelands (Kipp and Rodgers 1987), population mobility, increased urbanization as well as the improved technology such as a satellite system bringing television broadcasts into previously remote areas have exposed Indonesians to the varieties of their nation's culture.

Mass education accompanied by a series of Law on the compulsory education and by the extension of the national public school system was also another important path to foster

Indonesian national identity. Indonesians no matter where they come from, which religion they believe, which social class they belong to and which language they speak, all swear loyalty to the Indonesian state in school and by attending school, learn the Pancasila, the state philosophy, among which nationalism expressed in the unity of Indonesia is one of its principles.

### *Indonesia's Educational System*

The current Indonesia's education system is based on Law No. 2 of 1989. According to this Law, "the role of the national education system is to attempt to form genuine Pancasila citizens as development agents of high quality with the ability to be independent and provide support for the development of Indonesian society, the nation and country" (Indonesian Embassy London 2000). The national education system is organized through two channels: in-school education (formal education) and out-of-school education (non-formal education). The school system in Indonesia is shown in Figure 1.1. School education is available since Kindergarten for children between 5 and 6. Attendance at pre-school education is not a prerequisite for entry into primary school. Basic education includes 6 years in primary school for children between 7 and 12, and 3 years in lower secondary school for children aged 13-15. After that, another 3 years of secondary education is in proceeding before pursuing higher learning in colleges and universities and other institutes. In addition to the formal schools, Indonesia has also developed a variety of non-formal education programs for the purpose of its economic-development plans. Out-of-school education programs were targeted at "increasing adult literacy, providing out-of-school primary and secondary education for school dropouts, improving community health, encouraging family planning, training adults in vocational skills and in ways of operating their won businesses and improving agricultural practices through radio broadcasts" (Thomas 1988: 361).



**Figure 1.1**

22	Higher Education	Islamic Doctorate Program (S3)	Doctorate Program (S3)	Specialist II Program (SP II)			
21		Islamic Masters Program	Masters Program (S2)	Specialist I (SP I)			
20		Islamic Graduate Program (S1)	Graduate Degree Program (S1)	Diploma 4 Program (D4)	Diploma 3 Program (D3)	Diploma 2 Program (D2)	Diploma 1
19							
18	Secondary Education	Islamic Upper Secondary School		General Upper Secondary School	Vocational Upper Secondary School		
17		Islamic Lower Secondary School		Lower Secondary School			
16		Islamic Primary School		Primary School			
15	Basic Education	Islamic Kindergarten		Kindergarten			
14							
13							
12							
11							
10							
9	Pre-School						
8							
7							
6							
5							

School System in Indonesia, Law No. 2 1989

Source: Indonesia Embassy London, UK. 2000. "Education System in Indonesia" at [http://www.indonesianembassy.org.uk/education\\_system.html](http://www.indonesianembassy.org.uk/education_system.html).

Indonesia's education system, from kindergartens through universities, is a centralized system directed by the central education authority in the nation's capital of Jakarta. However, the administration of education is divided into two separate government departments on the basis of two different types of school: secular and Islamic schools. Generally speaking, secular schools, public or private, which include private schools sponsored by Christian societies are under the jurisdiction of the Department of Education and Culture (about 85% of total enrollment). The remaining about 15% of total enrollment is in public or private Islamic schools, supervised by the Department of Religious Affairs (Thomas 1988; Frederick and Worden 1993). The curricula in school also reflect the two dominant educational streams of the secular and Islamic. Schools under the Department of Education and Culture follow the Dutch tradition of offering secular subjects as reading, writing, mathematics, natural sciences, social sciences, foreign language and vocational studies. Schools under the Department of Religious Affairs have two main types. One is the traditional Islamic schools in which students learn Arabic, the sayings of the Prophet Muhammad and Islamic law and traditions. The other is the *madrasah*, the modern Islamic schools, which combine the secular and Islamic subjects and are encouraged by the Department of Religious Affairs. In secular schools, strong emphasis is placed on the Pancasila, the nation's five key philosophical principles. The major language of instruction in school is Bahasa Indonesia (also called Indonesian), a version of Malay spoken in Malaysia. Local languages are used as the media of instruction in the first two primary grades and taught as subjects in upper grades. Such a pattern of instruction is another way to promote the national motto of "unity in diversity" (Thomas 1988).

## *Policy Changes on Basic Education Before the Soeharto's New Order*

*A Traditional Colonial Age (before 1900)* – The first schools were established by the priests who came to the Spice Islands with the Portuguese and Spanish in the 16<sup>th</sup> century to spread the Catholic religion and also teach some simple reading, writing and arithmetic to children of the upper-class natives. After the Dutch defeated the Portuguese and Spanish, they established their first schools in the early 17<sup>th</sup> century to give instruction to the children of the prominent native families in reading, writing, praying and Protestant Christian doctrine instead of Catholicism. Over the next two centuries, in spite of the Dutch assuming control over more and more sections of the islands, the increase in the supply of schools was slow. Basically, the Dutch had no interest in universal education. The objective of schools was to provide education to children of locally employed European and Eurasian families and also children of native aristocratic elite (Soedijarto, Moleong, ect. 1980). In fact, even for the *bupatis* (the highest level of the aristocratic regional elite), the Dutch had never been interested in educating them in the real sense because the *bupatis* were only assumed to play their traditional status as feudal indigenous officials and leaders of their society (Ricklefs 2001). Not until the mid-19<sup>th</sup> century did the Dutch colonial government begin to give serious attention to furnishing secular education for the general population of Indonesians in consider of the demand for filling the new jobs in government offices and administrative services. In 1867, a colonial department of education was established (Soedijarto, Moleong, ect. 1980). Schools originally established only for the sons of the higher elite now also took students from the sons of lower officials or even from those outside the ranks of the indigenous aristocracy. Besides, these schools took on a more vocational character with adding the courses in law, bookkeeping and other administrative skills (Ricklefs 2001).

*A New Colonial Age (1900-1942)* – The early of the twentieth century witnessed a new colonial age initiated by the Ethical Policy. Under this policy, the focus of Dutch colonial rule switched from the exploitation of Indonesia toward the concerns for the welfare of Indonesians. The humanitarian concerns had a root in economic advantage for the colonial government. As the modern enterprises developed in the islands, skilled local labor was needed. Also, as a potential market, a rising of living standards in Indonesia was required. As Ricklefs (2001: 193) indicates, “Business interests therefore supported more intensive colonial involvement in the causes of peace, justice, modernity and welfare. The humanitarians justified what the businessmen expected to be profitable, and the Ethical policy was born”. Under the influence of this policy, a great deal of effort was put into education and the number of schools for the common people began to grow.

All supporters of the Ethical Policy favored an increase in education for Indonesia but they could not agree on a basic question – what kind of education and for whom (Ricklefs 2001). J. H. Abendanon, the first ‘Ethical’ director of education (1900-5), favored an elitist approach, which is a kind of more European-style education in the Dutch language. He and his supporters wanted to produce a grateful and cooperative Westernized Indonesian elite who could take over much of the work of Dutch civil servants. The objective of such education was to reduce Dutch administrative expenses, restrain Islamic fanaticism and ultimately create an inspiring example for lower levels of Indonesian society. Under Abendanon’s education policy of elitist approach, two types of school, OSVIA (Training schools for native officials) and STOVIA (Training schools for native doctors) were established. A necessary prerequisite for admission to OSVIA and STOVIA was the completion of the European lower school, which had been open to Indonesians since 1891. Aristocratic status was no longer necessary for an entrant but the fees

for attending these schools were expensive. Abendanon widened the opportunities for non-aristocratic Indonesians to attend OSVIA and STOVIA by policies such as abolishing the fees for parents with income below f.50 per month (Ricklefs 2001).

On the contrary, Governor-General van Heutsz (1904-9) and Minister of Colonies Dirk Fock (1905-8) favored a mass approach that emphasized more basic and practical education in vernacular languages for lower levels of Indonesian society. During van Heutsz and Fock's period, the idea of mass education received more encouragement. The most significant educational reforms happened in the old two-class primary school system which had been accessible to Indonesians on a very small scale since the late of 19<sup>th</sup> century. The First Class schools were designed for the upper class Indonesian while the second-class schools were for the more general population.

In 1914, the First Class schools were reformed into Hollandsch-Inlandsche (Dutch-Native) schools (HIS) for the Indonesian upper classes. Together with the Hollandsch-Chineesche (Dutch-Chinese) schools begun in 1908, HIS took Dutch as the language of instruction and thus all led to the secondary levels of European education and thence to higher bureaucratic employment (Ricklefs 2001: 201). Through reform, the First Class schools that belonged to the native educational system were converted into HIS that became a formal part of the European school system. HIS helped to relieve pressure on the European lower schools, the only institutions where an Indonesian could learn Dutch adequately and proceed to OSVIA and STOVIA. In other words, it opened up a new way for Indonesians to access to the secondary levels of European education.

However, the reform for the Second Class schools designed for lower-class Indonesians encountered financial problems. The money needed to provide Second Class Schools for all

Indonesians in the early of 20<sup>th</sup> century exceeded the colonial government's total expenditure. As a solution, Village schools (*desascholen*) were established, which provided three-year basic literacy, numeracy and practical skills taught in the vernacular languages. Since the villagers have to bear much of the cost while government subsidized where necessary, the villagers showed little enthusiasm for such schools. Later, *Inlandsche Vervolgscholen* (native senior schools) was created to supply pupils from the Village schools with more years of primary education. The old Second Class schools became *Standaardscholen* (standard schools), a sort of middle-class schools between the lower-class village schools and the First Class schools for the upper class Indonesians. Most Chinese who engaged in trade attended such schools (Ricklefs 2001:202).

An unprecedented great deal of efforts was put in education during the period of the Ethical Policy. "The elitist approach was intended to produce leadership for the new Dutch-Indonesian age of enlightenment, the mass approach to contribute directly to welfare" (Ricklefs 2001: 199). From 1900 to 1930, total Indonesian enrolled in private or government schools increased by over six times (Ricklefs 2001). Despite some encouraging achievements of the Ethical education reforms, the promise was more than performance. Neither policy was pursued with sufficient resources, and neither succeeded in doing what its supporters wanted. Although there was unneglectable increase in the amount of formal education of a Western type that was available to Indonesians during the early decades of the 20<sup>th</sup> century, the increase was still marginal when comparing to the population size.

Socially stratified structure was a prominent feature of schools in the New Colonial Age. It reflected the structure of the colonial society and at the same time served to perpetuate the structure for the coming generations. Dutch-colonial society was stratified, with Europeans at

the top, followed by the native aristocracy, next the Chinese businessmen, and the native peoples locating at the bottom (Soedijarto, Moleong, ect. 1980: 65). Correspondingly, at the top of the colonial school system were the Dutch schools with identical curricula instructed in Dutch and fully funded by the colonial government. At the bottom were village schools providing limited curricula of reading, writing and calculating in the vernacular language and mostly funded by native people. In between were different types of middle-class schools, including those attended by Chinese businessmen, which would enable some graduates of the village schools to continue or transfer into the Dutch-instructed European school system.

To European colonialists, changes of educational policy always reflect the evolution of their political ideas and changes of their attitudes toward the function of their dependencies. Furnivall (1956: 373) concludes four common stages of educational policy imposed by European colonists in their dependencies, which are also applicable to Dutch colonialists in Indonesia. At the beginning, the government only provided education to children of locally employed European and native aristocratic elite, with no interest in educating the general population at all. Then in the second stage, humanitarians as well as the liberal politicians who regarded Education as an instrument of welfare and also cared about the long-term development of the colony advocated mass education for the general population. At the third stage, the colonial government encouraged education for the native Indonesians because of practical labor demands of the local market. Although at this stage, the government would subsidize native schools, they usually left much of the responsibilities to private enterprises. Therefore, Furnivall (1956) concludes the common feature of the colonial government's attitude to education in its dependency for the first three stages as "laissez-faire". With further social and economic development of the dependencies, the colonial government's education policy entered into the fourth stage in which

the government was more actively involved in and have more control over native education. Sometimes the coming of the fourth stage was not only with the positive development of the dependencies but also with the central administration's afraid of losing power in the local affairs. During 1930s, with the emergence of nationalism and various native political streams in Indonesia, the Dutch administration felt threaten. Accordingly, the colonial government intended to impose more control upon education. One piece of the evidences was the "wild schools ordinance", which required permission from the authorities before any private school without government subsidy could be established (Ricklefs 2001: 238). This interference in private schools was suspended due to opposition from every significant Indonesian organization at the time.

*World War II, the Japanese Occupation and the Revolution for Independence (1942-1950)* – The Japanese mopped up Dutch and Allied troops and took over the island in 1942. One of the priorities of the Japanese policy towards Indonesians was to wipe out Dutch influences. According to this priority, the Japanese eliminated the stratified structure of elementary schools established by the Dutch and replaced it with a single-track, six-year elementary school system. They also banned the use of Dutch and English in schools. Since Japanese was little known at that time, Indonesian became the major language for instruction. The promotion of Indonesian language set up its status as the national language afterwards. However, the banning of Dutch and English made higher education almost impossible for the duration of the war (Soedijarto, Moleong, ect. 1980; Ricklefs 2001).

The Japanese conquest was different from the Dutch occupation. The Dutch colonial government, a civilian government with long-commitment on the Islands, was not rash in utilize of Indonesian resources. The Japanese military government who was in the midst of an



enormous war required maximum utilization of resources in Indonesia in order to coordinate military operations in other East and Southeast Asian areas. Such contingent allocation of resources harmed the dependent society. For example, during the war, many Indonesians were promoted to fill the places of interned Dutch officials. Among these new Indonesian officials, many were former schoolteachers whose removal from the educational system led to the precipitous decline of educational standards (Ricklefs 2001: 250).

A few days after Japanese unconditionally surrendered to the Allied Forces, Sukarno, the first President after independence in 1949, declared the independence of Indonesia outside his own house on behalf of his political confederates. However, independence and freedom could hardly be obtained merely by the declaration of a simple statement. A revolutionary war of independence followed. The revolution for independence comprised violent struggles among different social forces, not only between nationalists and the Dutch. It is a period of disorder when any major new development in the society was stopped, no exception to education.

*Independence and Sukarno's Regime (1950-1965)* – Indonesia was independent finally. However, for a country badly damaged by the Japanese occupation and the Revolution, and a country typified by poverty, low education levels and authoritarian traditions, it is not easy to see the prosperity expected by Indonesian people after the successful struggle for independence. Despite the new nation facing enormous economic and social problems, it made some distinct progress in education. In the Education Law of 1950/1954 education was committed an equal right for each citizen that “all children who have reached age six are permitted, and those who have reached age eight are obliged, to attend elementary school for a period of six years” (Soedijarto, Moleong, ect. 1980: 66). The elementary school system adopted Japanese one-track, six-year school system but at the secondary level, the school system mostly followed the Dutch

model. Two parallel tracks of secondary schools were set up. The general academic track led to higher education whereas the vocational track trained students for work rather than university study.

Educational institutions expanded dramatically. According to Ricklefs (2001: 290), “Between 1953 and 1960 the number of entrants to primary schools rose from 1.7 million to 2.5 million, but around 60 percent of these consistently dropped out before completing school. State and private (mostly religious) high schools and university-level institutions sprang up everywhere, but especially in Java, and many achieved high standards.” Indonesian language was now used throughout the educational system. The Indonesian Communist Party (PKI) was one of the political forces actively promoting education. The major impetus for PKI to organize general literacy and basic education courses was its attempt to expanding the Marxist-Leninist ideas in order to acquire a large mass base of supporters who could fight for them in the future opposition to other political forces.

Since the last few years of 1950s, Sukarno’s regime had fallen into a crisis. All kinds of political parties and organizations scrambled for their own power and profit. Corruptions of government officials accelerated. The power of the army became expanding to many aspects of the society but unfortunately, the high-ranking military officers did not always stand on the same side of the president. This is the most disturbed period of Indonesia since the Revolution. Political confusion resulted in economic chaos and dropping of social welfare. Not surprisingly, the government didn’t have time to pay much attention to education. Thomas (1988: 359) described the deterioration of education – “While enrollments continued to increase, they did so at a slowing pace, school buildings fell into disrepair, teachers’ salaries were insufficient to pay even minimal living expenses, pupil dropout rates were high, and class sizes were large.”

### *Policy Changes on Basic Education during the Soeharto's New Order*

Soeharto's New Order was from 1965-1998. In 1965, General Soeharto went up to the top of Indonesian government by suppressing a coup. He attempted to establish a "new order" for Indonesia to contrast to the "old order" of Sukarno's days. The New Order government promised to devote to national economic development and improvements of education and welfare. However, given decades of neglect and the first priority to recover the nation's economy, health and education standard remained low for the first ten years of the New Order.

The booming of oil prices from 1970s produced real improvements in education and welfare. The oil revenue as well as other loans and grants enabled the government to finance educational expansion and improve education quality at a level that neither the Dutch colonial power nor the Sukarno's regime could imagine. Education issues were addressed continuously in the first three Five-Year National Development Plan. The First Five-Year Plan (1969-1973) focused on seven problems of education:

- 1) providing enough educational facilities to accommodate the entire school-age population particularly at the elementary-school level;
- 2) altering secondary-school enrollments from their present majority of students in general-academic curricula to a ratio that finds far more in vocational-training schools, particularly in agricultural institutions; (*This policy was in compliance with one of the major targets of the First Five-Year Plan – to raise agricultural output.*)
- 3) increasing the percentage of pupils who pass from primary into secondary education, particularly into vocational secondary schools;
- 4) reducing illiteracy in the adult population;
- 5) reducing the 50-percent dropout rate in the elementary school;
- 6) increasing the corps of qualified teachers
- 7) improving administrative efficiency. (Soedijarto, Moleong, ect. 1980: 54-55)

If the First Five-Year Plan laid out the guidelines for where the funds for educational development should go, the subsequent 1974-1978 Second Five-Year Plan began to take some real actions to realize such guidelines. One of the biggest actions taken by the government was the extensive school building program in 1973-1978. By the early of 1970s, the nation found

itself still far from the goal of universal primary education. On one side, a high birth rate and decreasing death rate continually accelerated the growth of the child population. In 1973, the number of 7-12-year-olds children reached 20.7 million while in 1975, 46 percent of the population was under the age of 15 (Thomas 1988; Ricklefs 2001). On the other side, the disturbed political and economic situation since 1950s left school facilities despaired and insufficient. In order to achieve universal primary schooling, President Soeharto in 1973 issued a special instruction (abbreviated as INPRES) applying more oil-export revenues to erect thousands of additional primary school buildings each year. “By 1978, the number of such INPRES schools had reached 24,065, representing 30 percent of the nation’s total of secular public schools. The 1980 national budget provided for the construction of 10,000 more and for the addition of 15,000 new classrooms in existing schools and the repair of 15,000 existing buildings.” (Thomas 1988: 359)

The school building program were not only limited to primary school buildings but also extended to educational facilities at the secondary level. According to the guidelines for educational development in the First Five-Year Plan, the New Order government had two ambitions in education for the secondary level: 1) having more and more primary-school graduates continue into secondary school in order to satisfy the expectations of the new generation for more advanced schooling; 2) increasing the number of students enrolled in the vocational secondary schools in order to meet the need for more workers trained at an intermediate level of vocational skill. To accomplish these, “650 new junior-high buildings were to be erected and 1,500 more rehabilitated, while 518 senior-high buildings were scheduled for repair” (Soedijarto, Moleong, ect. 1980: 56). In addition, “in 1974-75 more than 1,000 laboratories and equipment were built at the junior-high level and 200 more at the senior-high

level. Thirteen new technical high schools were set up. Over 1,340 existing general high schools were rehabilitated along with 100 vocational schools of various types” (ibid, p. 70).

Schools cannot be run without teachers. As early as from the Independence, the nation had faced an acute shortage of teachers. This was directly resulted not only from the social upheaval of the 1940s, particularly the removal of school teachers from the educational system to fill the administrative position vacated by former Dutch officials during the Japanese military occupation, but also from the educational expansion seeking to serve the entire population rather than a small portion of elites. To solve the problem of teacher shortage, large-scale teacher training programs were undergone. Besides supplying new teachers for primary schools and secondary schools newly established, the Ministry of Education also provided on-the-job training for the existing underqualified teachers. The styles of on-the-job training were varied. Primary school teachers were given a short course by teams of trainers who “traveled in motor vans and power boats to all sections of the archipelago” (Thomas 1988: 362). Secondary school teachers took their training courses in district centers. For teachers in hard-to-approaching areas, radio broadcasts also played a significant role in teachers’ training.

One of the fundamental objectives of the Third Five-Year Development Plan (mid-1979 – mid-1984) was to obtain more equitable distribution of development gains for the welfare of the entire population. In education, it continued the success of the Second Plan and extended the educational programs further in the general directions guided by the Second Plan. For example, in consider of the rapid growth of the population which brought increasing pressure to the existing junior-high schools’ accommodation, President Soeharto advocated to achieve further advances in junior-secondary education expansion, especially for rural areas, through the medium of a new non-formal educational institution called the Open Junior-High School. Such

schools employed a variety of media, such as “self-instructed modules, radio broadcasts, and correspondence courses by mail” to provide further learning opportunities for primary school graduates (Soedijarto, Moleong, ect. 1980: 77).

The increase in political stability and economic prosperity over the 1970 to 1980 era was accompanied by increase in both quantity and quality of the facilities of the nation’s educational enterprise. The nation-wide school construction activities were recorded as the most ambitious building program in Indonesian educational history. In addition to the school building program, the President Instruction (INPRES) also provided special budget for improving teachers’ compensation, publishing textbooks and providing other learning materials, and subsidizing private schools. Therefore, INPRES included a serious of programs for the purpose of expanding basic education, among which the school building program was the most famous one. As a result, “over 100,000 new schools were built, especially in rural areas, and over 500,000 new teachers employed. By 1984 it was reported that 97 percent of 7-12-year-olds were attending school, as opposed to 57 percent in 1973” (Ricklefs 2001: 370). It is worth mentioning that the school building program under highly centralized Indonesian educational system is different from those school infrastructure programs under decentralized educational systems in the sense of the allocation of the program (Duflo 2000). For the decentralized educational systems that rely much on local taxes, children in more affluent districts are more likely to benefit from such programs than those in poorer districts as affluent districts can afford to invest more in infrastructure. Alternatively, for the centralized educational system like that in Indonesia, the central government that has full authority for the distribution of resources could purposely allocate more resources to the disadvantaged regions such as rural, remote and

minority-congregation areas. The 1970s basic education expansion programs issued through INPRES in Indonesia gave special attention to the rural areas.

With great success in implementation of the INPRES, the government launched a “compulsory initiative” for children of 7-12 years old to attend primary schools in 1984 (UNESCO-BKK). This is the first time when the government officially prescribed the six-year primary school as compulsory education. Based on the 1984 six-year compulsory education initiative, the Education Law of 1989 (Law No. 2/1989) further included three years of lower secondary school into compulsory education. Law No. 2 of 1989 is the most fundamental legal basis for Indonesian modern educational system and practices. Since it was enacted, education has been implemented as one united and integrated system. All the policies and procedures that can be contradictory to it have to be brought in line with it. According to Law No. 2 of 1989, compulsory basic education includes six year of primary school and three years of lower secondary school. Up to 1994, the emphasis of the nine-year compulsory education was put on enrolling all children of 13-15 years of age in lower secondary schools. Many factors could prevent primary school graduates from continuing to lower secondary schools. The most important reason was the low economic status of their family. Regarding this problem, the Ministry of Education issued a Ministerial Decree (No. 0151/K/1994) concerning junior secondary level fee elimination. Also, the National Foster Parent Family (*Gerakan Nasional Orang Tua Asuh/GNOTA*) provided fellowships to students with economic hardship. For those students who drop out of primary or lower secondary school, the Ministerial Decree 0131/U/1994 was released to provide Packet A and Packet B programs to them. Packet A and B are both out-of-school education programs equivalent to primary school and to lower secondary school respectively. The vocational component of Packet B is considered a key part of the

program since most of Packet B students would directly enter into the labor market after graduation rather than continue their schooling (UNESCO-BKK; Cohen 2001). The 1994 decrees further promoted the nine-year compulsory education in that they encouraged primary school graduates to continue their education for three more years and also provided new access for primary and lower secondary school dropouts.

The series of education policies issued in the New Order period will be the focus of this study. As a conclusion, I am listing the series of policies in the order of years:

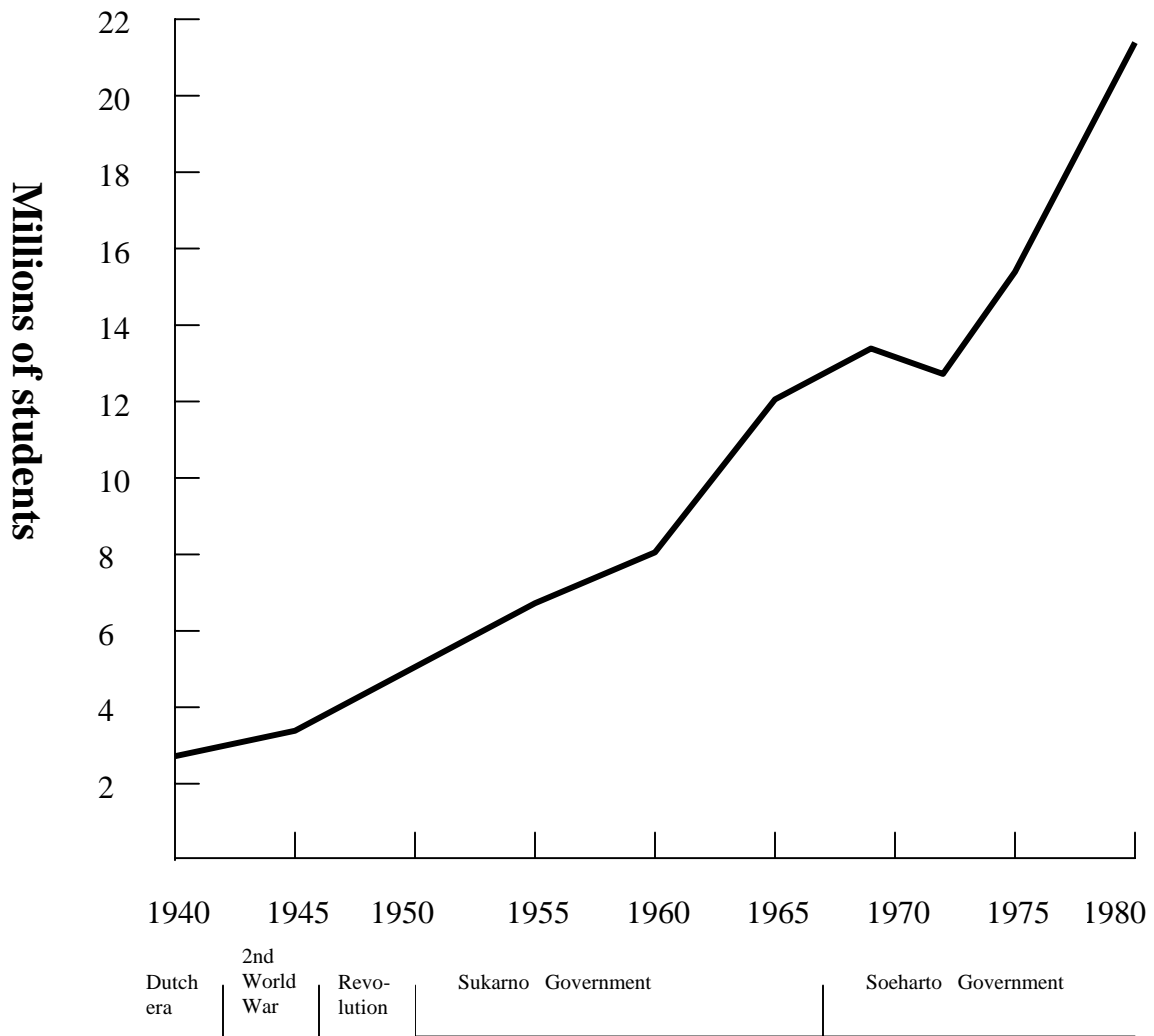
1973-1978	School building program
1979-1984	Junior high school expansion, especially in the rural areas – Open Junior High School
1984	Compulsory initiative for 6-year elementary school
1989	Education Law on compulsory education of 6-year elementary school plus 3-year lower secondary school
1994	Emphasis on compulsory lower-secondary school

### *Enrollment Change*

The primary and secondary school enrollment change reflect the effects of each policy change in basic education. The data presented here are divided into two portions according to their different sources: 1) 1940-1980 secular primary and secondary school enrollment (Thomas 1988: 360) (See Figure 1.2A & 1.2B); 2) 1975-1998 net enrollment ratio at the primary level and gross enrollment ratio at the secondary level (UNESCO Institute for Statistics) (See Figure 1.3 and Table 1.1). Although the data may not be precise especially for the earlier period, the trends are clear.

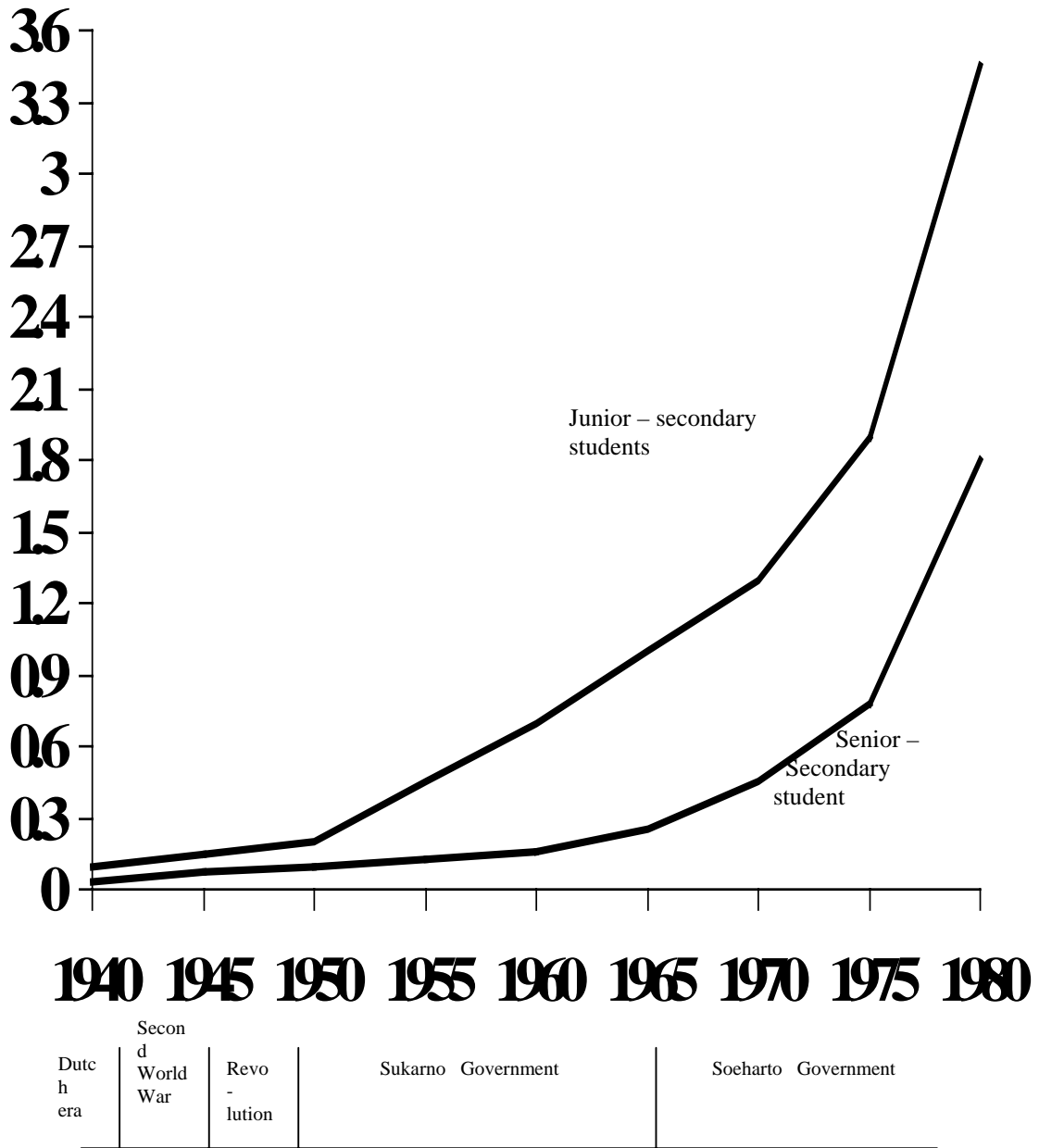


**Figure 1.2A**  
**Secular Primary-School Enrollment 1940-80**



Source: Thomas, R. M. 1988. "Indonesia." P.360 Figure 1

**Figure 1.2B**  
**Secular secondary-school enrollment 1940-80**



Source: Thomas, R. M. 1988. "Indonesia." p. 360

Figure 1.2A and 1.2B show the change of enrollment in secular primary and secondary schools from 1940 to 1980. Secular schools refer to those supervised by the Department of Education and Culture. Students enrolled in Islamic schools supervised and financed by the Department of Religious Affairs are not shown here. According to 1990 census data, less than 15 percent of students attended Islamic schools in spite of 85 percent of Indonesian population registered as Muslim (Frederick and Worden 1993). Even though the percentage of students enrolled in Islamic schools was much higher for 1940-1980, it would be still no more than 33 percent.

Figure 1.2A and 1.2B identifies the major political eras in Indonesia. As the graphs illustrate, the number of students enrolled in both primary and secondary schools increased very slightly for the colonial period. Real improvement was not obtained until the declared independence of Indonesia in 1945 for primary education. For junior secondary education, the real improvement began after the Revolution for Independence. For senior secondary education, it happened more than ten years later since the independent Indonesia was established. It is very obvious that the steep rise in enrollments for all the three levels had occurred around the middle of 1970s as increasing amounts of oil revenue had been invested into constructing and equipping schools.

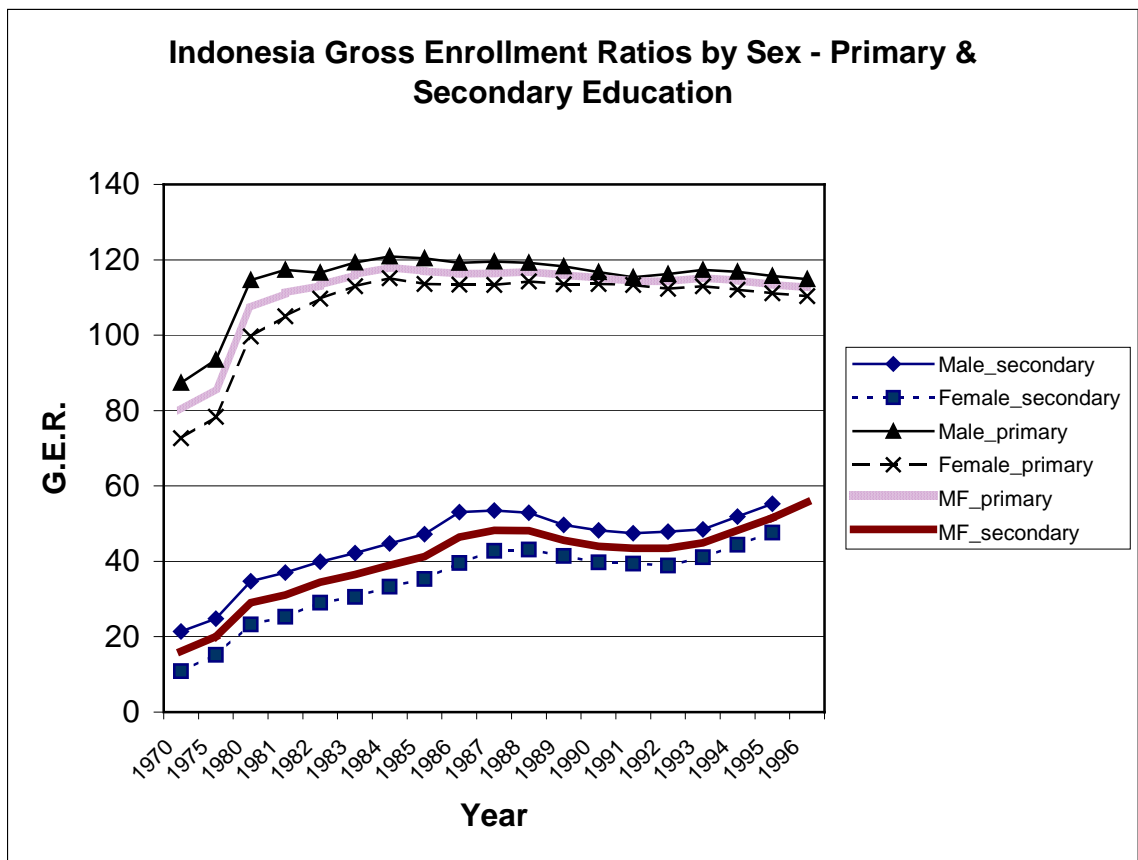
The gross enrollment change<sup>1</sup> for primary and secondary education by gender is shown in Figure 1.3. The large-scale school expansion program of 1973-1978 is represented by the total gross enrollment for primary education which changed from 80 percent in 1970 to 107 percent in 1980. The increase was about 27 percent over a decade. For secondary education, enrollment

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<sup>1</sup> I used the gross enrollment ratios rather than the net enrollment ratios because the data for the gross enrollment ratios are more complete for both primary and secondary education. These data are from the UNESCO Institute for Statistics.

changed from 16 percent to 29 percent, increasing 13 percent during the same period. These data may reflect the achievements of the extensive basic education by expansion programs implemented in 1970s. The gross enrollment ratio of secondary education kept increasing until 1987. Since then, it decreased from 48 percent to 43 percent in 1992. The decrease during this period was probably due to the “economic shock” happened in 1986-1987 “when education expenditures diminished, and no special efforts were made to keep children in school” (World Bank 1999). From 1994 to 1996, it increased again at the speed of 4 percent per year, which probably could be attributed to a series of government decrees promoting the expansion of lower secondary education. The gender gap was narrowing between 1970 and 1996 but at a slow pace.

**Figure 1.3**



Source: UNESCO Institute for Statistics

For primary education, the net enrollment ratios are more understandable than the gross enrollment ratios. Table 1.1 shows that the net enrollment ratios for both boys and girls kept increasing after 1980. In 1982, boys' and girls' primary school net enrollment ratio reached 100 percent and 95 percent, respectively. In fact, from 1982 to 1996, no substantial change was observed in primary education enrollment for both boys and girls, especially for girls. The change of girls' net enrollment ratios was no more than 3 percent through 1982-1996. Most of time, the enrollment ratios were constant, around 95 percent. Such an observation implies that the 1984 six-year compulsory education initiative and the Education Law of 1989 may not have any significant impact on further increase primary education enrollment. It seems that the functions of these two policies were no more than confirming and preserving what had been achieved. Actually, for boys, the 1989 Law even could not prevent the loss of them from primary education. It is encouraging to note that the enrollment at the primary level showed a tendency for gender equity but on the other side, it is also discouraging to see that there was almost no improvement in girls' primary school net enrollment ratios for about twelve years.

**Table 1.1**  
**Primary School Net Enrollment Ratio by sex: Indonesia**

Year	N.E.R.		
	MF	M	F
1970	...	...	...
1975	72.4	77.8	66.9
1980	87.9	92.7	83.0
1981	94.2	98.4	90.0
1982	98.1	100.9	95.3
1983	96.0	98.3	93.6
1984	97.8	100.0	95.6
1985	98.1	100.9	95.2
1986	96.6	98.1	95.0
1987	98.3	100.8	95.8
1988	98.3	100.3	96.2
1989	97.6	99.6	95.5
1990	97.5	99.5	95.4
1991	97.4	99.6	95.2
1992	96.7	98.7	94.6
1993	97.3	99.5	95.1
1994	97.0	99.2	94.7
1995	95.4	96.9	93.9
1996	94.8	96.3	93.3

*Source:* UNESCO Institute for Statistics

## CHAPTER II

### Literature Review

#### *Introduction*

This review of literature relates to the purpose of the study and research questions identified in Chapter One. The related literature focuses on the theories and researches regarding the effects of various family background indicators on children's education; the efficacy of the state policy on improving education equity; gender differences in education for a Muslim country.

#### *The Effects of Family Background on the Child's Education*

##### Construction of the Educational Inequality Research

Educational inequalities are understood as a crucial variable in the reproduction of social inequality. The relationship between family background and the child's education is part of the issue of educational inequality. If the impact of family background on educational outcomes remains strong, educational inequality continues to be a social problem. To the contrary, if such impact declines, that means an individual's social origins become less important in determining one's educational attainment, then education becomes more open and equal to all social classes.

Before education inequality was perceived as a social problem, social stratification was widely regarded as static and proper nature of the society. Different social classes were believed to require different sorts of education. How did social scientist formulate and conceptualize educational inequality as a social problem? Foster and his colleagues (1996), based on the large body of research on educational inequality produced in Britain since the Second World War, conclude three main stages in the construction of educational inequality as a social problem. At

first, social scientists attributed the failure of working class in school to their customary and financial barriers, inadequate provision of places in education, and later cultural barriers and home background influencing early cognitive and attitudinal development. New sociology of education shifted the focus of debate dramatically. It switched its focus from the individual to “the nature of the education that was on offer, to the sort of academic ability on which school achievement depends, and to the kind of learning schools fostered” (Foster et. al., 1996: 10). It regarded the failure of working class as a product of the schooling system itself. Finally, the focus for such research extended to educational inequalities between sexes and among ethnic groups. Researches at this stage drew on many of the same theoretical resources used in identifying educational inequalities between the social classes. There is considerable overlap in time between each stage.

At present, these main stages, existing at the same time, become three different angles to explore the problem of educational inequality: 1) from the micro-level of individuals and their family backgrounds; 2) from the macro-level of schools and educational systems; 3) from the specific disadvantaged groups in the society, such as girls and ethnic-minority students. This study, in consider of the data employed, will investigate the problem of educational inequality in Indonesia from the micro-level of individuals and their families as well as from the point of view of gender disparities.

### Reproduction Theory and Modernization Theory

Before discussing the effects of family background on children’s education, it is necessary to review two rival schools of educational mobility theories – reproduction theory and modernization theory.



Reproduction theory is advanced by Pierre Bourdieu (1973), who argues that educational system perpetuates the stratification already existed in the society exemplified by abundant cultural and economic capitals in the possession of the dominant class. The educational system only reflects and rewards the culture of the dominant class with its credentials. However, schools do not provide the techniques to acquire such culture, which can only be transmitted by the family. Parents with prestigious status are not only able to use their socio-economic resources to purchase good educations for their children, but also able to provide a culture environment that fosters a certain kind of tastes, habits and skills that the educational system rewards. Consequently, social background inequalities are translated into differential academic rewards and which in turn lead to unequal social and economic rewards. The whole social system is thereby maintained and legitimized by such reproductive process. This perspective implies that social origins are always among the key determinants of an individual's educational attainment. Therefore, inequality in education is unlikely to be erased since it is connected to the whole social structure system.

On the contrast, modernization theory or liberal theory emphasizes on the importance of human capital and meritocracy (Treiman 1970). It stresses that social background effect on educational attainment tends to decline over time, especially as mechanization of agriculture, industrialization, urbanization and the development of free mass education reduce between-status differentials in both the value of children and the costs of their. That is to say, the education system becomes more meritocratic, accentuating individual abilities rather than one's social background. This is because the educational system merely serving a small privileged elite is no longer compatible with the occupation structures and labor demand in industrial societies (Treiman 1977). Under such a circumstance, educational system would expand, overall

education attainment would increase and the total effects of family background on educational outcomes would decline.

Researches have been done in various countries to test the theories. In Bolivian, the revolution reduced inherited privilege but did not eliminate it in the short run; in the long run, inequality and status inheritance reemerged, and the children who enjoyed advantages in their life after the revolution were exactly the offspring of the old elite (Kelley & Klein 1981). The rebirth of inequality and inherited privilege is mainly contributed to the immunation of human capital to revolution. The land and property of the elite can be confiscated and redistributed by revolution but revolution appears to have had little effect on the educational advantages that high-status families were able to provide for their children. High-ranking families would always be able to impart values, motivation, skills and knowledge to their children in guiding them to achieve high status through school. Such advantages still remain important during and following the revolution, if not more important.

In France, the homeland of the reproduction theory, Robinson and Garnier (1985) point out that the reproduction theory overstated the role of education in reproducing class advantage from generation to generation. They note that Bourdieu ignored gender differences in class reproduction. Class reproduction defined by ownership and control over labor power is found weaker among women than among men. In the reproduction of ownership, women are less likely than men to acquire ownership from their father. In reproduction of control over labor power, women are less likely to end up as managers or supervisors. Robinson and Garnier (1985:277) finally conclude, "Education, if anything, serves more as a vehicle of mobility than as a reproducer of class inequality."

Smith and Cheung's study in Philippine (Smith & Cheung 1986) and Post's study in Hong Kong (Post 1996) both present two models: one investigates the effect of family background on the net school attainment of the child; the other focuses on the effect of family background on school progression. Both studies find the waning effect of family background on the child's net school attainment over time with the first model. These findings support the assumptions of the modernization theory about meritocracy and human capital, which indicate that as a society industrializes, overall education levels will rise and the effect of parental status as a determinant of educational outcomes will decline (Treiman 1970). Nevertheless, for the second model that relates family background to the chances that someone at a given level of schooling will progress to the next level, Smith and Cheung find that father's education has a significantly positive effect on progression of schooling. There is no remarkable change over time for the trend in effects across cohorts. The effect of father's occupation displays little indication of trend, either. As a fact, the effects of family background on the grade progression show remarkable constancy over time. Post finds in the Hong Kong's case that only for the continuation from primary to lower-secondary school did the effect of mother's education become significantly smaller over the ten-year period from 1981 to 1991. No significant cohort differences in mother's education were found for transitions to upper secondary school and postsecondary education. That is to say, educational stratification reemerged at higher levels.

In the study of Australia, Graetz (1988), on one side, supports the modernization theory in that the effect of social background on years of basic schooling and total years of education has declined and the effect of ability has increased. On the other side, he also believes that inequality in education have scarcely diminished based on his findings that the impact of social

background remains important while gender differences in qualifications and tertiary attainments are mostly undiminished.

In Greece, Katsillis and Rubinson (1990) find that family socio-economic status and father's class have a statistically significant positive effect on the cultural capital of students. However, their study shows that cultural capital has no direct or indirect effects on educational achievement, while both student ability and effort have statistically significant direct effects. Based on the findings, they propose that the differential ability and effort of students from different socio-economic backgrounds rather than cultural capital are the major mechanisms in reproduction of social hierarchy.

Although the importance of education in social reproduction has been demonstrated in different situations, a precise understanding of this issue still remains elusive. The results were mixed. Neither one can prevail the other.

### The Components of Family Background

The family is a one of the important agents in the transmission of educational inequality. Family background indicates an individual's social origins. Most research specifies family background by some social and economic indicators, such as parental schooling, occupational status, income, race, family structure and geographic location. However, these measured variables need not and, in fact, cannot exhaust the concept of family background, which encompasses a wide range of experiences and resources associated with one's family. How to choose the appropriate indicators of family background is based on the interest of research and the data on the hand. In my study, I first decompose family background into three types of capital – economic capital, human capital and social capital, according to Coleman's suggestion

(Coleman 1988), and then select indicators for each component respectively according to the data available.

*The definition of capital* – What is capital? Bourdieu gives an abstract and obscure definition, “Capital is accumulated labor (in its materialized form or its “incorporated,” embodied form) which, when appropriated on a private, i.e., exclusive, basis by agents or groups of agents, enables them to appropriate social energy in the form of reified or living labor.” (Bourdieu, 1986: 241) He further explains it using a vivid comparison with the Roulette. He elucidates that roulette is composed of many random and independent moments, which signifies an “imaginary universe of perfect competition or perfect equality of opportunity, a world without inertia, without accumulation, without heredity or acquired properties” (ibid). Capital, in contrast to roulette, is accumulated and persistent in its being. It has its own immanent rules of operation that represent the immanent structure of the social world and, at the same time, are constrained by the reality of the society. The nature of capital determines that the chances of success for each individual are by no means equal.

*The forms of capital* – Capital has different forms according to its different functions. *Economic capital or financial capital* is the original form of capital, “which is immediately and directly convertible into money and may be institutionalized in the form of property rights” (Bourdieu, 1986: 243). *Human capital*, as a revolutionary idea developed by economists in the early of 1960s, “is created by changes in persons that bring about skills and capabilities that make them able to act in new ways” (Coleman, 1988: S100). It takes forms as skills, knowledge, abilities and educational credentials. One can invest in human capital through education, training and healthcare. *Cultural capital*, initiated by French sociologist Pierre Bourdieu (1973), refers to “competence in a society’s high status culture, its behavior, habits, and attitudes”

(Katsillis and Rubinson, 1990: 270). It is regarded as an important mechanism in reproduction of educational and social inequality. Bourdieu's idea of cultural capital triggers many interesting studies under this issue. However, since the data used in this study lack of the measurement for cultural capital, I will not discuss it here. *Social capital*, as defined by Putnam (1995: 67), "refers to features of social organization such as networks, norms and social trust that facilitate coordination and cooperation for mutual benefit". Family, "formed by the genealogical definition of kinship relations" (Bourdieu, 1986: 249), is the most fundamental form of social capital. To analyze family background, I am mostly following Coleman's analytical method of separating family background into three components: financial capital, human capital, and social capital (Coleman 1988). However, I change financial capital into economic capital as the latter covers more resources provided by the family than wealth and income. I will explain this change further when discussing the measurements of economic capital.

*The relations among three forms of capital* – The creation of the concept of human capital is an extension of economic capital as human beings can be seen as crucial resources for the economic growth just like other physical economic capital. However, an individual's human capital is not always parallel to one's economic capital. The most privileged people from the point of view of economic capital and power are not necessarily the most well-off in terms of human capital. In Robinson and Garnier's study (1985), they find that human capital, embodied as educational credentials, plays very little role in reproducing ownership of business. French capitalist and petty bourgeois fathers directly give the family businesses to their sons or provide them with investment capital to start their own business. There is little tendency that they place their children in ownership and control positions depending on the human capital that the child possesses. Bourdieu also has the similar argument. He believes that "the value of the diploma,

outside the specifically academic market, depends on the economic and social values of the person who possesses it” (Bourdieu, 1973: 506). For the holders of economic capital and power, human capital is only a surplus or confirmation to their already legitimate high status in the hierarchy of sections regarding to economic capital, whereas for people who cannot enjoy that much of economic capital and power, education, as a form of human capital, can be a vehicle but not a guarantee of mobility into a higher position in the hierarchy. For a certainty, people who are abundant in economic capital and power have more chances than those who are deprived of it to possess human capital.

Unlike economic capital, social capital is immaterial. However, the accumulation of social capital requires a consistent investment of time, attention, care, concern and energy, which directly or indirectly equals to an expenditure of economic capital. As Bourdieu says (1986: 253), “From a narrowly economic standpoint, this effort is bound to be seen as pure wastage, but in the terms of the logic of social exchanges, it is a solid investment, the profits of which will appear, in the long run, in monetary or other form.” In addition, social capital is ordinary a “public good” (Coleman 1988), which means the return of the investment of social capital benefit not only the person who invests in it but also to all the others who belong to the same social network or structure. This feature of social capital is quite different from that of economic capital, which is a “private good” usually benefiting directly the person who makes the investments.

As to the relations between social capital and human capital, Coleman’s *Social Capital in the Creation of Human Capital* (1988) is the leading reference in this topic. He proposes, “if the human capital possessed by parents is not complemented by social capital embodied in family relations, it is irrelevant to the child’s educational growth that the parent has a great deal, or a

small amount, of human capital” (Coleman, 1988: S110). He examines both social capital in the family and that in the community, and concludes that social capital plays an important role in the formation of human capital for the next generation.

Economic capital is normally the most tangible form of capital. Human capital embodied in skills and knowledge acquired by an individual is less tangible. Social capital is the least tangible form of capital for it is contained in the relations among persons (Coleman 1988). The three forms of capital can transubstantiate between each other and Bourdieu (1986) believes such transubstantiation would also obey “the principle of the conservation of energy” equal to the same principle works in the field of general science, which means profits in one form of capital are necessarily paid for by costs in another form of capital. For example, if parents intend to spend more time with their child (a form of social capital in the family), they have to sacrifice the same amount of time that otherwise, they would devote to work for accumulating economic capital or to their own education for accumulating human capital for themselves. Research has proved that all the three forms of capital of the family play more or less roles in determining the educational outcomes of the rising generation (for example, Sewell and Shah 1968; Coleman 1988; Conley 2001).

*The measurements of capital* – In consider of the data available and the suggestions by the literature, this study will use the following measurements to indicate each form of capital.

For economic capital, it is used as a replacement to Coleman’s financial capital that is commonly measured by the wealth and income of the family (Coleman 1988). Financial capital provides the physical resources and materials that can aid children’s education. However, in this study, I will use *parent’s occupation* instead of family income as an approximate measurement for economic capital because on the one hand, the information of labor income was only



collected for the last 12 months in the IFLS data and, on the other hand, the earnings information appears to have been significantly underreported (Frankenberg and Thomas, 2000: 61).

Occupation as a measurement of economic capital has two advantages compared with the income: First, occupation is less time-varying than income. Usually people would change their jobs for various reasons in their life course but they would not change their occupations that often. For example, if a person is a doctor, he/she may change from one health care facility to another, but no matter which one he/she works for, he/she is still a doctor. The occupation doesn't change. Secondly, occupation contains more information than purely financial gain. The occupational structure is an indication of the social stratification system. As Blau and Duncan (1967: vii) state, "In the absence of hereditary castes or feudal estates, class differences come to rest primarily on occupational positions and the economic advantages and powers associated with them." The disadvantage of occupation is that it is not so direct a measurement of family's financial situation as the income since the occupational structure is not wholly parallel to the distribution of income. The occupational status for individuals is not only based on income but also on education and skills involved in the occupation.

In addition to parent's occupation, *household characteristics*, such as ownership of the house, number of rooms and the access to electricity, are also selected as the measurements for the family's economic capital. The ownership of the house is an indication of the family's wealth. The number of rooms indicates if there is the separate space at home for studying. The access to electricity is not only a sign of the family's living conditions in less developed countries, but also a necessary condition for studying at night or any other time when the natural rays are not light enough. Household characteristics, combined together, represent the physical resources that a family can provide to aid their children's learning.

I use *mother's education* to measure the family's human capital influencing the next generation's education. Educated mothers can not only provide the potential cognitive assistance for their children's learning but also motivate the schooling of their children by conveying them high educational aspiration and positive attitudes toward school. Mother's education is a better indicator of family's human capital than father's education in this study because of the following two reasons. First, mothers usually spend more time with their children than fathers. As Coleman stated, human capital possessed by the parents "may be irrelevant to outcomes for children if parents are not an important part of their children's lives, if their human capital is employed exclusively at work or elsewhere outside the family" (Coleman 1988: S110). That is to say, parents' human capital cannot be transferred to children's human capital automatically. They need to spend time with their children for the benefit of the children's intellectual development. The time spent with the child is a medium for this transfer. Based on this theory, mother's human capital, measured by mother's highest level of education, could influence the child's educational attainment more directly and strongly than the father's. Secondly, in consider of the data themselves, most of non-coresident children's information was attached to their birth mothers while their father's information was missing. Therefore, using mother's rather than father's educational attainment can reduce the missing values in a great proportion.

For social capital, I use *number of siblings and family religion* as the measurements (Coleman 1988). The number of siblings is an indirect measurement about the attention given by the adults in the family. The more siblings a family has, the less attention the parents are able to give to each child. A dilution of the parents' attention to the child represents a decrease of social capital available in the family.

Family religion is a kind of social network. People who believe in the same religion share the common worldview and culture that have an impact on their children's performance in school. Also, religious socialization in the church and community form a solid network that can facilitate education of the children inside this network.

### Empirical Studies

Social scientists have developed a variety of research on the effect of family background on the child's education for different countries applying diverse background and educational outcome indicators as well as various statistical models. In America, Darnell and Sherkat (1997) believe that family religion has an effect on the child's educational attainment. They demonstrate that fundamentalists are less inclined to attain higher education, regardless of their social origins. Mare (1980) makes a pioneering effort on applying the logistic response model to examine the social background effects on school continuation decisions instead of the total grades of school completed that was commonly used by the research before him. He finds the overall reduced-form effects of family structure and socioeconomic status on school transitions for white American males but the declines are not uniform for each variable. Father's occupational effects are significant only from high school onwards and mother's education effects decline very slowly over schooling levels. The number of siblings and absence of one or both parents have persistent negative effects on school continuation. Kuo and Hauser (1995) examine the similar relationship with the variation in race. They find the effects of family background, indicated by parental schooling, father's occupational status, size of sibship, intact family, farm background and southern birth, on schooling have declined for both blacks and whites but the pattern of change differs in the two groups.

In Europe, Ishida, Muller and Ridge (1995) investigate the association between class origin and educational attainment in ten industrial nations mostly in Europe (except Japan). Class origin is defined as the father's class, which is decided by father's occupational categories. Their findings do not support the modernization theory which believe that the effect of social background on educational and socioeconomic attainment would diminish with the increase in the level of industrialization, but prove that the effect of class origin on the child's educational attainment measured by educational qualifications persists across nations.

For developing countries, some research reports that the effect of schools' characteristics and teachers' quality have more impact on students' achievement than the effect of the student's family background (Heyneman and Loxley 1983; Fuller 1987). These findings are contrast to those founded in industrialized countries that the students' social background mostly explains their achievement levels. However, strong evidence is also presented in developing countries that family background alone contributes significantly to the child's enrollment, attendance and completion of various levels of schools (Wolfe and Behrman 1984). For example, in China, Zhou, Moen and Tuma ((1998) test the effect of family social origins, gender and residential location on educational advancement in urban China for three historical period from 1949-1994. They find educational inequality based on family social origin persisted throughout the entire period under study and it even increased in the most recent period (1978-94), a time of rapid economic growth and industrialization. Those whose father had a cadre or professional occupation were advantageous than those whose father were workers or peasants for entry into senior high school or college throughout the period while the positive effect of father's education was drastically reduced and reversed during the special period of the cultural revolution when the radical state policies favoring the working class were enforced. In Malaysia, Lillard and Willis

(1994) discover that parental education has significant impact on children's school transitions and it predominantly influence children of the same sex. The mechanisms through which that father's education influence on the child are primarily through the economic resources and location of the family while the influence of mother's education is mainly through the quality of time spent with the child. In Taiwan, it is found that having an older sister increase younger sibling's educational attainment (Greenhalgh 1985; Parish and Willis 1993). Family background mostly indicated by parental occupational and educational levels are also reported to be strongly associated with educational attainment of the children in Philippines, Nepal, Hong Kong and Brazil (Smith and Cheung 1986; Jamison and Lockheed 1987; Pong and Post 1991; Psacharopoulos and Arriagada 1987).

The accumulated evidences document "persistent inequality" in educational attainment in a variety of cultural and social contexts (Shavit and Blossfeld 1993). This persistence of inequality that links children of different social background with different educational opportunities impels social scientists to work on this topic diligently. They continue to expand and further their research in this field by trying new measurements, applying new statistical methods and observing new social context in order to find effective ways to break such persistent inequality. Here the next section is introduced. Are the state policies aiming at equalizing the educational opportunity for everyone in the society one of such effective ways that the social scientist wish to find?

### *The Efficacy of the State Policy*

Education policies are a kind of social engineering (Lawson & Garrod, 2001: 230). Lester Ward believed that social stratification could be eliminated by social engineering.

However, Pitirim Sorokin (1954) disagreed with such an evolutionary view in social mobility. He proposed that the change in the field of social stratification was actually trendless. How much power the state educational policies have in increasing educational mobility and consequently social mobility is still unclear based on previous research. Graetz indicates that one implication of the social reproduction theory is that “conventional policy efforts are bound to fail” (Graetz, 1988: 360). According to the literature review done by him:

“In the USA, Bowles and Gintis suggest that while legislative changes have narrowed the gap in educational attainments, individual achievements still depend as much on social background as they did in the past. In contrast, Hauser and Featherman find some evidence of a decline in the influence of social background on the educational attainments of men, but less so for those with poorly educated fathers and those from large families. In Britain, Halsey et al. observe that prolonging the period of compulsory education by legislation has indeed enhanced the level of attainments throughout society, but at the expense of creating further inequalities at later stages of the education process. In France, Garnier and Raffalovich conclude that educational expansion has done little to diminish the effect of social origins on formal certification.” (Ibid, p. 359)

In his own study of Australia, Graetz concludes that despite various education expansion programs, individual’s educational attainment is still constrained by the unequal effects of family background, by gender and by type of school attended.

A series studies in Hong Kong are valuable resources for exploring the efficacy of the state policy. According to Post, Hong Kong is an ideal example for studying the government’s impact on educational stratification because of its more autocratic way to implement government policies than other democratic nations like America (Post 1993). Unlike many other countries, Hong Kong maintains very tight governance of its educational system, allowing no direct participation by interest groups or political parties in the decision-making process (Post, 1996: 158). Therefore, any changes in educational stratification resulted from the expansion of the educational system can be attributed more directly to the government policy, as compared with such changes in countries where schools expanded purely as a function of increased public

demand. The studies in Hong Kong find that a series of governmental policies concerning educational expansion, such as governmental subsidies, abandoning fees, providing more places for the secondary education, have attenuated the effects of family background and gender on total years of schooling and made the system more open at the primary and secondary levels. Nevertheless, educational inequality based on family socio-economic status and gender remained at the higher educational levels (Pong and Post 1991; Post 1994). In the sense of postsecondary education becoming more accessible to children of mothers having little education, Hong Kong's system of postsecondary education is becoming less stratified by family background concomitantly with its expansion. This, nevertheless, does not mean that stratification has been removed from the educational system because in the latter transitions of schooling (from lower to upper secondary and from upper secondary to postsecondary), stratification and inequality remain almost at the same level as before (Post 1996).

Simkus and Andorka conclude that there are two kinds of educational policies through which the allocation of education becomes more equal:

“1) administrative social selection, sponsoring the mobility of those from lower social origins at the expense of those from the upper strata, and 2) compulsory comprehensive education from the lowest grades up. Over the long run, both state socialist societies and liberal democratic market societies have found the latter approach more politically palatable than the former, but in both kinds of societies compulsory comprehensive education has only been implemented to vary degrees.” (Simkus and Andorka, 1982: 750)

Hungary experienced both of the policies. During the early 1950s, the Communist government took some strong administrative measures in educational policy and institutions to purposely promote those from working-class backgrounds into the universities and at the same time, prevent those students from gentry or bourgeois class backgrounds from accessing to higher education. These measures increased the equality of the educational attainment in that they tremendously increased the proportions of working-class students surviving all the way to face

the higher progressions. However, it is not found that such measures decreased the disadvantages of working-class students in making the progression to a university compared with the students from non-manual backgrounds. After the relaxation of administrative control over the relationship between class backgrounds and admission to higher education since the end of 1950s, the second kind of educational policies about the establishment of the eight-year compulsory and comprehensive education took place. This change tremendously decreased overall socioeconomic inequalities in education, especially in the lower levels of education.

Like Hungary, Bolivia, Poland and China also introduced the similar educational policies after World War II for the purpose of reducing the disadvantages of the working class in educational attainment at the expense of restricting the former elite from access to higher education (Kelley and Klein 1981; Ishida, Muller and Ridge 1995; Zhou, Moen and Tuma 1998). Such “positive discrimination” (Ishida, Muller and Ridge, 1995:160), whereby the child of the working class would have better educational attainment, in spite of enhancing the educational opportunities for the working class in the short run, does not work effectively for the long run. That is to say, the advantage of children from the non-manual backgrounds over those from the manual backgrounds in educational attainment persists over time. The reasons for ineffective of the “positive discrimination” policies in the long run are varied. Some suggest that it would be due to the immunation of human capital to revolution (Kelley and Klein 1981). However, the simplest and the most direct explanation would be the indurable nature of such discriminative policies themselves. The result of using one kind of inequality to replace another kind of inequality is still inequality. Thereby, it could not be a permanent solution to inequality.

There is no explicit record of the same preferential policies in the history of Indonesian education as what implemented in the above-mentioned countries as well as in Malaysia (Pong



1993). After the independence, the Indonesian Communist Party (PKI) was active in promoting education for the mass, especially for general literacy and basic education. However, since the PKI had never indeed gained the control over the country even at the time when it hold many seats in the cabinet, they were not politically strong enough to make the “positive discrimination” policies for the proletariat. Most of Indonesian education policies in order to reduce the educational inequality belong to the second kind.

The mechanism that Indonesia used to expand educational system distinguishes from that in many democratic countries (see Figure 2.1). For those countries, economic development, labor market expansion and demographic increase lead to the increase demand of education, which attracts attentions of various interest groups and political parties to invest in education. In this way, educational expansion is virtually caused by the demand of education. However, the educational expansion of Indonesia in 1970s was mainly attributed to the government policies that were more influenced by the exogenous global forces than the interior demand of education.

In 1971, the world oil price was 1.8 US dollars per barrel (159 liters) (Oil News 2001). In 1973, Egypt and Syria attacked Israel. The United States of America provided military supports to Israel, which irritated Saudi Arabia and other Arabian countries. They proclaimed to execute oil embargoes to America and some other western countries. Subsequently, the mass panic appeared at the oil exchanges. By the mid-December of 1973, the oil price for each barrel had increased to 17 US dollars. At the same time, the Organization of Petroleum Export Countries (OPEC) passed a resolution that the reference oil price would be 11.35 US dollars per barrel. Since then, the oil price had been increased at a speed of 3-4 percent annually (ibid). The First World Oil Crisis occurred in the early of 1970s led to the skyrocket of the global oil prices. As a major oil export country, Indonesia obtained substantial profits from this oil crisis. The

huge revenue from the oil market accelerated the economic development of Indonesia and also turned to be the most direct reason for the 1973-1978 school building program, the most important education policy of Indonesia in 1970s.

Like the government of Hong Kong in 1970s (Post 1996), Soeharto's New Order regime was an autocratic military government. It had tight control over governance of the country, no exception to education. The birth of the 1973-1978 school building program was more based on the global oil price change than on the change of the domestic demand of education. The exogenous global forces enabled the Indonesian government to formulate the policy to change the supply of education, and consequently to expand educational opportunities. In this process, the government did not passively adjust to the demand of education but actively imposed their influence on education under the favorable global circumstances. Using the revenue from the oil market, the government totally established 43,569 primary schools and 5,031 junior high schools from 1973 to 1980 (see Table 2.1).

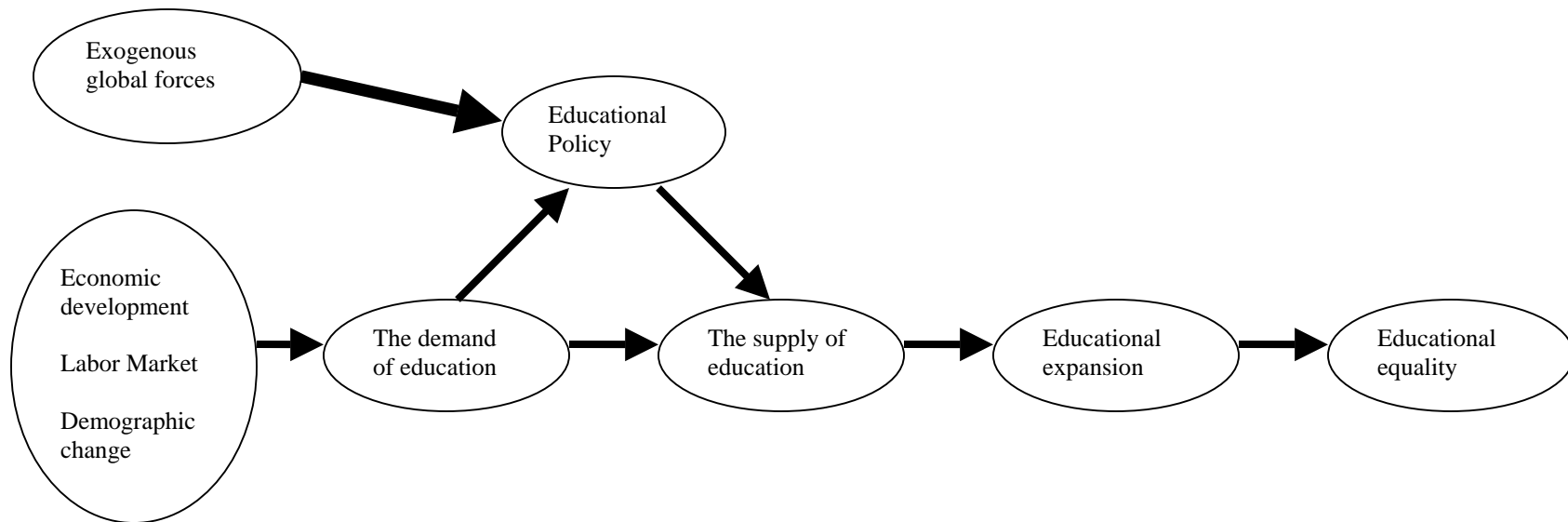
**Table 2.1**

**Number of Primary and Junior High Schools in Indonesia, 1971-1983**

<b>Years</b>	<b>1971</b>	<b>1972</b>	<b>1973</b>	<b>1974</b>	<b>1975</b>	<b>1980-81</b>	<b>1982-83</b>
<b>Primary School</b>	65,950	65,569	61,916	66,994	73,589	105,485	120,024
<b>Junior High School</b>	5,293	5,548	5,485	5,597	5,960	10,516	12,361

*Source:* Statistical yearbook of Indonesia, 1975, 1979, 1980-81, 1982-83.

**Figure 2.1**  
**The Mechanism of Educational Expansion**



### *Gender Disparities in Education*

Even though the majority of Indonesian is Muslim, Indonesia is unlike other Islamic societies in that women are active in the market (Oey-Gardiner and Suprpto 1997). The relative high status enjoyed by women in Indonesia is attributable to the historical heredity, religious confirmation and the governmental promise.

Old manuscripts of the early Indonesian history record stories and legends about women occupied prominent positions either as queens or leaders of the social groups. Queen Sultanah and queen Tenriolle were typical examples of such women. During their reign, schools were built for both men and women (Baried 1986). When entering into the feudal society, Indonesian women gradually had no right to make decision on any issue relation to family and social life though they assumed heavy tasks both inside and outside the house. This condition was exacerbated during the Dutch colonial period (ibid, p. 142). By the end of the nineteenth and the beginning of the twentieth century, the consciousness of the Indonesian women was awakened by Kartini, a daughter of a *bupati* (regional chief), through her famous letters to her Dutch pen-friend. In these letters, she described the life of the Indonesian women in her time through her own experience and expressed her anticipation for the future. Kartini is the first woman who explicitly illustrated the education for girls in the Indonesian history. In one of her letters, she wrote:

“When we ask earnestly for education for girls, we do not wish them to become rivals for men in this struggle for life, not at all, but we want them to become more proficient in doing their duties, duties assigned to them by nature itself: to become mothers, the primary educators of men. Mothers are the centre of life in a household, the duty of educating her children is her first duty ... for the benefit of a larger family called society where later these children will be members. That is why we want education for our girls.” (Surjomihardjo, 1978: 279)

Due to the prevalence of Islamic faith, the religion of Islam has great impact on confining the woman's family and social life. Aisyiyah was a women's and religious organization established in 1917 to guide Muslim women to purify their faith in God (Baried 1986). It made great contribution to the modernization of Indonesian women, particularly for the Muslim women, through a variety of activities including formal and informal education, community welfare and home economics. Aisyiyah encouraged women to be aware that they shared the responsibilities and duties with men "in running a household, in building up the community, and in service toward God" based on one of the verses of the Holy Qur'an:

"The believers, men and women, are protectors, one of another: they enjoin what is just, and forbid what is evil: they observe regular prayers, practice regular charity, and obey Allah and His apostle. On them will Allah pour His mercy: for Allah is Exalted in Power, Wise." (Ibid, p. 149)

Basing all its activities on the verses of the Holy Qur'an not merely raised the religious consciousness of women, but more importantly, it established a solid rationale for involving women in the decision-making process.

Indonesian government also actively promotes the development of women. The Guidelines of State Policy, an important document covering all aspects of the Indonesian society, contains a whole paragraph confirming the indispensable role of women in development (ibid). The 1945 Constitution ensures rights and equal responsibilities for men and women.

Despite enjoying these favorable conditions for their development, Indonesian women are still in an inferior position in various domains of social life. They are seen doing all kinds of work roughly equivalent to or even more than men do in the field, in the market and around the household but the ability to work independently and earn their own incomes does not mean that women are treated the same way as men. As Errington (1990: 6-7) argues, "...women in many of these societies are assumed to be more calculating, instrumental, and direct than men, and

their very control of practical matters and money, their economic ‘power,’ may be the opposite of the kind of ‘power’ or spiritual potency that brings the greatest prestige; it may assure them of lower rather than higher prestige”. Although the gender disparities have disappeared at the primary level and also closed dramatically at the secondary level, the gender bias intensifies with the increase of age or educational levels (Oey-Gardiner and Suprpto 1997). There is no policy or any official barrier against girls attending school at any educational level but a socio-economic impediment does exist.

Previous researches indicate that Muslim girls lag behind in education. In Indian society, Muslim girls are among the least educated. The barriers for them to be educated include the indifference of the government to the conditions of Muslim women, reflected in dismal budgetary allocation for their education; widespread poverty in the community; opposition to co-education after a certain level; shortage of girls schools and women teachers; and early marriages (Hasan and Menon 2005). In another study for Malawi, Doctor (2005) finds that Catholic women have higher education than Muslim women. More Muslim women reported that they had never been to school compared with the average ever-married woman. This is because: 1) Christian groups obtain financial assistance from the Western counterparts which can be used for the schooling of women; 2) Christian are more likely to live in the urban area where they can have better access to schools and also higher aspiration for formal education than people living in the rural areas. Among these reasons for poor education of Muslim women, opposition to co-education and shortage of women teachers are related to the belief in Muslim. According to Kamguian (2005:21), “Women living under Islamic law cannot travel, work, study, and leave their houses without their fathers’ or husbands’ permission.” The other reasons are more related to the poor economic status of women other than the religious belief itself.

Social theories have paid great attention on the role of education in human resources development, economic growth, social stratification, and social economic mobility for individuals. However, the theoretical bases for educational gender disparities are not that prolific (Pong, 1999: 155; Jayaweera, 1999:149). Bourdieu who was criticized about ignoring gender differences in his reproduction theory of the early time (Robinson and Garnier 1985), points out that education is a central ideological site for the reproduction of gender inequality (Dillabough, 2003: 376). Greenhalgh's study in Taiwan support some earlier feminist theories on that "the low status of women is rooted in partriarchal family systems, and that the decline in women's status stems from the interaction of these patriarchal institutions with capitalist institutions" (Greenhalgh, 1985: 303). She emphasizes that the patriarchal family is the fundamental cause of sexual stratification in the postwar period. Capitalism uses the gender differences created by the patriarchal family to offer women dead-end and low-paying jobs. The inferior status in the labor market in turn reinforces women's subordinate status in the family and reaffirms parents' preference for investing education for sons rather than for daughters (ibid: 304). She further indicates that one of the mechanisms by which the sexual stratification is perpetuated is the education of daughters. The agents perpetuate the sexual hierarchies are not only men, but also married women (ibid). Parish and Willis (1993: 864-868) provide more systematical summary on theories about how parents choose to invest differently in sons' versus daughters' education. These theories include:

- 1) Becker's assumption of altruism of parents' behavior – parents are altruistic in that they care about the welfare of their children. However, it does not mean that they care about all children equally. Parents choose to invest in their children in the way that can maximize the

expected profit of the entire family. According to this perspective, parents invest far less in education of girls because the returns to educating girls are smaller than that for boys;

2) Lingering patriarchy – this theory is similar to what was mentioned in the Greenhalgh’s study (Greenhalgh, 1985). The interaction and reinforcement of between patriarchal tradition and the growth of market forces form a vicious cycle that worsens women’s economic and social status;

3) Resource dilution – regardless of altruism, the resources available for parents to invest in their children’s education are limited. Siblings compete with each other for parents’ resources. Large numbers of siblings dilute family resources and thus lower education for all children. Due to lack of resources, parents may sacrifice the older daughter’s educational opportunity for supporting younger brothers through school (Tang 1981; Salaff 1981; Blake 1989; Parish and Willis 1993);

4) Credit constraints and conditional altruism – on the one hand, even if the rate-of-return for education is same for two children in the same family, parents may make different investment decisions for each of them for they were born in different time when the family face different credit constrains. On the other hand, even though parents are altruistic, their altruism is conditional on the interests of the family rather than the interests of the child. In the traditional society, sons retain loyalty to their family of origin throughout their lives while daughters leave the family of origin upon marriage. Therefore, investing in the daughter’s education would be expected to benefit her husband’s family rather than her family of origin.

Empirical studies have documented the differences for males and females in the reproduction of family socioeconomic status and in educational attainment. Robinson and Garnier (1985) find that men and women are different in reproduction of ownership and



reproduction of control over labor power. Reproduction strategies that are effective in reproducing class privilege for men do not work well for women. Class reproduction is weaker among women than men but they are not certain about the source of difference. In education, Hong Kong girls became more likely than boys to continue from lower secondary to upper secondary school over time but girls less likely to continue to university (Pong and Post 1991; Post 1994). Graetz (1988) also finds in Australia that, despite the decline of the social background effect on years of education, gender differences remain significant in higher educational attainment. Besides the pure disparities in educational attainment, some researchers further compare the educational difference between different social groups with that between boys and girls (Pong 1999). Knodel and Jones propose that population policy emphasizing the gender gap in education as a means to achieve sustainable development has missed the mark because nowadays socioeconomic background differentials in education are much more pronounced than gender differentials in education (ibid). Based on their argument, Pong uses the evidence from Malaysia to confirm that gender inequality in education often masks educational inequality by social class and ethnicity (ibid).

## CHAPTER III

### Methodology

#### *Introduction*

This chapter presents the research design and procedures for data analysis. It is divided into three sections: data and sample design, variable operationalization, and data analyses.

#### *Data and Sample Design*

##### The Original Survey

*Waves* – The data for this study are derived from the Indonesia Family Life Survey (IFLS) wave 2 conducted in 1997 in the country of Indonesia. Sponsored by a number of international and U. S. national organizations<sup>1</sup> and undertaken by the RAND Corporation, University of California at Los Angeles (UCLA) and the Demographic Institute of the University of Indonesia (LDUI), the Indonesia Family Life Survey is a nationally representative and longitudinal survey. The base year survey (IFLS1) was carried out in 1993. The survey sample represented about 83% of the Indonesian population living in 13 of the country's 26 provinces. The second wave of the IFLS (IFLS2) followed up with the same sample four years later in 1997. In 1998, a 25% subsample (IFLS2+) was surveyed in order to check the instant impact of Indonesia's economic crisis. The third follow-up (IFLS3) was fielded in 2000. The data of IFLS3 were not released to the public until 2004 when most of the data analysis for this study had been done. Therefore, most of the data used in this study come from IFLS2. Some

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<sup>1</sup> Funding for IFLS2 was provided by the National Institute on Aging (NIA), the National Institute for Child Health and Human Development (NICHD), U. S. Agency for International Development (USAID), the Future Group (Policy Project), the Hewlett Foundation, the International Food Policy Research Institute (IFPRI), John Snow International (the OMNI project), and the World Health Organization (Frankenberg and Thomas 2000).

information missing in IFLS2<sup>2</sup>, such as parents' occupation and the child's early residence (rural/urban), comes from IFLS1 and IFLS3.

*Purposes* – The purposes of the original survey were to provide data for studying a number of individual-level and household-level social behaviors and outcomes under the circumstance of Indonesia, a rich laboratory for sociological research for its heterogeneity and considerable economic and social fluctuation. Therefore, the original survey collected information at the individual and household levels, “including multiple indicators of economic well-being (consumption, income, and assets); education, migration, and labor market outcomes; marriage, fertility and contraceptive use; health status, use of health care, and health insurance; relationships among coresident and non-coresident family members; processes underlying household decision-making; transfers among family members and inter-generational mobility; and participation in community activities” (Frankenberg and Thomas 2000:1). In addition to the individual-level and the household-level information, the IFLS also collected data at the community-level. Although the community-level data are not used in my study, it is worth mentioning that they provide detailed information on the physical and social environment of the communities where the sampled households are located and on the health and educational facilities that serve residents of those communities (ibid).

*Sampling* – The sampling scheme for IFLS2 followed that for IFLS1, which took stratified sampling on provinces, then randomly sampled enumeration areas (EAs) within provinces, and finally randomly selected households within selected EAs. According to the description of the data, “Provinces were selected to maximize representation of the population, capture the cultural and socioeconomic diversity of Indonesia, and be cost-effective to survey

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<sup>2</sup> Data for some modules in the household survey of IFLS2 are not yet released for the public use file; preparation is not complete. Data files on migration (MG) and labor force participation (TK) are among those missing.

given the size and terrain of the country. The sample included 13 of Indonesia's 26 provinces containing 83% of the population. The IFLS randomly selected 321 enumeration areas in the 13 provinces, oversampling urban EAs and EAs in smaller provinces to facilitate urban-rural and Javanese---non-Javanese comparison" (Frankenberg and Thomas 2000:4). At the individual level, several members within a household were randomly selected to provide detailed individual information in IFLS1. These members include:

- The household head and his/her spouse
- Two randomly selected children of the head and spouse, aged 0 to 14
- An individual age 50 or older and his/her spouse, randomly selected from remaining members
- For a randomly selected 25% of the households, an individual age 15 to 49 and his/her spouse, randomly selected from remaining members. (ibid, p. 5)

As a result, 7,224 household and over 22,000 individuals were interviewed in IFLS1. In IFLS2, at the household level, 94% of IFLS1 households were relocated and re-interviewed.

Additionally, 878 split-off households<sup>3</sup> were added into the sample. At the individual level, the interviewer attempted to interview all household members in the original IFLS1 households and all target respondents<sup>4</sup>, their spouses as well as any of their biological children living in the split-off households. (ibid, p. 5-7)

*Survey instruments* – The original IFLS surveys include the household survey and the community-facility survey. Both surveys are divided into books that were addressed to different respondents and subdivided into topical modules. The household survey on which I concentrate in this study is composed of ten books. Book K, book 1 and book 2 collect information at the household level including the economic well-being of the household (household expenditures and income), housing characteristics, and economic shocks experienced by the household in the

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<sup>3</sup> Split-off household refers to new household interviewed in IFLS2 because it contained a target respondent. Compare original household (Frankenberg and Thomas 2000: 38).

<sup>4</sup> Target respondents refer to IFLS1 household member selected for IFLS2 either because he/she had provided detailed individual-level information in IFLS1 or had been age 26 or older in IFLS1 (ibid).

previous five years. The other seven books (book 3A, book 3B, book 3P, book 4, book 5, book US and book EK) collect data at the individual level from different groups of respondents covering a wide range of information on their education, marriage, work, migration, pregnancy, health, non-coresident family members (parents, siblings and children) and etcetera. Table 3.1 outlines the respondents, structure and contents of the household survey in more detail.

A complete description of the original IFLS2 data is found in the 7 volumes of the documents of the Indonesia Family Life Survey prepared by RAND (2000).

### My Analytic Sample

*Purpose* – While based on data from the original study described above, the purpose of this analysis is to examine the role of state policies in expanding nine-year compulsory education and reducing education inequality based on social origins in three questions: 1) How the school transitions for primary and lower secondary school changed over time under the influence of the state policy on nine-year compulsory education; 2) how the effects of family background changed over time with the change of the education policies; 3) how were girls doing in basic education for such an Islamic country. The detailed purposes of this study are stated in the first chapter of this paper.

*Survey instruments* – To fulfill these purposes, I analyzed data from the questionnaire that contains a series of open and closed-ended questions to measure the parent's occupation, household characteristics, mother's education, family size, total number of coresident and non-coresident siblings, and the individual's demographic characteristics. Since not a single original data file contains all the variables that I needed for this research, I have to select those variables from different files of the IFLS data. The books, modules and data files of the original

questionnaire that are selected and used in my analytic data are also indicated in Table 3.1 as well as the corresponding variables for this study embedded in them. The major books that I used are Book K, 3A and 3B. Book K contains the household roster. Books 3A and 3B include individual's retrospective and current information as well as the information about the existence and characteristics of non-coresident family members.

**Table 3.1**  
**The Related IFLS2 Household Survey Questionnaires  
 &  
 The Survey Instruments of My Analytic Data**

<i>The IFLS2 Household Survey*</i>			<i>My Analytic Data</i>		
<i>Respondent</i>	<i>Module</i>		<i>The original data file used</i>	<i>Related variables from the original data</i>	<i>Remarks</i>
<i>Book K: Control Book</i>					
Interviewer and household head, spouse, or knowledgeable other person	SC	Sampling and enumeration record	BK_SC	SC05 (urban/rural)	For the non-coresident children in sample I, the current location of their parent's household was taken as the approximate to their place of residence during their school age of primary and lower secondary school.
	AR	Household	BK_AR0	HHSIZE	

\* The IFLS2 household survey part is excerpted from Table 2.6 in "The Indonesia Family Life Survey (IFLS): Study Design and Results from Waves 1 and 2".

		roster	BK_AR1	(total # of household members) AR07 (sex) AGE_97 (age in 1997)	
	KRK	Housing characteristics (interviewer's observations)	BK_KRK	KRK06 (# of rooms in the house)	
<b>Book 2: Household Economy</b>					
Household head, wife of household head, or other household member	KR	Housing characteristics	B2_KR	KR03 (ownership of the house) KR11 (does house use electricity)	
<b>Book 3A: Adult Information (part 1)</b>					
Each household member age 15 and older (IFLS1: administered to only a subset of adult household members)	MG	Migration history	B3A_MG1	MG05 (the province where you lived at the age of 12) MG08 (was the place a village, small town or big city)	Because the data of this module in IFLS2 have not been released, I looked up the related information in the same module of IFLS1 and IFLS3.
	TK	Employment history	B3A_TK2	TK20A (occupation)	Because the data of this module in IFLS2 have not been released, I looked up the related information in the same module of IFLS1 and IFLS3.
<b>Book 3B: Adult Information (part 2)</b>					
Each household member age 15 and older (IFLS1: administered to only a subset of adult household	BA	Non-coresident family roster and transfers	B3B_BA0 B3B_BA2 B3B_BA6	BA08M (mother's highest level education) BA09M (highest grade mother	For sample I, I looked up the information on non-coresident children from B3B_BA6; for sample II, I

members)				<p>completed)  BA30 (total # of sibs not in household)  BA64 (gender of child)  BA66 (child's age)  BA68 (child's highest level of education)  BA69 (highest grade child completed)  BA80 (primary activity of child)</p>	<p>looked up the information on non-coresident parents from B3B_BA0 and non-coresident siblings from B3B_BA2.</p>
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**Book 4: Ever-Married Woman Information**

Each ever-married woman age 15-49 (IFLS1: administered to only a subset of ever-married woman age 15-49)	BA	Non-coresident children and transfers	B4_BA6	<p>BA64 (gender of child)  BA66 (child's age)  BA68 (child's highest level of education)  BA69 (highest grade child completed)  BA80 (primary activity of child)</p>	<p>Non-coresident children of a given man and wife are asked about only in B4_BA6 if the wife is a book 4 respondent. There should be no duplicates for a non-coresident child from both the husband and the wife.</p>
	CH	Pregnancy and infant feeding history	B4_CH1	<p>CH08 (gender of the child)  CH31A (child's highest level of education)  CH32A (highest grade child completed)  CH34A (primary</p>	<p>B4_CH1 helps me to get the non-coresident children's information for Book 4 respondents who were not panel respondents or who did not have any children in</p>



		activity of IFLS1. child)	
<b>Book Proxy</b>			
Someone who answered for the intended respondent to book 3A, 3B, or 4 in his/her absence	Shorten versions of other modules: Book 3A – KW, MG, DL, TK Book 3B – PM, KM, KK, MA, PS, RJ, RN, BA Book 4 – BR, CH, CX	B3P_BA6	BA64 (gender of child) BA66 (child's age) BA68 (child's highest level of education) BA69 (highest grade child completed) BA80 (primary activity of child)
Not used in IFLS1			

*Sample design* – In the original data files containing the household survey, a household or individual is the unit of observation. If the level of observation is household, there is no information about each individual within the household; if the level of observation is individual, there is no detailed parents' information. Therefore, I have to reorganize the data such that the unit of observation will be the child, with his/her parents' information in the same line following one's own information.

The base data file (bk\_ar1) is the household roster in Book K. The household roster lists all household members currently living in the household in relation to the household head, such as the wife, their children (birth, step, adopted), parents, in-laws, siblings, siblings in-law, grandchildren, grandparents, aunts and uncles, nieces and nephews, cousins, boarders, and servants (non-family members). The definitions of the household, head of the household and the householder are clearly stated right before the roster in the survey questionnaire (IFLS survey 1997, Book K, p. 2):

“Household is a person or group of persons who occupy a part of or an entire building and who usually live together and eat from the same kitchen. What is meant by eating from one kitchen is that the arrangement to fulfill daily necessities is jointly managed.

Head of the household is a person among the group of householders who is responsible for satisfying daily necessities of the household or a person who is regarded/assigned as the head of the household.

Householder is anyone who usually lives in the household, whether she/he is at home during the survey or is temporarily absent. A householder who has been away for 6 or more months, and a householder who has been away for less than 6 months but plans to move out/be away for 6 or more months, is not regarded as a householder. A guest who has stayed in the household for 6 or more months or a guest who has stayed in the household for less than 6 months but plans to stay for 6 or more months is regarded as a householder.”

The structure of the base data file bk\_ar1 and that of my analytic data are depicted in Figure 3.1. The base data file contains each household member with his/her general social

**Figure 3.1**

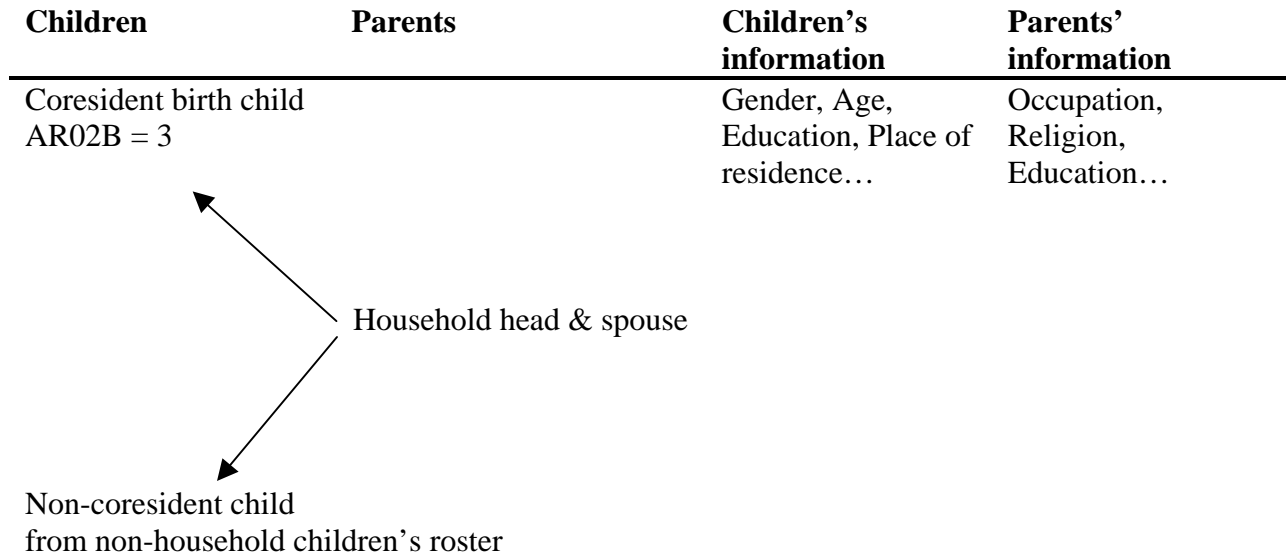
**General Structure for the Original IFLS Household Sample, My Analytic Sample I and Sample II**

***Original IFLS Household Sample:***

<b>Household member</b>	<b>Relation to household head (AR02B)</b>	<b>Household member's social demographic information</b>
001	1. Head	Age, Religion, Marital status, Education...
002	2. Spouse	
003	3. Child	
004	4. Adopted child	
005	5. Son/Daughter-in-law	
...	6. Parent	
	7. Father/Mother-in-law	
	8. Sibling	
	9. Brother/Sister-in-law	
	10. Grandchild	
	11. Grandparent	
	12. Uncle/aunt	
	13. Nephew/niece	
	14. Cousin	
	15. Servant	
	16. Relative	
	17. Non-relative	
	18. Tenant	
	19. Friend	
	21. Ex spouse	
	22. Family of ex spouse	
	91. Merged with other household	
	92. All target members died	

**Total Cases: 39714**

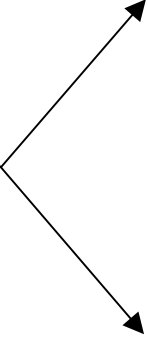
**Constructed Sample I:**



**Primary family = Current family**

**Total cases: 14552**

**Constructed Sample II:**

<b>Children</b>	<b>Parents</b>	<b>Children's information</b>	<b>Parents' information</b>
	Coresident parents AR02B = 6 and AR02B = 7	Gender, Age, Religion, Education, Place of residence...	Education
Household head & spouse + their coresident siblings (AR02B = 8 and AR02B = 9) + the total # of non- coresident siblings			
	Non-coresident parents from non-household parents' roster		

**Primary family ≠ Current family**  
**Total cases: 28730**

demographic information. Based on each householder's relation to the household head, I restructure the data into two study samples. Both samples have the children as units of analysis.

The first study sample contains the household head's biological children living in the household. There are few step or adopted children (343 cases, only occupying 2% of the total household children), and they are excluded from this study.<sup>5</sup>

In this sample, all the coresident children are biological children of the household head but for the non-coresident children<sup>6</sup> (36% of the sample one), it does not specify whether they are biological or stepchildren of the household head. The non-coresident child could be the biological child for either the household head or the spouse but the stepchild for the other. The primary family in this sample is the current family led by the household head. The primary family is defined as the family whose current situation or status has direct influence on the second generation.

In the second study sample, the household head or his/her spouse is the child. We have information about the household head's coresident parent and his/her spouse's coresident parent. Their non-coresident parent's information is also available in the non-coresident parent's questionnaire in Book 3. The coresident parents (father and/or mother) are birth parents, whereas we do not know if the non-coresident parent is a birth parent. On the contrary to Sample One, the primary family in Sample Two is not the current family led by the household

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<sup>5</sup> Three groups of in-household children were not included in this study:

- 1) Neither birth father nor birth mother lived at home (e.g. adopted children);
- 2) Neither birth father nor birth mother was the household head (e.g. children with grandparent was the household head or those with step-parent was the household head);
- 3) Some marginal relations (e.g. uncle / aunt and their children).

<sup>6</sup> The parents' non-coresident child's information is merged from two sources: one is the module BA6 (non-coresident child's questionnaire) of Book 3 for the father's non-coresident child; the other is the module BA6 and CH (pregnancy and infant feeding history) of Book 4 for the mother's non-coresident child. For all fathers and mothers older than 49 years old, the non-coresident child's information comes from the data files b3b\_ba6 and b3p\_ba6; for the mother greater than or equal to 15 years old but less than or equal to 49 years old, the non-coresident child's information comes from the data files b4\_ba6 and b4\_ch1.

head and his/her spouse but the previous family of their parents. The current family status can only affect the educational attainment of their children but not the educational attainment of themselves. Thus, some variables, which measure the current household characteristics, such as the size of the house, ownership of the house and number of rooms, are not available in Sample Two. In addition, 67% of the children of this sample do not have information on father's or mother's occupation<sup>7</sup>. In Sample Two, 93% of the parents are non-coresident and 70% of fathers and 53% of mothers have died. Therefore, I do not use the parent's occupation in the analysis of this sample.

After restructuring the data, the two new samples show some difference in the composition of population compared with the original sample (see Table 3.2). Whereas gender composition is largely the same, age composition in Sample One and Sample Two are quite different. In the original sample, individuals no more than 30 years old comprise 62% of total sampled population. In Sample One, the percentage of individuals in the same range of ages reaches 84.9% while in Sample Two, only 19.8% of individuals are in the same range of ages. In contrast, people older than 31 years old (including 31) occupy 80.2% of the total population of Sample Two. Thus we can see that Sample One biases towards younger ages whereas Sample Two biases towards older people. This is to be expected because children in Sample One are the children of the household heads, and children in Sample Two are the household heads and their spouses themselves. Although Sample One and Sample Two biases against different groups of people, the age can be balanced when combining the two samples together.

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<sup>7</sup> The reason for so many missing values on parents' occupation is because the occupation information was not collected in the original data for non-coresident parents who died 12 months earlier or more and for those whose primary activity now/before his/her death was not working.

**Table 3.2**

**Gender and Age Group Composition of the Samples**

	<b>The Original Sample</b>		<b>Sample I</b>		<b>Sample II</b>	
<b>GENDER</b>	Male	48.6%	Male	50.3%	Male	47.0%
	Female	51.4%	Female	49.7%	Female	53.0%
<b>AGE GROUP</b>	0-10	19.9%	0-10	23.0%	0-10	0.2%
	11-20	23.5%	11-20	33.1%	11-20	3.3%
	21-30	18.6%	21-30	28.8%	21-30	16.3%
	31-40	13.7%	31+	15.1%	31-40	29.0%
	41-50	8.9%			41-50	21.9%
	51-60	7.2%			51-60	16.2%
	61-70	4.9%			61-70	9.3%
	71-80	2.3%			71-80	3.2%
	81-90	0.8%			81-90	0.5%
	91-100	0.2%			91-100	0.1%

**The Strength and Weakness of the Data**

*Strength* – According to Frankenberg and Thomas (2000: 2), the IFLS data have the following strengths:

The IFLS is among the few large-scale longitudinal surveys available for the developing countries and is the only one available for Indonesia. The data are nationally representative. The IFLS sampling area covered 13 of Indonesia's 27 provinces containing 83% of the population (ibid, p. 4). The data contain information for individuals from multiple points in time. From the first wave to the third wave, the survey has followed the same respondents for seven years. Although this study mainly use the second wave of the IFLS, the longitudinal feature of the data is still helpful when some information of interest is lacking from the second wave. For instance, when the work and migration history of the individual are lacking in wave two, I can go back to wave one and go forward to wave three to find out the concerning information for the same



individual ascribing to the longitudinal feature as well as the high re-interview rate mentioned below.

The IFLS collected both current and retrospective information for many aspects of the respondent's life. For example, it provides not only the respondent's current residence but also his/her residence at the age of 12 when the children were about to make the school transition from primary to secondary school. Therefore, the relationship between place of residence and the child's educational attainment being tested is more accurate than the relationship being tested using the current residence information.

Another advantage of the data is that it includes information on educational attainment of all children, regardless of whether they are currently living in the household or not. In this way, it avoids biasing against those children who marry or leave home earlier. Such children are also more likely to be less educated and from more disadvantaged families.

*Weakness* – The imperfection information on parents' occupation is a major limitation to the purpose of this study. This is caused by two problems of the original data. One is that public use file for some IFLS2 data has not yet been completed. Data from the household survey on migration (module MG) and labor force participation (module TK) are among those unreleased data files. As a result, I cannot get the respondent's occupational information directly from the IFLS2 data. Instead, I have to go back and forth to IFLS1 and IFLS3 to find the occupational information for the individuals who I am concerned with. During this process, the loss of information due to sample attribution is unavoidable. The other problem is that information on occupation was different between coresident and non-coresident parents. The IFLS did not collect occupation information for non-coresident parents who died more than twelve months earlier or whose primary activity at the time of survey or before death was not "work".

Therefore, the variable of parent's occupation cannot be used for the older population of children in sample II.

A second weakness of the data resides in the fact that my analytic data are mostly confined to the birth parent. On one hand, in spite of the original data including various family relations<sup>8</sup>, the composition of my analytic data has to be limited to the direct consanguinity of the household head (children or parents of the household head) in combined consideration of the purpose of this study and the feasible manipulation of the data. On the other hand, since the parent's information was not listed directly after each child, the handiest way to connect the parent's information to the child is through the personal ID of the birth parents. Therefore, most of the parents in my data are birth parents of the child.

A third limitation on the data is the time-varying problem of the explanatory variables. Some of the explanatory variables are time varying, such as household characteristics, number of siblings and place of residence. For such variables, the results would be more accurate if I could use the information exactly describing the situation at the time when the result variables happened. In this case, that is to say, I'd need to have the information on household characteristics, number of siblings and place of residence for the individuals when they were right about to make the school transition. However, due to the limitation of the data, I did not get the time-varying information on the household characteristics and the number of siblings. Time-varying information is extracted only for some parts of the data.<sup>9</sup> Because of these potential problems, the analyses presented here are more accurate for younger cohorts who have more concurrent information. For the older cohorts and those who live out of the household, the information is not as accurate.

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<sup>8</sup> See the codes of the variable AR02B (relation to the household head in 1997) in Book K of IFLS2.

<sup>9</sup> The detailed information on the time-varying problem for each time-sensible explanatory variable will be illustrated in the "variable operationalization" section.

Finally, I have limited information on Sample Two. As I stated above in the sample design of my analytic data, Sample One and Sample Two are complementary because the children of the IFLS2 household heads are relatively young, while the IFLS2 household heads and their spouses are relatively old. Combining analyses of these two samples enables me to cover a broad age range. However, some explanatory variables, such as parents' occupation, household characteristics and family size are unavailable or non-time-varying. Because of the limitation on the explanatory variables in Sample Two, the analyses presented here are based mainly on the first sample. The second sample is used to supplement information about the older cohorts that was not readily available in the first sample and to provide enough age range for analyzing the trend in the child's background effects on their basic educational attainment.

### *Variables*

Based on the conceptual model proposed in Chapter II and responding to the purpose and research questions described in Chapter I, I derive a series of questions from various books and modules of the original survey and recode the responses for further analysis. The variables and their codes are concluded in Table 3.3, as well as their source questions in the original survey.

**Table 3.3**

**Manipulation of Variables**

<b>Variables</b>	<b>Name</b>	<b>Scale</b>	<b>Code</b>	<b>Questions</b>
<b><u>Independent Variables</u></b>				
<b>Family Background</b>				
<i>Economic Capital</i>				
Parent's occupation	re_occ	Nominal	0 = agricultural workers 1 = professional/administrative occupation 2 = blue-collar workers	What are your primary duties at your workplace?
Household characteristics: Number of rooms	krk06	Interval	Total number of rooms in the house	How many rooms (bedrooms, living room, dining room, kitchen, bathroom, etc.) are in this house?
Electricity	electric	Nominal	0 = No 1 = Yes	Does the household utilize electricity?
Ownership of the house	own	Nominal	0 = No 1 = Yes	Do you own your house? (Based on the original question: "What is the status of this house?")
<i>Human Capital</i>				
Mother's education	re_meduc	Nominal	0 = None 1 = Elementary School 2 = Post-elementary education	What the highest level of schooling did you attend?

*Social Capital*

Family size	hhsz	Interval	Total number of household members	Constructed variable by the data collector based on the household roster
Number of siblings	sibs1	Interval	Total number of siblings (coresident + non-coresident)	Constructed by me based on the household roster and the non-coresident children roster / non-coresident siblings roster
Family's religion	non-Isl	Nominal	0 = Islam 1 = non-Islam	Constructed by me based on the question on household member's religious affiliation in the household roster

## Social Demographics

Gender	male	Nominal	0 = female 1 = male	Constructed by me based on the gender of household members and the non-coresident children
Place of residence: Urban/rural	urban	Nominal	0 = rural 1 = urban	Is the place (where you were 12 years old) a: rural or urban place?
Birth Cohorts	re_age (for sample I)	Ordinal	0 = 1988-1997 (age 0-9) 1 = 1982-1987 (age 10-15) 2 = 1978-1981 (age 16-19) 3 = 1973-1977 (age 20-24) 4 = 1968-1972 (age 25-29) 5 = 1960-1967 (age 30-37) 6 = before 1959 (age 38+)	Constructed by me based on the age of household members and the non-coresident children
	re_age2 (for combined sample I and II)		0 = 1988-1997 (age 0-9) 1 = 1982-1987 (age 10-15) 2 = 1978-1981 (age 16-19) 3 = 1973-1977 (age 20-24) 4 = 1968-1972 (age 25-29) 5 = 1960-1967 (age 30-37) 6 = 1948-1959 (age 38-49) 7 = 1938-1947 (age 50-59)	

## Dependent Variables

### Educational Attainment

Primary school attendance given the whole sample	primary	Nominal	0 = No 1 = Yes	Did you ever attend primary school? (Constructed based on
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Primary school completion given primary school attendance	prim_c	Nominal	0 = No 1 = Yes	the highest level of schooling attended and the highest grade ever completed)  Did you complete primary school or not? (Constructed based on the highest level of schooling attended and the highest grade ever completed)
Jr. high school attendance given primary school completion	jrhigh	Nominal	0 = No 1 = Yes	Did you ever attend Jr. high school? (Constructed based on the highest level of schooling attended and the highest grade ever completed)
Jr. high school completion given junior high school attendance	jrhi_c	Nominal	0 = No 1 = Yes	Did you complete Jr. high school or not? (Constructed based on the highest level of schooling attended and the highest grade ever completed)

### Dependent Variables

The child's educational attainment is the outcome of this study. The indicators of educational attainment in the original survey were defined as "the highest level of schooling attended" or "the highest grade ever completed". I created four indicators: primary school attendance given the whole sample population; completion of primary school given primary school attendance; junior high school attendance given primary school completion; completion of junior high school given junior high school attendance. All of these four measures of educational attainment are coded dichotomously: individuals who ever attended primary or junior high school or completed primary or junior high school are coded as 1 and those who did not do so are coded as 0. I choose school transitions instead of total years of schooling to measure educational attainment because some scholars suggested that school transitions would be more accurate than net attainment in examining family background effects on the student's educational attainment (Post 1996:156).

### Explanatory Variables

The explanatory variables include two categories: family background and social demographics. Family background is indicated by parent's occupation, household characteristics (total number of rooms, electricity and ownership of the house), mother's education, family size, total number of siblings, and family religion. Social demographics consist of gender, birth cohorts and urban/rural residence.

*Parent's occupation* – Social scientists usually regard occupational hierarchy as an important indicator of social class and social stratification. Treiman (1994: 208-211) proposed



that the occupational hierarchies in the contemporary world are “substantially invariant” for different countries no matter what level of industrialization the country is situated. Those occupations with high prestige always require “a high degree of skill or which entail authority over other individuals or control over capital” (ibid).

The original question regarding occupation in the survey was an open-ended question: “What are your primary duties at your workplace?” The respondents for Book 3A (adult retrospective information) answered the question in Bahasa Indonesia. The texts of their answers were not directly translated into English. Instead, the responses were coded into 2-digit occupation categories using the International Standard Classification list of occupation codes. The codes remained the same over three waves of IFLS. There were over one hundred codes of various types of occupation in the original data, which were grouped into seven major categories<sup>10</sup>:

1. professional/technical;
2. administrative and managerial;
3. clerical and related workers;
4. sales workers;
5. service workers;
6. agricultural, animal husbandry, forestry workers, fisherman and hunters;
7. production and related workers, transport operators, other laborers and military soldiers.

I further coded the seven groups into three groups: 1) First two categories in the original data together form *professional/administrative occupations* (coded as 1). This group positions at the top of the occupational hierarchy, comprising professionals whether self-employed or salaried, administrators and officials in government and in public or private corporations; managers in industrial establishments, and supervisors of non-manual employees; 2) The original category 3, 4, 5 and 7 form the blue-collar workers (coded as 2) which include clerical employees in

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<sup>10</sup> See Appendix A “Occupation codes used in the IFLS-HH” in IFLS1, Volume 4.

administration and commerce, sales personnel and other rank-and-file service workers. This group of incumbents could also be taken as a non-manual labor force. The original category 7 is termed manual workers. It takes all skilled, semi-skilled and unskilled manual workers in all branches of industry. They are the working class in the society; 4) Finally, the group of agricultural workers (original category 6) is taken as the reference category (coded as 0) because it is expected to constitute the highest percentage of our respondents in such an agricultural society as Indonesia.

I use father's occupation if it is not missing. Otherwise, I use mother's. Some of the children in my sample only lived with one of the parents and thus they did not have the information for the other one. If I solely used father's occupation or mother's occupation, the missing values would be over 30% for either of them. However, when I am using parent's occupation, the percentage of missing values is decreased to 12%.

*Household characteristics* – Household characteristics are composed of three variables: the number of rooms, using electricity or not and ownership of the house.<sup>11</sup>

*The number of rooms* is an interval scale variable. It is an estimate of how many rooms (bedrooms, living room, dining room, kitchen, bathroom, etc.) there are in this house. The answer was given by the interviewers' observation and at the end of their first visit to the household.

*Electricity* is derived from the question "Does the household utilize electricity?" It is an important contextual factor influencing the child's academic performance, especially those

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<sup>11</sup> Originally, besides these three, household characteristics also included the size of the house in square meters. It was proved by the correlation test that the size of the house was not correlated with the number of rooms in the house. This is because for some families, even though they did not have big houses, they would still have to divide the houses into more rooms in order to accommodate more people in the family. However, after examining this variable carefully, I had to take it out from the final analyses because it has very high standard deviation and skewness values.

children in the poor rural area. Children in households without electricity are greatly limited by the available hours of study after class. Electricity is dummy coded 1 if the household utilizes electricity and 0 if the household does not utilize electricity.

*Ownership of the house* is an indicator of family's economic status in western countries. However, it is not necessarily the case in Indonesia. In rural places, farmers usually own their own houses but it does not mean that they are richer than the urban residents who rent an apartment. In the survey, the interview asked, "What is the status of this house?" and offered four choices to the respondents: self-owned, occupying, rented/contracted, and other. I recode it into a dummy variable with 1 meaning the respondent owns the house and 0 meaning the respondent does not own the house.

*Mother's education* – Mother's education is an indicator of family's human capital. It is measured by the highest level of schooling that the mother attended. The original question gave nineteen choices for level of schooling including "don't know" and "missing". I recode it into a dummy variable: no school is the reference group coded 0; elementary school is coded 1; post-elementary education, including junior high school (both general and vocational), senior high school (both general and vocational) and post-secondary school, is coded 2. Mother's education can be regarded quite constant over a child's growth. It is not so time-sensitive as the other variables such as household characteristics.

*Family size* – Family size is measured by total number of household members. This is an interval variable created by the data collectors and calculated based on the household roster (Frankenberg et. al., 2000: 44).

*Number of siblings* – Number of siblings is an interval variable measuring the total number of siblings both in household and out of household. It is an important indicator of the

economic and social capital available for each child in the family. In this study, I also take non-coresident siblings into account for they also diluted parents' resources before they left their parents' home. The original survey had no questions on these two variables. I add up the coresident and non-coresident children by gender.

*Family religion* – Family's religious affiliation is an important indicator of social capital possessed by the parents. It not only suggests the family's social network but also prefigures parents' attitudes toward children's education, especially for girls. Family religion is measured by either father's or mother's religion in Sample One. When father's religion was not missing, I use the father's; otherwise, I use the mother's religion as the family religion. The reason for missing father's information was various. It could be because the father had died, he had left home or for some non-coresident children, their information was only attached to their birth mothers. For the older cohorts in Sample Two, family religion is measured by their own religious affiliations since most of their parents had died or live out of the household and thus had not provided such information. It is also true that the child commonly inherits the family's religious affiliation, especially in the conservative oriental society.

For the question on religion in the original survey, there were six choices: Islam, Protestant, Catholic, Hindu, Buddha and others. I created two categories: a) Islam, which is the reference group, b) non-Islam, including Protestant, Catholic, Hindu, Buddha and other religions.

*Gender* – Gender is a dichotomous dummy variable with 0 equals female and 1 equals male. Female is used as the reference group.

*Birth Cohorts* – Birth cohorts is a recoded nominal scale variable for age, which refers to the current age at the time of the survey (1997). Children's birth cohorts are grouped in the same way for Sample One and Sample Two for individuals born after 1959. However, Sample Two

has two additional birth cohorts born before 1959: 1948-1959 and 1938-1947 in order to balance the distribution of the age and have some older cohorts included in the study.

For Sample One, age distribution is skewed to the younger cohorts. People over 30 years old only occupy 15% of the total sample population. Considering that the purpose is to investigate the impact of a series of compulsory education policies from 1973 to 1994, I divided the age into seven birth cohorts: 1988-1997 (age 0-9), 1982-1987 (age 10-15), 1978-1981 (age 16-19), 1973-1977 (age 20-24), 1968-1972 (age 25-29), 1960-1967 (age 30-37), and before 1959 (age 38+). Children 15 years old or younger in 1997 were 12 years old or younger in 1994 when the last compulsory education policy concerning lower secondary schooling was enacted, which means these children were fully exposed to all of the compulsory education policies. On the contrary, individuals at the age of 37 or older in 1997 were at the age of 13 or older in 1973 when the schooling building program began to be implemented. That is to say, these people had been too old to be affected by the national-wide primary school construction program, which was the earliest government effort on spreading compulsory education in Indonesia.

*Urban/rural residence* – Urban/rural residence is time varying. I used the residential information for individuals at the age of 12 when they were about to make the transition from primary school to lower secondary school. However, for those children who lived out of the household at the time of the survey in Sample One, their residential information at the age of 12 was not available. Under this circumstance, I used the current location of their parents' household as an approximation.

The survey asked, "Is the place (where you were 12 years old) a: village, small town, big city or don't know?" I recode the original variable into two categories: 0 = rural (village), 1 = urban (small town and big city). The reason that I recode it is to match the information for the

non-coresident children. Non-coresident children did not provide their residential information at the age of 12. What they have was the current location of their parents' household, which was categorized into rural and urban.

### *Methods & Data Analyses*

Based on the research questions of this study, two major analyses are developed to provide the conceptual framework of this study. The first analysis uses Sample One, whereas the second analysis uses Sample Two. The second analysis involves less family background variables but it covers a longer span of age than the first analysis does. This allows me to examine the change of the relationship between family background and the child's educational attainment over a longer period of time (43 years) despite not in detail composition of the family background. The interaction term of family religion and gender is added in the model for both analyses in order to examine the basic educational attainment of Islamic girls compared with non-Islamic girls, Islamic boys and non-Islamic boys. Figure 3.2 presents the overall research design with all dependent and independent variables of the study.

Each analysis of this study will be carried out in the following three steps:

First, frequencies will be calculated before further analyses to examine the data and identify missing values. I will use descriptive statistics to describe the percentage distribution or mean and standard deviation for each dependent and independent variable by different age groups and birth cohorts. This step provides an overall picture of the characteristics of the sample.

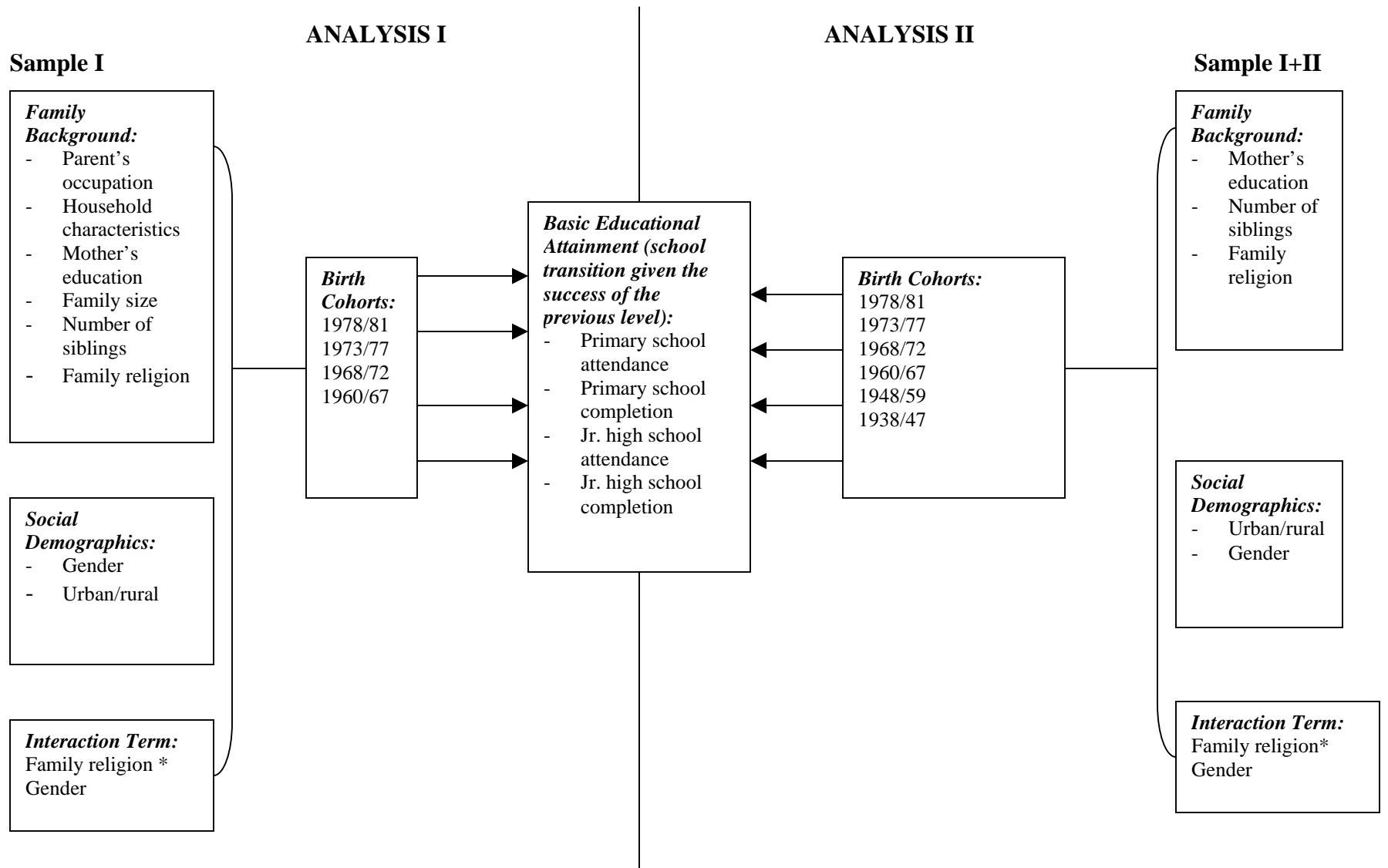
Secondly, I will examine the bivariate association between each dependent variable and each of the independent variables. As the dependent variables in this study are all dichotomous

nominal scale, I will use crosstabular analysis and chi-square tests for the bivariate relations between the dependent variable and each of the nominal scale independent variables; while for the interval scale independent variables, logistic regression will be used to check the bivariate relations. Bivariate relations enable me to focus on the main effect of one variable or another without considering the influence of other variables. The statistical significance of each determinant as it relates to the dependent variable will be assessed.

Thirdly, I conduct logistic regression analyses to examine determinants of primary school attendance, completion of the primary school, lower secondary school attendance, and completion of the lower secondary school. Because the outcome variables in this study are dichotomous dependent variables, I choose logistic regression to analyze the data. Binary logistic regression is a form of regression used when the dependent variable is a dichotomy and the independent variables are continuous or categorical variables. This method is especially useful since the predictor variables can be a mix of continuous and categorical variables. In addition, logistic regression makes no assumptions about the distributions of the predictor variables. It does not assume a linear relationship between the dependent and the independent variables. The dependent variable need not be normally distributed. Normally distributed error terms are not assumed.

I use the .05 level of significance to decide whether the dependent variables are significantly associated with the independent variables. The statistical analyses will be run by using the Statistical Package for Social Sciences (SPSS 2000).

**Figure 3.2**  
**Research Design**





## CHAPTER IV

### Results

#### *Introduction*

This chapter presents the results from the quantitative analysis of data derived from the survey instrument. Following the research design described in chapter III, this chapter is divided into two sections by two general analyses. Within each analysis, there are two semi-sections reporting the descriptive statistical results and specific findings of the multivariate logistic regressions respectively.

#### *Analysis I*

##### Descriptive Statistics

Table 4.1 presents distribution of the nominal scale variables in sample I by different birth cohorts. The ages of the children in sample I was originally divided into seven groups: 0-9, 10-15, 16-19, 20-24, 25-29, 30-37, 38 and above. However, for the final analyses, I delete the first two age groups and the last one. Most children in the first two age groups (0-9 and 10-15) are still too young to experience the whole basic education process, while the last age group (38 and over) includes fewer cases and has more missing values for some key explanatory variables such as parental occupation and mother's education than others. After deleting the first two age groups and the last one, the sample size is reduced from 26,857 to 14,552. Most of the sample population (31.1 percent) is among the 1973-1977 birth cohorts (20-24 years old). The 1978-1981 birth cohort (16-19 years old) is the second largest, occupying 25.3 percent of the total sample, followed by the 1968-1972 cohort (23.2 percent) and the 1960-1967 cohort (20.5 percent) in order of size.

**Table 4.1**  
**Distribution of Nominal Scale Variables Used in Analysis I, Indonesia Family Life Survey, 1997**

Variables	Birth Cohorts (Age Group)				
	- % (N) -				
	1978-1981 (16-19)	1973-1977 (20-24)	1968-1972 (25-29)	1960-1967 (30-37)	1960-1981 (16-37)
	25.3 (3678)	31.1 (4519)	23.2 (3370)	20.5 (2985)	100 (14552)
<b><u>Explanatory Variables:</u></b>	- % -	- % -	- % -	- % -	- % -
<b>Parent's occupation</b>					
Agricultural workers (ref.)	39.4	40.4	37.2	35.1	38.3
Prof./Manag./Admin.	7.4	5.6	5.2	4.1	5.6
Blue-collar workers	47.9	46.5	40.3	34.0	42.8
Missing	5.3	7.6	17.4	26.7	13.2
<b>Electricity</b>					
No (ref.)	15.9	14.3	12.9	12.5	14.1
Yes	84.0	85.4	86.7	87.3	85.7
Missing	0.2	0.3	0.3	0.2	0.3
<b>Ownership of the house</b>					
No (ref.)	14.2	10.1	9.7	7.7	10.5
Yes	85.7	89.7	90.1	92.1	89.3
Missing	0.2	0.2	0.2	0.2	0.2
<b>Mother's education</b>					
None (ref.)	18.3	23.1	26.4	34.5	25.0
Elementary	53.9	48.5	44.9	38.2	46.9
Post-elementary	19.8	18.9	16.9	13.5	17.6
Missing	8.1	9.5	11.8	13.8	10.6
<b>Family religion</b>					
Islam (ref.)	85.5	86.6	87.5	86.3	86.5
Non-Islam	14.5	13.4	12.5	13.7	13.5
Missing	0	0	0	0	0
<b>Gender</b>					
Female (ref.)	50.4	50.2	49.6	50.2	50.0
Male	49.6	49.8	50.4	49.8	50.0
Missing	0	0	0	0	0
<b>Urban/rural</b>					
Rural (ref.)	63.9	61.5	57.8	55.9	60.2
Urban	36.1	38.5	42.2	44.1	39.8
Missing	0	0	0	0	0
<b><u>Dependent Variables:</u></b>					
<b>Primary school attendance</b>					
No (ref.)	1.4	2.1	3.7	7.5	3.4
Yes	98.0	97.1	95.4	91.3	95.7
Missing	0.7	0.8	0.9	1.2	0.9

<b>Primary school completion</b>					
No (ref.)	10.8	11.5	15.3	26.2	15.4
Yes	89.2	88.5	84.7	73.8	84.6
Missing	0	0	0	0	0
<b>Junior high attendance</b>					
No (ref.)	30.4	35.9	37.8	49.1	38.1
Yes	68.6	64.1	62.2	50.9	61.9
Missing	0	0	0	0	0
<b>Junior high completion</b>					
No (ref.)	40.9	39.1	40.1	51.4	42.6
Yes	59.1	60.9	59.9	48.6	57.4
Missing	0	0	0	0	0

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The data show that 38.3 percent of the children's parents in this sample were agricultural workers. This number is consistent with the rate of 41 percent of the population 15 years of age and over who worked in the agricultural sector in 1997 according to Indonesian employment statistics posted on the official website of the governmental institution of Statistics Indonesia (BPS). For each birth cohort, most parents were agricultural workers, with fewer parents holding professional / administrative positions. The missing values of the parental occupation increase with the rise of the child's age. This is because the older the child was, the older the parents were, and the more likely there was to be a lack of the parents' occupational information.

With respect to electricity, Table 4.1 shows that 14.1 percent of the chosen population did not have access to electricity in their parents' household while 85.7 percent of the sampled children's parental household utilized electricity. The results indicate that the majority of Indonesian households had access to electricity in 1997. However, this number is much higher than the World Bank's report of 53 percent Indonesia's household electrification rate in 1999 (The World Bank Group, 2005). According to the same report, Indonesia lagged behind most other countries in the East Asia & Pacific region in electrification, even those with less developed economies, due to the geography of Indonesia with its widely dispersed rural population over a large number of islands. Another report by the International Energy Agency points out the wide regional variations in Indonesia's household electrification rate (IEA, 1999). One explanation about the higher electrification rate in this sample lies in the sampling scheme of the original IFLS data. The original IFLS sampling scheme stratified on provinces and urban/rural location, then randomly sampled within these strata. Mainly for cost-effectiveness reasons and also in consideration of the safety issues for the interviewers, 14 provinces were excluded. Most of them were located in remote areas with complicated geographic environments

or they were experiencing political violence. These omitted provinces might have lower household electrification rates as their fragmented geography or turbulent social environments could create particular problems for extension of electricity.

The results in Table 4.1 also show that most children's parents (89.3 percent) owned the house where they were living in 1997. This number is close to the number of 96.2 percent of household in 1999 occupied by the owners themselves released by the Indonesian Central Bureau of Statistics (BPS 2005). When comparing across the age groups, we can see that the percentage of CCparents who owned the house increased from 85.7 to 92.1 from the youngest cohort to the oldest cohort. That is to say, the older cohort's parents were more likely to own the house than the younger cohort's parents. This is reasonable because the older people tend to be less mobile and more financially stable which allows them to buy their own houses rather than rent a house as compared with younger people. Both electricity and ownership of the house refer to the situation of the parents' house at the time of interview. Therefore, information on these two variables is more accurate for the household children at the school age of primary or junior high. For the older children or children out of the household, it may not reflect the real situation of the parents' house at their time of attending primary or junior high school.

Mother's education is measured by the highest level of schooling that the mother achieved. According to Table 4.1, 46.9 percent of the mothers attended elementary school and 17.6 percent of mothers had some kind of post-elementary education. Twenty-five percent of the mothers never attended any school. As the children's age decreased, mother's educational attainment increased. The younger the children were, the more the mothers who had no education and the more the mothers who attended primary, secondary and tertiary education.

Regarding distribution of the family's religious affiliation, 86.5 percent of the children's parents were Islam, 13.5 percent of them were non-Islam (including Christian, Hindu and Buddhism). These numbers are consistent with the religious distribution of the total Indonesian population in 1998 (Muslim 88 percent, Christian 8 percent, Others 5 percent) posted by the CIA's World Fact Book (CIA, 2005).

Gender distribution of the sampled children was balanced with half males and half females. Although there were some minor variations within each age group, the general picture was not changed.

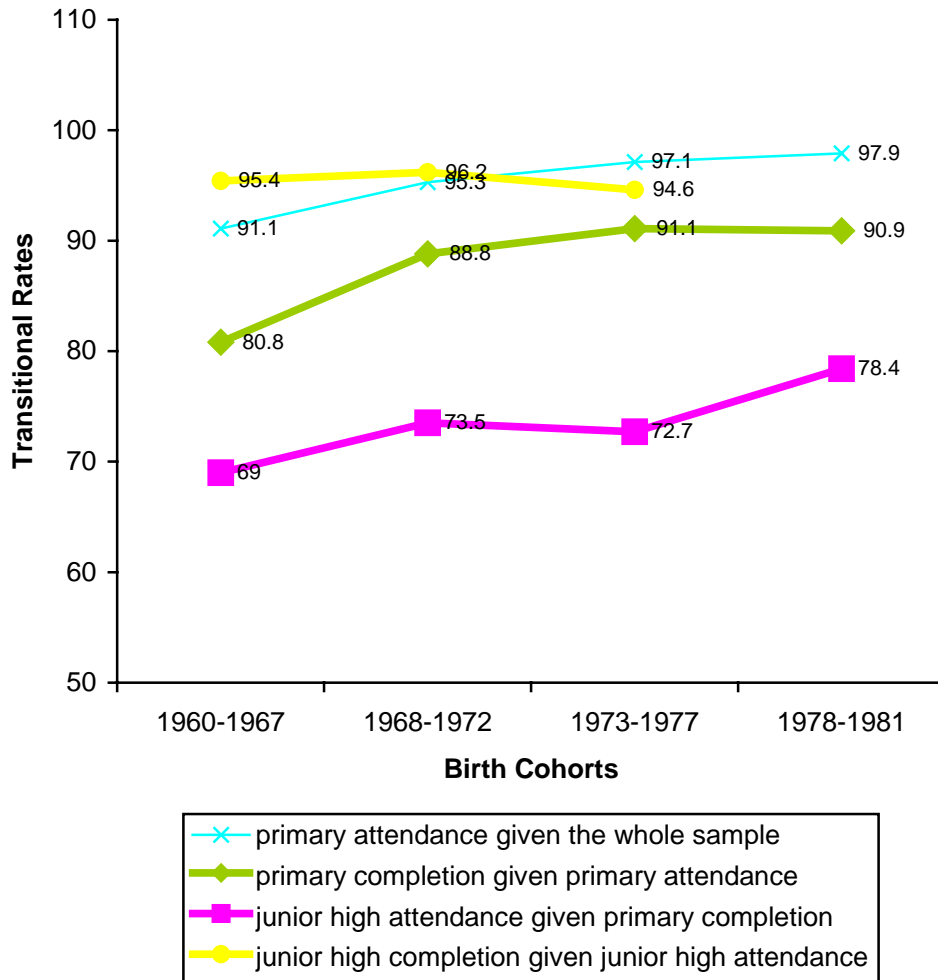
Moreover, the analyses of the data show that 39.8 percent of the children lived in urban areas while 60.2 percent of them lived in rural areas. The proportion of urban residents in this sample is similar to the International Energy Agency's calculation of 36 percent of people living in urban areas in 1996 (IEA, 1999). The agricultural population accounted for around three-fifths of the total sample population.

As presented in Table 4.1, 95.7 percent of the sampled children indicated that they had attended primary school; 84.6 percent had completed primary school; 61.9 percent had attended junior high school; 57.4 percent had completed junior high school. While looking horizontally across the birth cohort, I find for all dependent variables, as the age group increases, children who answered "No" to the questions on whether they attained or completed a certain level of education increased as well. Furthermore, the largest difference between two consecutive cohorts who answered "No" always lies between the oldest two birth cohorts (1960-1967 and 1968-1972) for each dependent variable. In general, as the age group decreases, the differences between two consecutive birth cohorts who answered "No" also decreases. The results suggest

that the younger the group is, the less difference in basic educational attainment there is between two groups.

From the four dependent variables, two transitional rates and two completion rates are calculated: primary school attendance given the whole sample; primary school completion given primary school attendance; junior high school attendance given primary school completion; junior high school completion given junior high school attendance. The results are shown in Figure 4.1 by different birth cohorts. I didn't draw the point of junior high school completion rate for the birth cohort 1978-1981 because this group of people (16-19 years old) was not old enough to fully complete this transition. Therefore, the junior high school completion rate for these children is abnormally low.

**Figure 4.1**  
**Transitional Rates by Birth Cohorts for Analysis I**



Owing to the limited birth cohorts included in this sample, the trend of change was not that obvious, especially for junior high school completion rate. However, based on what we have, we can still see upward trends for attending primary school, completing primary school and attending junior high school, which implies these three transitional rates increased from 1960 to 1981 birth cohort in general.



Nevertheless, in such general trends, there are three outstanding increases and two noticeable decreases. The three big increases all occurred from the 1960-1967 to 1968-1972 birth cohort: the transitional rate to primary school increased 4.2 percent; the primary school completion rate increased 8 percent; the transitional rate to junior high school increased 4.5 percent. The two decreases both happened from the 1968-1972 to the 1973-1977 cohort: the transitional rate to junior high school decreased 0.8 percent and the completion rate of junior high school decreased 1.6 percent.

In addition, the figure shows that the line of the transitional rates to junior high school lies at the bottom whereas that of the junior high school completion rates is located among the top, with the line of primary school completion rates falling between them. That is to say, among the three transitions of basic education, attending junior high school given primary school completion was the most difficult transition while completing junior high school was the easiest transition if they had attended it.

Table 4.2 presents descriptive statistics for the interval scale variables in sample I by different birth cohorts. There are three interval variables in this analysis: number of rooms in the house, total number of the household members; total number of siblings (household and non-household). Both the total number of rooms and number of the household members reflected the household situation at the time of survey. The number of rooms in the house was recorded by the interviewer's observation. The rooms included bedrooms, living room, dining room, kitchen, bathroom, etc. The average number of rooms for each house was about 5. The standard deviation is about 1.8 for all the birth cohorts.

**Table 4.2**  
Descriptive Statistics for Interval Scale Variables Used in Analysis I,  
Indonesia Family Life Survey, 1997

<b>Variables</b>	<b>Valid N</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>Minimum &amp; Maximum</b>	<b>Skewness</b>
<b>Number of rooms</b>					
1978-1981	3678	5.27	1.84	1 to 11	0.558
1973-1977	4519	5.38	1.83	1 to 11	0.543
1968-1972	3370	5.43	1.85	1 to 11	0.527
1960-1967	2985	5.43	1.86	1 to 11	0.568
<b>Total number of household members</b>					
1978-1981	3678	6.51	2.20	2 to 16	0.766
1973-1977	4519	6.48	2.34	2 to 16	0.745
1968-1972	3370	6.40	2.56	2 to 16	0.878
1960-1967	2985	6.07	2.43	2 to 16	0.922
<b>Total number of siblings</b>					
1978-1981	3678	5.11	2.79	0 to 18	0.677
1973-1977	4519	5.68	2.78	0 to 18	0.600
1968-1972	3370	5.99	2.83	0 to 16	0.452
1960-1967	2985	6.22	2.82	0 to 18	0.358

Total number of household members was calculated by adding up the individuals who were recorded in the household roster. Household members included all the people, both family members and non-family members, who stayed or planned to stay in the household for six or more months at the time of survey. Such a definition of householder for this survey results in the average number of household members being around 6, which is higher than the number of 4.5-3.9 from 1990-2000 posted by the Indonesian Statistics Bureau's population analysis. In that analysis, the household members only include the family members.

Siblings include household and non-household siblings, as well as those with either the same biological father or the same biological mother as the household child. This variable is calculated by the author by adding up the household and non-household children of the household head and his wife together. As reported by Table 4.2, the means of the total number

of siblings increase with the growth of ages. The older cohorts had more siblings than the younger cohorts. This result accords with the decrease of the birth rate over time.

### Bivariate Association

Table 4.3 presents the results of crosstabulations between the dependent and independent variables. The results of the significance test of Pearson Chi-Square are not reported in the table because most of them are significant at the .001 level due to the very large sample size. Only three exceptions with the non-significant relations are marked out. They are the relationship between ownership of the house and primary completion, family religion and primary attendance, and gender of the children and primary completion.

The crosstabular analyses show that agricultural workers displayed consistent disadvantage in the four dependent variables. Their children were least likely to attend primary school (95.6 percent), complete primary education (70.5 percent), attend junior high school (45.7 percent) or complete junior high education (34.4 percent). Children of the blue-collar workers were the second disadvantaged group in terms of basic educational attainment with 98.2 percent of primary attendance, 78.6 percent of primary completion, 63.3 percent of junior high school attendance and 48.7 percent of junior high school completion rate. However, children of those in professional or administrative occupations had the highest likelihood to attend primary school (99.1 percent), complete primary school (87.3 percent), attend junior high school (83.4 percent) and complete junior high school (69.6 percent). The order of the children's basic educational attainment is consistent with their parents' occupational prestige. That is to say, children of parents with higher prestige occupations tend to have higher levels of basic educational attainment.

**Table 4.3**  
**Crosstabular Analysis for Nominal Scale Independent Variables Used in Analysis I**  
**and Four Dependent Variables, Indonesia Family Life Survey, 1997**

Independent Variables	Primary Attendance		Primary Completion		Jr. High Attendance		Jr. High Completion	
	No - %(N) -	Yes - %(N) -	No - %(N) -	Yes - %(N) -	No - %(N) -	Yes - %(N) -	No - %(N) -	Yes - %(N) -
<b>Parent's occupation</b>								
Agricultural workers (ref.)	4.4 (321)	95.6 (6906)	29.5 (2177)	70.5 (5205)	54.3 (4010)	45.7 (3372)	65.6 (4843)	34.4 (2539)
Prof./Manag./Admin.	0.9 (10)	99.1 (1089)	12.7 (142)	87.3 (973)	16.6 (185)	83.4 (930)	30.4 (339)	69.6 (776)
Blue-collar workers	1.8 (149)	98.2 (8191)	21.4 (1824)	78.6 (6713)	36.7 (3136)	63.3 (5401)	51.3 (4378)	48.7 (4159)
<b>Electricity</b>								
No (ref.)	7.7 (214)	92.3 (2582)	42.2 (1220)	57.8 (1672)	66.8 (1932)	33.2 (960)	77.9 (2252)	22.1 (640)
Yes	2.1 (332)	97.9 (15585)	20.3 (3291)	79.7 (12934)	37.9 (6145)	62.1 (10080)	50.4 (8184)	49.6 (8041)
<b>Ownership of the house</b>								
No (ref.)	1.0 (23)	99.0 (2204)	23.7 (546)	76.3 (1758)	34.2 (788)	65.8 (1516)	51.6 (1190)	48.4 (1114)
Yes	3.2 (524)	96.8 (15977)	23.6 (3971)	76.4 (12859)	43.4 (7298)	56.6 (9532)	55.0 (9256)	45.0 (7574)
<b>Mother's education</b>								
None (ref.)	8.5 (368)	91.5 (3954)	35.1 (1537)	64.9 (2846)	66.1 (2897)	33.9 (1486)	73.6 (3224)	26.4 (1159)
Elementary	1.1 (101)	98.9 (9169)	21.8 (2060)	78.2 (7380)	40.0 (3777)	60.0 (5663)	54.5 (5148)	45.5 (4292)
Post-elementary	0.2 (8)	99.8 (3495)	12.6 (448)	87.4 (3107)	14.3 (509)	85.7 (3046)	29.5 (1047)	70.5 (2508)
<b>Family religion</b>								
Islam (ref.)	3.0 (444)	96.4 (12034)	16.1 (2023)	83.9 (10561)	40.6 (5115)	59.4 (7469)	45.2 (5683)	54.8 (6901)
Non-Islam	2.9 (56)	97.1 (1892)	10.8 (212)	89.2 (1756)	21.9 (431)	78.1 (1537)	26.5 (522)	73.5 (1446)
<b>Gender</b>								
Female (ref.)	3.5 (330)	96.5 (9054)	24.1 (2308)	75.9 (7280)	44.8 (4299)	55.2 (5289)	56.7 (5432)	43.3 (4156)
Male	2.4 (221)	97.6 (9163)	23.1 (2218)	76.9 (7368)	39.6 (3798)	60.4 (5788)	52.5 (5031)	47.5 (4555)
<b>Urban/rural</b>								
Rural (ref.)	4.0 (457)	96.0 (10907)	27.6 (3203)	72.4 (8418)	51.0 (5932)	49.0 (5689)	63.2 (7348)	36.8 (4273)
Urban	1.3 (94)	98.7 (7308)	17.5 (1322)	82.5 (6229)	28.7 (2164)	71.3 (5387)	41.2 (3113)	58.8 (4438)
<b>Birth Cohorts</b>								
1978-1981	1.4 (51)	98.6 (3603)	10.8 (398)	89.2 (3280)	31.4 (1155)	68.6 (2523)	40.9 (1505)	59.1 (2173)
1973-1977	2.1 (94)	97.9 (4390)	11.5 (521)	88.5 (3998)	35.9 (1622)	64.1 (2897)	39.4 (1780)	60.6 (2739)
1968-1972	3.8 (128)	96.2 (3213)	15.4 (520)	84.6 (2850)	38.2 (1288)	61.8 (2082)	40.6 (1369)	59.4 (2001)
1960-1967	7.7 (227)	92.3 (2720)	26.7 (796)	73.3 (2189)	49.6 (1481)	50.4 (1504)	52.0 (1551)	48.0 (1434)

Moreover, the gaps in basic educational attainment between the children of agricultural workers and those of professionals and administrators enlarged rapidly from 3.5 percentage points for primary attendance to 16.8 points for primary completion until 37.7 points for junior high school attendance. Such a trend stopped at the junior high school attendance. For the completion of junior high school, the gap narrowed a bit to 35.2 percentage points compared to 37.7 points for junior high school attendance. How the gaps would further change in upper secondary and higher educational attainment is unpredictable for this study, which ends at the basic educational attainment.

The bivariate relationships between electricity and basic educational attainment show that using electricity at home was significantly associated with basic educational attainment. Children with electricity in the house were more likely to attain and complete primary and lower secondary education. The relationship is strongest between electricity use and junior high school attendance, followed by the completion of junior high school and then the completion of primary school. The relationship between electricity use and primary attendance is the weakest among them.<sup>1</sup> Electricity use not only reflects the economic situation of a household in some way, but also affects the after-school study of the child. Therefore, the weakest relationship between electricity use and primary attendance, on one hand, is probably because primary school enrollment had already been so universal that its correlation with family's economic situations became very weak. On the other hand, it could also be because attending primary school required very little after-school study.

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<sup>1</sup> The strength of the bivariate relationship was tested by Phi and Cramer's V using SPSS. The results are not reported in Table 4.3 because most of them are significant but the values are under 0.3. That means although the relationship is not due to chance, it is also not very strong. The values of the strength of the relationships between electricity use and the four dependent variables are .12, .19, .21 and .20 respectively.

Ownership of the house was very weakly related to basic educational attainment as indicated by the four dependent variables. Specifically, the results show a non-significant relationship between primary completion and house ownership. Ownership of the house is usually taken as an indicator of family's economic background in America but the results here warn us that it might not be the case in Indonesia. In Indonesia, as in other Asian developing countries, farmers living in rural places usually own their houses that were either inherited from the family or built by themselves, though the conditions of the house could be very poor. On the contrary, people living in the city are more likely to rent an apartment rather than buy a house due to the expensive prices of real estate in the city. However, it does not mean that rural families have better economic backgrounds than those families in the city. Hence, we should be very careful when copying the indicators of family background from one country to another.

Mother's education displayed significant relationships with all four indicators of basic educational attainment. For junior high school attendance and completion of junior high school, it also presented a relatively strong relationship (Phi and Cramer's  $V \geq .3$ ). In general, with the increase of mother's education, the children attained more basic education. The difference between elementary education and no education is much bigger than the difference between post-elementary education and elementary education at the primary level. However, when it enters the junior high level, the post-elementary and elementary difference enlarges so rapidly that it almost equals the difference between elementary and no education (25.7 percent vs. 26.1 percent) for junior high school attendance and even exceeds it for junior high school completion (25 percent vs. 19 percent).

Family's religion did not show a significant relationship with primary attendance but it was significantly related to the other three dependent variables. Moreover, the relationship was

stronger at the lower secondary educational level than at the primary level. Children from non-Islamic families were most likely to complete primary school (89.2 percent), attend junior high school (78.1 percent) and also complete junior high school (73.5 percent) than children from families with any other religious affiliations. On the contrary, children from Islamic family backgrounds were least likely to attain basic education.

Table 4.3 shows the significant relationships between sex of the child and basic educational attainment except for primary completion. Males were more likely than females to attend primary school and junior high school, and also to complete junior high school. However, the relationships were not strong at all (Phi and Cramer's V are approaching zero).

With respect to the relationships between rural/urban and basic educational attainment, urban children were 2.7 percent more likely than rural children to attend primary school (98.7 percent vs. 96 percent), 10.1 percent more likely to complete primary school (82.5 percent vs. 72.4 percent), 22.3 percent more likely to attend junior high school (71.3 percent vs. 49 percent) and 22 percent more likely to complete junior high school. It is obvious that the rural/urban differences increased from primary education to lower secondary education.

Finally, the results in Table 4.3 show that with the age increasing, the child's basic educational attainment decreased for all four indicators. That is to say, the older cohorts were less likely than the younger cohort to attend primary school, complete primary school, attend junior high school and complete junior high school. Moreover, the largest gaps in basic educational attainment always lay between the 1960-1967 and the 1968-1972 birth cohort.

The bivariate relationships between interval-level independent variables and dependent variables were tested by logistic regression. However, the results are not reported here because they did not provide much useful information. The bivariate relationships between each of the

four interval-level independent variables and each dependent variables were either non-significant, or the independent variable explained too little amount of variance in the dependent variable (Nagelkerke R Square is approaching zero), or the model is not statistically a “good fit” (Hosmer and Lemeshow Test < .05).

### Logistic Regression Analyses

In the formation of the theoretical model presented in the second chapter, I hypothesized that economic capital, human capital and social capital of the family as well as the individual’s social demographics were four major exogenous blocks that jointly explain the attainment of basic education in Indonesia. The effects of selective family background and social demographic variables on four transitional levels of basic education, indicated by attending primary school, completing primary school given the attendance of primary school, attending junior high school given the completion of primary school, and completing junior high school given the attendance of junior high school, are discussed below, based on the blocks postulated earlier in the theoretical framework. The interaction term of family religion and gender will be discussed separately.

Table 4.4 presents the results of the logistic regression of family background and social demographic variables on four transitional levels of basic education by four birth cohorts across the period of a set of basic education policies. The purpose of running regression by different birth cohorts is to see the changing effects of the explanatory variables on the dependent variables over time with the change of the state policies on basic education.

Dependent Variable 1:



## Attending primary school vs. never attending primary school

(Table 4.4A)

**Economic capital** – Since the most direct indicator of family’s economic capital, family’s income, is not available, parent’s occupation, number of rooms in the household, accessibility to electricity and ownership of the house are taken as the proxies of family’s economic status.

*Parent’s occupation* has no significant effect on their children’s primary school attendance for the children born between 1960 and 1981 after controlling for all the other explanatory variables. Based on the results, we cannot conclude that there is any significant difference in terms of attending primary school between the children with either parent in the high status occupations and the children of the agricultural workers, or between the children of the blue-collar workers and the children of the agricultural workers. For children having either parent in the professional/managerial/administrative occupations in the two most recent birth cohorts (1978-1981 and 1973-1977), the odds ratios are logically unrealistic and statistically too high<sup>2</sup> to be reported. That is because the dependent variable – primary attendance – is literally constant for these two groups of children. In another words, the children born between 1973 and 1981 with either parent in the professional/managerial/administrative occupations almost all attended primary school. The dependent variable has very little variations for children in these two groups.

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<sup>2</sup> Unlike OLS regression, logistic regression uses maximum likelihood estimation (MLE) rather than ordinary least squares (OLS) to derive parameters. MLE relies on large-sample asymptotic normality which means that reliability of estimates decline when there are few cases for each observed combination of independent variables. That is, in small samples one may get high standard errors. In the extreme, if there are too few cases in relation to the number of variables, it may be impossible to converge on a solution. Very high parameter estimates (logistic coefficients) may signal inadequate sample size. A high odds ratio would not be evidence of multicollinearity in itself. (Garson 2006)

**Table 4.4A**  
**Analysis I: Logistic Regression Coefficient and Odds Ratios for Attending Primary School,**  
**as Compared with Never Attending Primary School, IFLS, 1997**

Variables	Birth Cohorts			
	1978-1981	1973-1977	1968-1972	1960-1967
<b>Parent's occupation</b>				
Agricultural workers (ref.)				
Prof./Manag./Admin.	5.729 (/)	5.950 (/)	-.955 (.385)	-.397 (.672)
Blue-collar workers	.154 (1.166)	.204 (1.227)	-.339 (.713)	.067 (1.070)
<b>Number of rooms</b>	.515 (1.673)***	.412 (1.511)***	.550 (1.733)***	.355 (1.426)***
<b>Electricity</b>				
No (ref.)				
Yes	.482 (1.620)	1.205 (3.337)***	.341 (1.406)	.623 (1.865)**
<b>Ownership of the house</b>				
No (ref.)				
Yes	-1.864 (.155)	-6.786 (.001)	-1.030 (.357)	.034 (1.035)
<b>Mother's education</b>				
None (ref.)				
Elementary	1.525 (4.596)***	1.846 (6.332)***	1.918 (6.806)***	1.225 (3.403)***
Post-elementary	1.583 (4.871)*	2.076 (7.976)**	3.100 (22.196)**	7.673 (/)
<b>Family size</b>	.064 (1.067)	-.061 (.941)	-.121 (.886)**	-.133 (.876)***
<b>Number of siblings</b>	-.110 (.896)	.029 (1.030)	.021 (1.021)	.029 (1.029)
<b>Urban/rural</b>				
Rural (ref.)				
Urban	-.818 (.441)*	-.320 (.726)	.795 (2.214)*	.572 (1.773)*
<b>Family religion</b>				
Islam (ref.)				
Non-Islam	.425 (1.529)	-.747 (.474)*	2.291 (9.880)*	.240 (1.271)
<b>Gender</b>				
Female (ref.)				
Male	-.327 (.721)	.002 (1.002)	.812 (2.252)***	.525 (1.690)**
<b>Family religion * gender</b>	.096 (1.101)	1.166 (3.209)	-2.420 (.089)*	.389 (1.475)
<b>N</b>	3678	4519	3370	2985
<b>Model Chi-square</b>	74.388***	177.276***	189.788***	206.055***
<b>Nagelkerke R square</b>	.180	.250	.281	.242

Note: 1. Number in the parentheses is odd ratios (Exp(B)).  
2. “(/)” means that the odds ratios are logically unrealistic and statistically too high to be reported.  
3. \*\*\* P<=.001; \*\* P<=.01; \* P<=.05

*Number of rooms* in the household is significantly related to the children's primary school attendance for all the birth cohorts. On average, for each additional room in the household, the odds of children attending primary school increase about 1.6 times. However, there is no trend of either increasing or declining effect of number of rooms on primary school attendance over the two decades.

The relationship between access to *electricity* and primary school attendance is statistically significant for 1960-1967 and 1973-1977 birth cohorts. For the older cohort, a child from a household with access to electricity is 1.9 times (Exp (B) = 1.865) more likely to attend primary school as compared to a child coming from a household with no access to electricity. For the younger birth cohort, a child who had accessibility to electricity at home is about 3.3 times (Exp (B) = 3.337) more likely than the one who had no accessibility to electricity to attend primary school. Although the difference between the younger cohort and the older cohort sounds important, it is actually not statistically significant by the t-test, which means the difference is only by chance.

*Ownership of the house* does not present any significant relationship with whether the child in the household attends primary school or not, when adjusting for other independent variables.

**Human capital** – *Mother's education* is an indicator of human capital possessed by the family. For all birth cohorts, whether the mother had elementary education or not has significant effects on her child's primary school attendance. Children with a mother who had some primary education are 3.4 to 6.8 times ( $3.403 \leq \text{Exp (B)} \leq 6.806$ ) more likely than those whose mother had no education to attend primary school. Mother's post-elementary education also has significant influence on her child's primary attendance except for the oldest cohort. It does not

matter for the 1960-1967 birth cohort because almost all the children with mothers who had post-elementary education in this birth cohort attended primary school. The dependent variable lacks variation for this cell.

**Social capital** – Social capital is indicated by total number of people living in the household, number of siblings and family religious affiliation. Since family religion is interacted with gender in the model, it will be discussed separately with the interaction term.

*Family size* (total number of people in the household) only has a significant effect on primary attendance for the oldest two cohorts. The relationships are negative ( $B = -.121$  and  $B = -.133$ ), which means the more people there are in the household, the lower the chances are of children attending primary school.

When controlling for the other factors, *number of siblings* has no significant relationship with primary school attendance for each cohort. This is different from what the previous research indicates, which is that more siblings dilute the educational opportunity for the individual child. One explanation for this result is the inclusion of non-household siblings in the analysis. The non-household siblings mostly live independently from their parents. They are less likely to diverge the parents' available resources for their household siblings. It is also not unusual that the non-household children economically help their parents with diverse family affairs.

**Social demographics** – Social demographics are indicated by urban/rural residence and gender in this study. Gender is interacted with family religion. Therefore, it will be discussed under the item of the interaction term.

The relationships between living in urban settings and primary school attendance change from significant positive to non-significant and finally to significant negative as time passes. For

the two oldest cohorts (1960-1967 and 1968-1972), children living in the urban area were about 2 times more likely than those living in the rural area to attend primary school ( $\text{Exp}(B) = 1.773$  and  $2.214$ ). For the birth cohort 1973-1977, living in urban or rural areas did not affect primary school attendance in any significant way. However, for the birth cohort 1978-1981, urban residence became a disadvantage in primary school attendance compared with the rural residence. The unusual disadvantage of urban residence was attributed to the economic recession from 1982-1986 caused by the falling oil prices. The birth cohort 1978-1981 happened to reach the age for attending primary school around the period of economic recession. During this recession, the urban areas suffered more than the rural places. According to the historical records, rice production continued to grow during the period of economic recession. Actually there were bumper harvests in 1983-1985 (Ricklefs 2001: 375).

**Interaction term** – The interaction term of *family religion \* gender* is created to check whether the relationship between family religion and primary school attendance is different for boys and girls. According to the results in Table 4.4A, only the 1968-1972 birth cohort shows significant interaction term ( $B = -2.420$ ), which means the effect of family religion on primary school attendance was different for boys and girls. Using the equation  $Y = B_0 + B_1(\text{family religion}) + B_2(\text{gender}) + B_3(\text{family religion} * \text{gender})$ , the researcher finds that in terms of primary school attendance, non-Islamic girls were better off than Islamic girls but Islamic boys were better off than non-Islamic boys. Islamic girls were the most disadvantaged group in primary school attendance. For other birth cohorts, the relationship between family religion and primary school attendance is not different for boys and girls.

It is noticeable that for the birth cohort 1973-1977, non-Islamic children were abnormally less likely than Islamic children to attend primary school ( $B = -.747$ ). This result is significantly

different from what we normally find, which is that non-Islamic children are better off than Islamic children. The disadvantage of non-Islamic children for the 1973-1977 cohorts who would start the primary school between 1980-1984 was related to the Village Law of 1979, which forcefully amalgamated some communities with different social and religious traditions into units (Ricklefs 2000: 374). Since such units lacked a natural foundation of social cohesion, they increased a lot of social tensions such as the anti-Chinese riots in Surakarta in November 1980. Chinese are the major portion of non-Islamic population so that anti-Chinese riots and other religious confrontations suppress the chances for non-Islamic children to attend primary school in the early 1980s.

For the chances to attend primary school, the male was about 2 times more likely than the female to attend primary school for the two oldest cohorts ( $\text{Exp}(B) = 1.690$  and  $\text{Exp}(B) = 2.252$ ). However, the privilege of the male began declining in that gender was not significantly associated with primary school attendance for the younger birth cohort 1973-1977 and even reversed the association with primary school attendance for the youngest cohort of 1978-1981.

#### Dependent Variable 2:

Completing primary school vs. never completing primary school given the primary school attendance

(Table 4.4B)

In order to avoid repetition, I will only address the independent variables showing recurrent or different patterns of relationships with the dependent variable compared to their relationships with the first dependent variable – primary attendance.

**Table 4.4B**  
**Analysis I: Logistic Regression Coefficient and Odds Ratios for Completing Primary School Given Primary School Attendance, as Compared with Never Completing Primary School, IFLS, 1997**

Variables	Birth Cohorts			
	1978-1981	1973-1977	1968-1972	1960-1967
<b>Parent's occupation</b>				
Agricultural workers (ref.)				
Prof./Manag./Admin.	.941 (2.563)	1.343 (3.829)	.736 (2.087)	.859 (2.361)
Blue-collar workers	.007 (1.007)	-.016 (.984)	-.194 (.824)	.170 (1.185)
<b>Number of rooms</b>	.401 (1.493) <sup>***</sup>	.273 (1.314) <sup>***</sup>	.268 (1.307) <sup>***</sup>	.185 (1.203) <sup>***</sup>
<b>Electricity</b>				
No (ref.)				
Yes	.601 (1.824) <sup>***</sup>	.716 (2.045) <sup>***</sup>	.662 (1.939) <sup>***</sup>	.602 (1.825) <sup>***</sup>
<b>Ownership of the house</b>				
No (ref.)				
Yes	-.262 (.769)	.108 (1.114)	-.045 (.956)	.210 (1.234)
<b>Mother's education</b>				
None (ref.)				
Elementary	.601 (1.824) <sup>***</sup>	.839 (2.314) <sup>***</sup>	.850 (2.340) <sup>***</sup>	.757 (2.132) <sup>***</sup>
Post-elementary	2.060 (7.849) <sup>***</sup>	2.299 (9.968) <sup>***</sup>	3.032 (20.731) <sup>***</sup>	2.263 (9.616) <sup>***</sup>
<b>Family size</b>	-.029 (.972)	-.079 (.924) <sup>*</sup>	-.003 (.997)	-.048 (.953)
<b>Number of siblings</b>	-.080 (.923) <sup>**</sup>	-.042 (.959)	-.018 (.982)	.056 (1.058) <sup>*</sup>
<b>Urban/rural</b>				
Rural (ref.)				
Urban	-.084 (.919)	.405 (1.499) <sup>*</sup>	.453 (1.572) <sup>**</sup>	.227 (1.255)
<b>Family religion</b>				
Islam (ref.)				
Non-Islam	.291 (1.338)	.832 (2.299) <sup>**</sup>	1.142 (3.134) <sup>**</sup>	.995 (2.704) <sup>***</sup>
<b>Gender</b>				
Female (ref.)				
Male	.183 (1.201)	-.046 (.955)	.505 (1.658) <sup>***</sup>	.300 (1.350) <sup>*</sup>
<b>Family religion * gender</b>	-.088 (.916)	.178 (1.195)	-.839 (.432)	.274 (1.315)
<b>N</b>	3603	4390	3213	2720
<b>Model Chi-square</b>	249.838 <sup>***</sup>	304.272 <sup>***</sup>	246.497 <sup>***</sup>	225.328 <sup>***</sup>
<b>Nagelkerke R square</b>	.173	.176	.194	.196

Note: 1. Number in the parentheses is odd ratios (Exp(B)).  
2. “(/)” means that the odds ratios are logically unrealistic and statistically too high to be reported.  
3. \*\*\* P<=.001; \*\* P<=.01; \* P<=.05

*Number of rooms* is still significantly related to the chances of completing primary school given the primary school attendance for each birth cohort. More rooms in the household resulted in higher chances of completing primary school.

The relationship between accessibility to *electricity* and completing primary school is also significant for all birth cohorts. Children having electricity in the household are about 2 times on average more likely than those without accessibility to electricity to complete primary school (Exp (B) = 1.824; 2.045; 1.939 and 1.825).

*Mother's education* has a significant effect on primary school completion for each birth cohort when controlling for all the other possible factors. Children with mothers who ever attended elementary school were on average 2 times (Exp (B) = 1.824; 2.314; 2.340 and 2.132) more likely to complete primary school than those with mothers who had no education at all. For those mothers who had education beyond elementary school, their children were even more advantaged in completing primary school than the mothers without education. However, based on the t-test results for comparing the logistic regression coefficients between the birth cohorts<sup>3</sup>, the relationships of mother's education and primary school completion have no change over time.

*Number of siblings* had a negative effect on primary school completion for the latest cohort (1978-1981). As we hypothesized, more siblings decreased the chances for an individual child to complete primary school. On the contrast, for the oldest cohort, number of siblings had a positive effect on primary school completion. The positive effect is probably caused by the inclusion of the non-household children. Since the oldest cohort tends to have more non-household siblings who live independently from the parents at the time of survey, it reverses the effect of siblings into a positive one.

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<sup>3</sup> The results of the t-test do not presented here because most of them are non-significant.



*Urban/rural* residence does not show any special pattern in relation with the completion of primary school as it shows with primary school attendance. Living in the urban area increased the chances to complete primary school by about 1.5 times more than living in the rural places for the cohorts who completed primary school in 1980s (1968-1972 and 1973-1977 birth cohorts). For 1960-1967 birth cohorts who would complete primary school between 1972-1979, urban/rural residence did not make any significant difference. The 1973-1978 school building program may take effect here. Because the government gave special attention to the rural places when building schools, it may decrease the effect of urban/rural residence temporarily.

The *interactions of family religion and gender* have no significant effects on primary school completion. Thereby, the relationships between family religion and primary school completion do not depend on gender. Non-Islamic religious affiliations of the family helped the child to complete primary school. Non-Islamic children are 2-3 times more likely than Islamic children to complete primary school

The males were more likely than the females to complete primary school for the two older cohorts but for the two younger cohorts, the gender differences disappeared.

### Dependent Variable 3:

Attending junior high school vs. never attending junior high school given primary school completion

(Table 4.4C)

**Table 4.4C****Analysis I: Logistic Regression Coefficient and Odds Ratios for Attending Junior High School Given Primary Completion, as Compared with Never Attending Junior High School, IFLS, 1997**

Variables	Birth Cohorts			
	1978-1981	1973-1977	1968-1972	1960-1967
<b>Parent's occupation</b>				
Agricultural workers (ref.)				
Prof./Manag./Admin.	1.105 (3.018)**	1.714 (5.550)***	1.094 (2.986)**	.951 (2.587)*
Blue-collar workers	.399 (1.490)***	.140 (1.151)	.054 (1.056)	-.243 (.784)
<b>Number of rooms</b>	.270 (1.310)***	.257 (1.361)**	.242 (1.273)***	.340 (1.404)***
<b>Electricity</b>				
No (ref.)				
Yes	-.003 (.997)	.308 (1.361)**	.347 (1.415)*	.490 (1.633)*
<b>Ownership of the house</b>				
No (ref.)				
Yes	-.405 (.667)*	-.282 (.755)	-.205 (.815)	-.378 (.685)
<b>Mother's education</b>				
None (ref.)				
Elementary	1.015 (2.759)***	.813 (2.254)***	.762 (2.142)***	.824 (2.279)***
Post-elementary	3.102 (22.244)***	3.029 (20.685)***	2.880 (17.808)***	2.632 (13.907)***
<b>Family size</b>	.005 (1.005)	-.001 (.999)	-.035 (.965)	.021 (1.022)
<b>Number of siblings</b>	-.044 (.957)*	-.040 (.961)*	.009 (1.009)	-.019 (.981)
<b>Urban/rural</b>				
Rural (ref.)				
Urban	.689 (1.991)***	.572 (1.771)***	.659 (1.932)***	.314 (1.369) <sup>59</sup>
<b>Family religion</b>				
Islam (ref.)				
Non-Islam	1.604 (4.973)***	1.442 (4.229)***	1.292 (3.641)***	1.474 (4.368)***
<b>Gender</b>				
Female (ref.)				
Male	.419 (1.520)***	.435 (1.545)***	.525 (1.690)***	.791 (2.207)***
<b>Family religion * gender</b>	-.670 (.511)	-.315 (.730)	.083 (1.086)	-.655 (.519)
<b>N</b>	3280	3998	2850	2189
<b>Model Chi-square</b>	656.230***	792.531***	451.287***	349.960***
<b>Nagelkerke R square</b>	.310	.308	.286	.327

Note: 1. Number in the parentheses is odd ratios (Exp(B)).  
 2. “(/)” means that the odds ratios are logically unrealistic and statistically too high to be reported.  
 3. \*\*\* P<=.001; \*\* P<=.01; \* P<=.05

When the analysis reaches the level of junior high school, the professional/managerial/administrative *occupation* of either parent becomes statistically significant across all the cohorts. Children whose parents in professional/managerial/administrative occupation had much higher chances (3-6 times more likely) to attend junior high school compared with their counterparts whose parents were agricultural workers. Blue-collar workers did not show much difference from agricultural workers in terms of junior high school attendance except for the 1978-1981 cohort who attended junior high school in the early of 1990s. For this cohort who attended junior high school between 1991-1994, the blue-collar worker's children were 1.5 times more likely than the agricultural worker's children to attend junior high school.

*Number of rooms* in the household and accessibility to *electricity* are two variables that continue to be significantly related to junior high school attendance for almost all the cohorts. Having more rooms in the household and having access to electricity increased the odds for children to attend junior high school.

*Mother's education* still presents significant results for all birth cohorts included in the analysis. On average, children whose mother attended elementary education are 2.36 times<sup>4</sup> more likely to attend junior high school than children whose mother had no education. Nonetheless, children whose mother had some post-elementary education are on average 18.66 times more likely than the no-education mother's children to attend junior high school.

*Number of siblings* shows significant negative relationships with junior high school attendance for the two younger cohorts. The more siblings the children have, the lower the chances are for them to attend junior high school. However, for the older cohorts, no significant relationships are observed.

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<sup>4</sup> The average of the odds ratios for the four birth cohorts:  $(2.759+2.254+2.142+2.794) / 4 = 2.358$ .

*Urban/rural* residence is important for junior high school attendance. Children living in urban areas were about 2 times more likely than the rural children to attend junior high school. Only for the 1960-1967 cohort who attended junior high school during 1973-1980 when the school building program was being carrying out, was the relationship not significant.

The relationships between *family religion* and junior high school attendance do not differ for females and the males. Non-Islamic children were always better off than Islamic children. Non-Islamic children were 4-5 times ( $3.641 \leq \text{Exp (B)} \leq 4.973$ ) more likely to attend junior high school.

*Gender* becomes significantly related to junior high school attendance for each birth cohort. Being male was a consistent advantage for attending junior high school compared to being female. Literally, the odds ratios show declining priority of the male in attending junior high school with the time passing by, ( $\text{Exp (B)}$  and is equal to 2.207, 1.690, 1.545 and 1.520 respectively in the order from the oldest cohort to the most recent cohort). Whereas, we cannot conclude there was a trend of declining importance of gender in junior high school attendance over two decades because the differences between cohorts are not statistically significant by the t-test.

#### Dependent Variable 4:

Completing junior high school vs. never completing junior high school given junior high school attendance

(Table 4.4D)

**Table 4.4D**  
**Analysis I: Logistic Regression Coefficient and Odds Ratios for Completing Junior High School Given Junior High School Attendance, as Compared with Never Completing Junior High School, IFLS, 1997**

Variables	Birth Cohorts			
	1978-1981	1973-1977	1968-1972	1960-1967
<b>Parent's occupation</b>				
Agricultural workers (ref.)				
Prof./Manag./Admin.	1.135 (3.110)**	2.308 (10.052)*	.825 (2.282)	6.478 (/)
Blue-collar workers	.232 (1.261)	.339 (1.403)	-.831 (.435)**	.334 (1.397)
<b>Number of rooms</b>	.148 (1.159)**	.275 (1.316)**	.233 (1.263)**	.049 (1.050)
<b>Electricity</b>				
No (ref.)				
Yes	.577 (1.780)**	.081 (1.084)	.906 (2.475)*	1.045 (2.843)*
<b>Ownership of the house</b>				
No (ref.)				
Yes	.263 (1.300)	-.222 (.801)	.478 (1.613)	-.513 (.599)
<b>Mother's education</b>				
None (ref.)				
Elementary	.411 (1.509)*	.157 (1.170)	.432 (1.540)	-.128 (.880)
Post-elementary	1.402 (4.064)**	.912 (2.489)**	.762 (2.143)	.328 (1.388)
<b>Family size</b>	-.125 (.882)**	-.101 (.904)*	-.106 (.900)*	-.125 (.882)*
<b>Number of siblings</b>	-.008 (.992)	.018 (1.018)	.025 (1.025)	.099 (1.104)
<b>Urban/rural</b>				
Rural (ref.)				
Urban	-.106 (.900)	.307 (1.359)	.887 (2.427)**	-.037 (.964)
<b>Family religion</b>				
Islam (ref.)				
Non-Islam	.094 (1.099)	.375 (1.454)	.037 (1.038)	.328 (1.389)
<b>Gender</b>				
Female (ref.)				
Male	-.309 (.734)*	-.489 (.613)**	.200 (1.222)	-.449 (.639)
<b>Family religion * gender</b>	.326 (1.385)	-.036 (.965)	-.359 (.698)	.532 (1.702)
<b>N</b>	2523	2897	2082	1504
<b>Model Chi-square</b>	154.317***	92.173***	41.919***	30.923**
<b>Nagelkerke R square</b>	.123	.104	.094	.097

Note: 1. Number in the parentheses is odd ratios (Exp(B)).  
2. “(/)” means that the odds ratios are logically unrealistic and statistically too high to be reported.  
3. \*\*\* P<=.001; \*\* P<=.01; \* P<=.05

Looking through table 4.4D, we find that the relationships between most of the predictors (with the exception of family size) and junior high school completion become weaker than their relationships with junior high school attendance. Having either parent working in professional/managerial/administrative *occupation* only benefited the children for the youngest two cohorts. The children whose parents were blue-collar workers did not have significant differences in junior high school completion compared with the children of the agricultural workers except for the 1968-1972 cohort. The children of the blue-collar workers were less likely than those of the agricultural workers to complete junior high school given that they had attended junior high school. The disadvantage of the blue-collar worker's children during 1983-1987 when this cohort reached the age for completing junior high school was also related to the economic recession from 1982-1986 caused by the falling oil prices. As mentioned before, the economic recession attacked the urban area more seriously than the rural places. Therefore, it hurt the blue-collar workers more than the agricultural workers.

*Number of rooms* and *electricity* are still two important factors for junior high school completion. Having more rooms in the household and having access to electricity both increased the chances for completing junior high school. However, the odds ratios for number of rooms are smaller than those at the primary level and at the entrance of junior high school. That means an additional room in the household still increased the opportunities for completing junior high school but at lower ratios than it could increase the odds for attending primary school, completing primary school and attending junior high school.

The effects of *mother's education* diminish considerably at this level compared to its straight significant effects for all the cohorts on primary school attendance, primary school completion and junior high school attendance. Compared with the children whose mother had

no education, those whose mother had primary education or post-primary education only had privilege in junior high school completion for the youngest cohort (1978-1981). For the older cohorts, there were no significant differences between the children with educated and those with non-educated mothers as long as they had attended junior high school.

*Urban/rural* residence does not matter for most of the cohorts in completion of junior high school. There is no *interaction* between family religion and gender for any birth cohort, either. *Family religion*, which usually has positive effects on children's basic educational attainment at the first three levels, does not show any influence on junior high school completion. Regardless of whether they were Islamic or non-Islamic, as long as they have entered junior high school, they would have similar chances to complete it. The effects of *gender* are quite different from before. On the contrary to the positive effects, to be male became negatively related to junior high school completion. For the two younger cohorts, the males were less likely than the females to complete junior high school after they had entered the junior high school. For the older cohorts, there were no relationships between gender and junior high school completion.

*Family size* is the only exception from the generally diminished influence of the independent variables on completing junior high school compared with their influence on attending junior high school. Family size did not present any significant effect on junior high school attendance but it showed significant negative relationships with junior high school completion for each cohort. The more people living in the child's household, the lower were the chances that the children of this household would complete junior high school.

## *Analysis II*

### Descriptive Statistics

Analysis II uses the combined sample of sample I and sample II (as described in Chapter Three) in order to have wider age coverage for answering the research question two. Table 4.5 presents the percentage distribution of variables applied in analysis II for the whole sample and by different birth cohorts. The sample size is 28,730, which includes six consecutive age groups: 16-19, 20-24, 25-29, 30-37, 38-49 and 50-59. The twenties is the largest age group with 10,048 cases (35 percent of the sample population). The 30-37 year old group comprises the second largest age group with 6,362 cases, about 22 percent of the sample population. The number of people included in the 50-59 age group is the smallest.

According to Table 4.5, mothers of the older cohorts had less education than those of the younger cohorts. The trend is very straight for all three coded levels of mother's education. With the age group increasing, more mothers had no education while fewer mothers had elementary, and even fewer had post-elementary education. The missing information for mother's education also increases as the age group increases. This is because for the older cohorts, their mothers tend to have died or do not live in the same household with them. Therefore, it is harder to track their information in all the aspects, compared to mothers of the younger cohorts. For the whole sample, 39.3 percent of the mothers had attended elementary school; 12.0 percent of them had some forms of post-elementary education; 35.1 percent had no education at all. The total missing is 13.5 percent, which is still within the acceptable range.



**Table 4.5**  
**Descriptive Statistics for Analysis II, Indonesia Family Life Survey, 1997**

Variables	Birth Cohorts (Age Group)						
	- % (N) -						
	1978-1981 (16-19)	1973-1977 (20-24)	1968-1972 (25-29)	1960-1967 (30-37)	1948-1959 (38-49)	1938-1947 (50-59)	1938-1981 (16-59 Whole Sample)
<b>Explanatory Variables:</b>	- % -	-%-	- % -	- % -	- % -	- % -	- % -
<b>Mother's education</b>							
None (ref.)	18.6	24.2	29.0	37.9	47.7	59.9	35.1
Elementary	53.3	47.8	44.0	38.3	29.0	16.7	39.3
Post-elementary	19.9	18.1	15.0	10.2	4.7	2.5	12.0
Missing	8.3	9.9	12.0	13.5	18.6	20.9	13.5
<b>Family religion</b>							
Islam (ref.)	85.7	86.9	87.8	87.9	85.8	87.1	86.9
Non-Islam	14.3	13.1	12.2	12.1	14.2	12.9	13.1
Missing	0	0	0	0	0	0	0
<b>Gender</b>							
Female (ref.)	51.4	52.3	53.3	52.9	49.8	51.1	51.9
Male	48.5	47.7	46.7	47.0	50.2	48.9	48.1
Missing	0	0	0	0	0	0	0
<b>Urban/rural</b>							
Rural (ref.)	62.3	60.4	59.3	61.5	63.7	73.3	62.5
Urban	35.3	36.7	37.5	34.9	32.0	22.0	34.0
Missing	2.4	2.9	3.2	3.6	4.3	4.7	3.5
<b>Number of siblings</b>							
Valid N	4022	5187	4861	6362	5728	2570	28730
Mean	5.03	5.53	5.56	5.23	4.54	3.40	5.01
Std. Deviation	2.80	2.77	2.84	2.85	2.81	2.53	2.86
Skewness	0.658	0.526	0.490	0.389	0.431	0.823	0.554
<b>Dependent Variables:</b>							
<b>Primary school attendance</b>							
No (ref.)	1.5	2.3	8.3	11.9	25.6	25.6	7.8
Yes	97.9	96.9	90.5	86.5	72.7	72.7	91.0
Missing	0.6	0.9	1.2	1.6	1.7	1.7	1.1

<b>Primary school completion</b>							
No (ref.)	10.8	12.3	17.6	32.0	38.7	52.7	26.2
Yes	89.2	87.7	82.4	68.0	61.3	47.3	73.8
Missing	0	0	0	0	0	0	0
<b>Junior high attendance</b>							
No (ref.)	31.9	37.4	41.3	55.9	65.6	74.8	50.4
Yes	68.1	62.6	58.7	44.1	34.4	25.2	49.6
Missing	0	0	0	0	0	0	0
<b>Junior high completion</b>							
No (ref.)	41.2	40.9	44.0	58.3	68.7	76.8	54.1
Yes	58.8	59.1	56.0	41.7	31.3	23.2	45.9
Missing	0	0	0	0	0	0	0

---

The distribution of family's religious affiliation for the whole sample is consistent with the religious distribution of the whole population in Indonesia at the survey time (CIA, 2005): 86.9 percent of people were Muslim and 13.1 percent were believers of other religions including Christian, Hindu, Buddhism and some other aboriginal religions.

Regarding gender, around 52 percent of the selected sample are females and around 48 percent are males. Thus, this sample includes a bit more females than males.

Moreover, the table shows that most people in the sample lived in rural places when they were twelve years old (62.5 percent). Individuals from the older cohorts are more likely than those from the younger cohorts to live in rural places when they were young.

Number of siblings is the only interval scale variable in this analysis. People in this sample have around 5 siblings on average. These siblings include both household and non-household siblings as well as those with either of their biological parents as household head. Some of the extreme values of this variable have been deleted before the statistical analyses.

As reported in Table 4.5, around 91 percent of the sample population attended primary school and 73.8 percent of people completed primary school. However, only about 49.6 percent of the sampled people ever attended junior high school and 45.9 percent of the same sampled people completed junior high school. When compared across the birth cohorts, a trend is found for all dependent variables: as the age group increases, the percentage of people who answered "No" to the questions on whether they attained or completed a certain level of basic education increases, too. In another words, the younger people have higher levels of basic educational attainment than the older people.

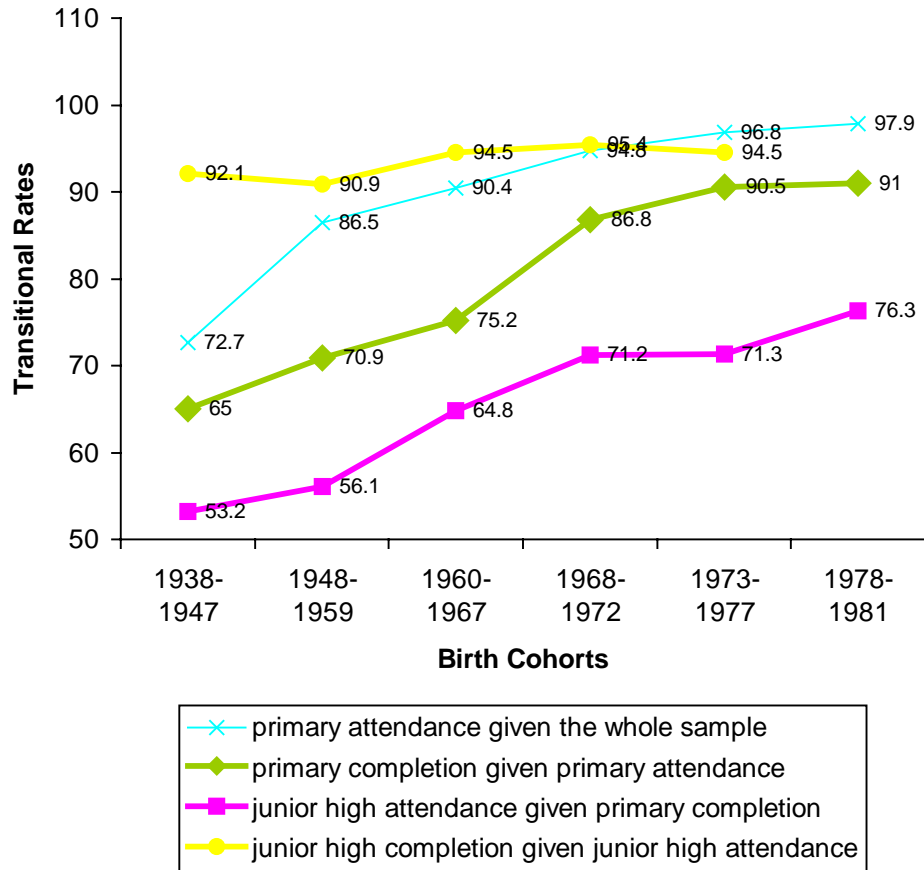
As was done for analysis I, two transitional rates and two completion rates are calculated again for analysis II based on four dependent variables. The results are shown by a line chart in

Figure 4.2. Compared with Figure 4.1, the general trends and pattern of the chart have no change. The transitional rate to primary school and from primary to junior high school, as well as the primary school completion rate, still display the upward trends in general from the older cohort to the younger cohort but the lines are steeper than those observed in Figure 4.1 for analysis I. This is because the wider age coverage in analysis II makes the trends sharper and more obvious.

The three outstanding increases mentioned in Figure 4.1 are still there in Figure 4.2. They all occurred at the same stage from the 1960-1967 to 1968-1972 birth cohort but increase more sharply: the transitional rate to primary school increased 4.4 percent; the primary school completion rate increased 11.6 percent; the transitional rate to junior high school increased 6.4 percent. However, the two decreases shown in Figure 4.1 for junior high school transitional rate and junior high school completion rate both happened from the 1968-1972 to 1973-1977 cohort and only hold for the completion rate of junior high school (decreased by 0.9 percent). Yet for the transitional rate of junior high school, the decrease is replaced by a 0.1 percent of increase. In spite of the disappearance of this decrease in Figure 4.2, we can still sense that something happened in this period because unlike the steady growth, the transitional rate of junior high school almost does not change from the 1968-1972 to 1973-1977 cohort (71.2 percent vs. 71.3 percent).

Along with the change which happened to the original four cohorts in analysis I, there is another striking change observed for the two additional cohorts added in analysis II. The primary school transitional rate increased by 13.8 percent from the 1938-1947 cohort to the 1948-1959 cohort.

**Figure 4.2**  
**Transitional Rates by Birth Cohorts for Analysis II**



The line for junior high completion given the enrollment in junior high school stays pretty stable across the birth cohorts and at the top for both analyses. It indicates that over time, there was not much change for the completion rates of junior high school. Once a child has been selected through the transitional point to junior high school, he/she was very likely to finish it. Moreover, the order of the lines remains the same as in Figure 4.1, which means that compared among the three stages of basic education, the individuals are least likely to make transitions to junior high school given that they have completed primary school but they are most likely to finish junior high school if they have attained it.

#### Bivariate Association

Since the results of the crosstabular analysis of bivariate association in analysis II do not show a much different pattern of relationship from what was found in analysis I, I will not report them again.

#### Logistic Regression Analyses

Table 4.6 presents the logistic regression results for analysis II. As explained in Chapter III, analysis II includes fewer explanatory variables than analysis I because the researcher tends to extend the age coverage of the sample in order to find some long-term trends for the effects of some background variables on basic educational attainment.

Dependent Variable 1:

Attending primary school vs. never attending primary school

(Table 4.6A)

**Table 4.6A****Analysis II: Logistic Regression Coefficient and Odds Ratios for Attending Primary School, as Compared with Never Attending Primary School, IFLS, 1997**

Variables	Birth Cohorts					
	1978-1981	1973-1977	1968-1972	1960-1967	1948-1959	1938-1947
<b>Mother's education</b>						
None (ref.)						
Elementary	1.956 (7.068) <sup>***</sup>	2.144 (8.529) <sup>***</sup>	2.078 (7.992) <sup>***</sup>	1.899 (6.676) <sup>***</sup>	2.050 (7.769) <sup>***</sup>	2.751 (15.655) <sup>***</sup>
Post-elementary	2.827 (16.898) <sup>***</sup>	3.200 (24.522) <sup>***</sup>	3.324 (27.767) <sup>***</sup>	4.348 (77.354) <sup>***</sup>	6.208 (/)	6.956 (/)
<b>Number of siblings</b>						
	-.061 (.941)	.030 (1.030)	.049 (1.050)	.027 (1.027)	.085 (1.089) <sup>***</sup>	.169 (1.184) <sup>***</sup>
<b>Urban/rural</b>						
Rural (ref.)						
Urban	-.208 (.812)	.578 (1.783) <sup>*</sup>	.878 (2.405) <sup>***</sup>	.861 (2.366) <sup>***</sup>	.999 (2.716) <sup>***</sup>	.882 (2.416) <sup>***</sup>
<b>Family religion</b>						
Islam (ref.)						
Non-Islam	.559 (1.749)	-.954 (.385) <sup>**</sup>	-.003 (.997)	.084 (1.088)	.125 (1.133)	.312 (1.366)
<b>Gender</b>						
Female (ref.)						
Male	-.156 (.855)	.002 (1.002)	.802 (2.230) <sup>***</sup>	.607 (1.836) <sup>***</sup>	.818 (2.266) <sup>***</sup>	1.373 (3.948) <sup>***</sup>
<b>Family religion * gender</b>						
	-.268 (.765)	.995 (2.705)	.175 (1.192)	-.066 (.936)	.404 (1.497)	.350 (1.420)
<b>N</b>	4022	5187	4861	6362	5728	2570
<b>Model Chi-square</b>	50.595 <sup>***</sup>	146.061 <sup>***</sup>	259.772 <sup>***</sup>	474.246 <sup>***</sup>	545.631 <sup>***</sup>	505.868 <sup>***</sup>
<b>Nagelkerke R square</b>	.111	.166	.202	.195	.216	.330

Note:

1. Number in the parentheses is odd ratios (Exp(B)).
2. “(/)” means that the odds ratios are logically unrealistic and statistically too high to be reported.
3. \*\*\* P<=.001; \*\* P<=.01; \* P<=.05

*Mother's education* is still a strong predictor of the child's basic educational attainment. Mothers who ever entered primary school have steadily significant positive effects on their children's primary attendance across the cohorts. For the children who were born in and after 1948 and went to primary school in and after 1955, those whose mother had elementary education were about 6.7-8.5 times ( $6.676 \leq \text{Exp (B)} \leq 8.529$ ) more likely than those whose mother had no education to attend primary school. However, for the children who were born before 1948 ( $\geq 50$  years old), children with mothers who had elementary education were about 15.7 times ( $\text{Exp (B)} = 15.655$ ) more likely to attend primary school than the children of no-education mothers. By the t-test, it is found that the effect of mother's elementary education on primary school attendance decreased significantly since the 1948 cohort. Mother's post-elementary education has even stronger effects on children's primary school attendance. The mother who had some post-elementary education increased the chances for her child to attend primary school by 16.9-77.4 times ( $16.898 \leq \text{Exp (B)} \leq 77.354$ ) than the mother who had no education. The extremely high value of the odd ratios for two oldest cohorts (1938-1947 and 1948-1959) is because almost all the children of mothers who had some post-elementary education attended the primary school. Therefore, the numbers in these two cells show almost no variation at all. Although the relationship is non-significant for these two cohorts, we can still see how mother's post-elementary education made a difference in primary school attendance since all of their children attained this level of education.

The effect of *number of siblings* only made a significant difference for the two oldest cohorts (1938-1947 and 1948-1959). It is unexpected that with each additional sibling, the odds for children to attend primary school actually increased rather than decreased about 1.1 times ( $\text{Exp (B)} = 1.184$  and  $\text{Exp (B)} = 1.089$ ). In addition, the t-test shows that the differences between



these two cohorts are not by chance ( $t = 2.44$ ). That is to say, the effect of number of siblings on primary school attendance significantly declined from the 1938-1947 cohort to the 1948-1959 cohort.

*Urban/rural residence* is important for most of the cohorts except the youngest one. Urban children were more likely than the rural children to attend primary school. The difference between the urban and the rural areas disappeared for the 1978-1981 cohort. This cohort attended primary school after 1984 when the compulsory initiative about six-year primary school education had been proposed.

*Family religion* has no effect on primary school attendance except for the 1973-1977 cohort. For this cohort who went to primary school during 1980-1984, non-Islamic children were less likely to attend primary school than Islamic children. This result is consistent with what was found in analysis I. As already mentioned in that part, the Village Law of 1979 contributed to the disadvantage of non-Islamic children.

The same significant decrease of the effect as what happened to mother's elementary education and number of siblings appears again for *gender* at the same period (from the 1938-1947 cohort to the 1948-1959 cohort). Boys were about 4 times ( $\text{Exp (B)} = 3.948$ ) more likely than girls to attend primary school for the 1938-1947 cohort but the number decreased to about 2 times ( $\text{Exp (B)} = 2.266$ ) for the 1948-1959 cohort. Since the difference is significant ( $t = 3.30$ ), we can conclude that the gender gap in primary school attendance narrowed since the 1948 cohort.

The significant drop of the effect from the 1938-1947 cohort to the 1948-1959 cohort for mother's education, number of siblings and gender is related to the historical background and state policy around that period of time. The 1938-1947 cohort attended primary school between

1945-1954, which was the time of Japanese occupation (1942-1949) and the beginning of the newly independent regime of Sukarno (1949-1954). As we mentioned in the first chapter regarding the educational policy change in Indonesian history, Japanese occupants, unlike their Dutch counterparts, deprived and exhausted the Indonesian resources during their occupation in order to cooperate with their military operations in the whole East and Southeast Asian areas. It was a time of war when all social resources were very tight, and there was no exception for education. Moreover, the beginning years of independent Indonesia were accompanied by war of independence and violence and conflicts among various social forces. It was a period of disorder with no attention paid to education. Therefore, educational attainment, started from the very beginning – access to primary school, depended highly on family background more than other times since then. However, the 1948-1959 cohort attended primary school between 1955-1966, which covered from the middle to the end of the Sukarno's regime. Although the first independent government of Indonesia faced a lot of problems in re-establishing the country after the Japanese occupation and the revolution for independence, it made some efforts on providing the primary education. As described in the first chapter, The Education Law of 1950/1954 on compulsive primary school attendance and the expansion of educational institutions between 1953 and 1960 exemplified the new government's attempts to spread primary education. With these efforts, the effects of family background on a child's primary school attendance were significantly decreased from the cohort before them.

Another point worth mentioning in Table 4.6A is a statistic called Nagelkerke R square. The Nagelkerke R square is generally increasing with the increase of the age group. The Nagelkerke R square indicates how much variance in the dependent variable is explained by the independent variables. In this case, five independent variables and one interaction term in this

model explain a greater amount of variance in primary school attendance for the older cohorts than for the younger cohorts. It is an indicator, though not the direct indicator, that the combined effect of mother's education, number of siblings, urban/rural residence, family religion, gender, and the interaction of family religion and gender on children's primary school attendance is stronger for the older cohorts than for the younger cohorts.

Dependent Variable 2: Completing primary school vs. never completing primary school given primary school attendance (Table 4.6B)

Since this is the second dependent variable, I will only address the relationship that has different patterns with that in the model for the first dependent variable.

*Number of siblings* was positively related to primary school completion for the older cohorts (1938-1947, 1948-1959, 1960-1967). An additional sibling would increase a child's chances to complete primary school. Then it turned out having no effect on the primary school completion for the 1968-1972 cohort. For the two youngest cohorts (1973-1977, 1978-1981), the relationship was reversed – having more siblings became a disadvantage for primary school completion. The transitions of the relationship from positive to non-significant and from non-significant to negative are statistically significant by the t-test. That is to say, the change across the cohorts is not by chance. This result is similar to what was found in analysis I for the same dependent variable – primary completion. As explained in analysis I, the older cohorts (older than 24 at the time of survey) tended to have more non-household siblings, which may add positive effects on completing of primary school.

**Table 4.6B**  
**Analysis II: Logistic Regression Coefficient and Odds Ratios for Completing Primary School Given Primary School Attendance, as Compared with Never Completing Primary School, IFLS, 1997**

Variables	Birth Cohorts					
	1978-1981	1973-1977	1968-1972	1960-1967	1948-1959	1938-1947
<b>Mother's education</b>						
None (ref.)						
Elementary	.799 (2.224) <sup>***</sup>	.955 (2.598) <sup>***</sup>	1.058 (2.880) <sup>***</sup>	.897 (2.451) <sup>***</sup>	.977 (2.657) <sup>***</sup>	.935 (2.547) <sup>***</sup>
Post-elementary	2.997 (20.023) <sup>***</sup>	2.579 (13.183) <sup>***</sup>	3.507 (33.332) <sup>***</sup>	2.823 (16.832) <sup>***</sup>	2.751 (15.662) <sup>***</sup>	2.752 (15.670) <sup>***</sup>
<b>Number of siblings</b>	-0.067 (.935) <sup>**</sup>	-0.053 (.948) <sup>**</sup>	.027 (1.028)	.095 (1.100) <sup>***</sup>	.082 (1.085) <sup>***</sup>	.104 (1.110) <sup>***</sup>
<b>Urban/rural</b>						
Rural (ref.)						
Urban	.161 (1.175)	.498 (1.646) <sup>***</sup>	.759 (2.137) <sup>***</sup>	.702 (2.018) <sup>***</sup>	.626 (1.870) <sup>***</sup>	.720 (2.054) <sup>***</sup>
<b>Family religion</b>						
Islam (ref.)						
Non-Islam	.061 (1.063)	.599 (1.820) <sup>*</sup>	1.089 (2.970) <sup>***</sup>	.656 (1.927) <sup>***</sup>	.552 (1.736) <sup>***</sup>	.982 (2.670) <sup>***</sup>
<b>Gender</b>						
Female (ref.)						
Male	.208 (1.231)	-.014 (.986)	.552 (1.737) <sup>***</sup>	.374 (1.454) <sup>***</sup>	.443 (1.557) <sup>***</sup>	.698 (2.010) <sup>***</sup>
<b>Family religion * gender</b>	-.110 (.896)	.123 (1.131)	-.891 (.410) <sup>*</sup>	.016 (1.016)	-.129 (.879)	-.544 (.580)
<b>N</b>	3939	5025	4611	5755	4956	1869
<b>Model Chi-square</b>	162.891 <sup>***</sup>	235.110 <sup>***</sup>	391.261 <sup>***</sup>	661.863 <sup>***</sup>	488.594 <sup>***</sup>	188.077 <sup>***</sup>
<b>Nagelkerke R square</b>	.102	.113	.175	.189	.165	.171

Note:

1. Number in the parentheses is odd ratios (Exp(B)).
2. “(/)” means that the odds ratios are logically unrealistic and statistically too high to be reported.
3. \*\*\* P<=.001; \*\* P<=.01; \* P<=.05

There is one *interaction term* that is significant on primary school completion. For the 1968-1972 cohort, the relationship between gender and primary school completion depended on family religion. For the Islamic children, boys had better chances than girls to complete primary school while, for the non-Islamic children, boys were less likely than girls to complete primary school if they attended primary school. Islamic girls were the most disadvantaged whereas non-Islamic girls were the most advantaged in terms of primary school completion given primary school attendance.

*Family religion* did not have much influence on primary school attendance but its effects are almost all significant on completing the primary school. Non-Islamic children were about 2-3 times more likely than the Islamic children to complete primary school.

#### Dependent Variable 3:

Attending junior high school vs. never attending junior high school given primary school completion

(Table 4.6C)

Almost each single independent variable becomes significant on junior high school attendance given primary school completion. However, there is no trend of change found over time.

The *interaction* of family religion and gender on junior high school attendance was significant for the youngest cohort 1978-1981. The relationship is the same as what was found for primary school completion: non-Islamic girls were better off than Islamic girls; non-Islamic boys were better off than Islamic boys; Islamic boys were better off than Islamic girls; non-

Islamic boys were however worse off than non-Islamic girls. Islamic girls were the most disadvantaged group while non-Islamic girls were the most advantaged group.

**Table 4.6C**  
**Analysis II: Logistic Regression Coefficient and Odds Ratios for Attending Junior High School Given Primary Completion, as Compared with Never Attending Junior High School, IFLS, 1997**

Variables	Birth Cohorts					
	1978-1981	1973-1977	1968-1972	1960-1967	1948-1959	1938-1947
<b>Mother's education</b>						
None (ref.)						
Elementary	1.198 (3.312)***	.974 (2.650)***	.844 (2.325)***	.844 (2.325)***	.867 (2.381)***	.538 (1.712)***
Post-elementary	3.728 (41.612)***	3.675 (39.449)***	3.360 (28.801)***	2.804 (16.515)***	3.456 (31.692)***	2.488 (12.039)***
<b>Number of siblings</b>	-.041 (.960)**	-.006 (.994)	.003 (1.003)	.036 (1.037)**	.028 (1.029)	.101 (1.106)***
<b>Urban/rural</b>						
Rural (ref.)						
Urban	.937 (2.552)***	.770 (2.160)***	.943 (2.569)***	.657 (1.928)***	.671 (1.956)***	.842 (2.322)***
<b>Family religion</b>						
Islam (ref.)						
Non-Islam	1.490 (4.439)***	1.218 (3.382)***	1.256 (3.512)***	.927 (2.527)***	.879 (2.408)***	.673 (1.960)*
<b>Gender</b>						
Female (ref.)						
Male	.397 (1.488)***	.474 (1.606)***	.523 (1.687)***	.632 (1.882)***	.574 (1.775)***	.246 (1.278)
<b>Family religion * gender</b>	-.776 (.460)*	-.228 (.796)	.114 (1.121)	-.017 (.984)	-.223 (.800)	-.108 (.898)
<b>N</b>	3587	4549	4004	4328	3514	1216
<b>Model Chi-square</b>	666.672***	854.925***	702.278***	683.649***	492.545***	129.892***
<b>Nagelkerke R square</b>	.281	.276	.266	.234	.218	.173

Note:

1. Number in the parentheses is odd ratios (Exp(B)).
2. “(/)” means that the odds ratios are logically unrealistic and statistically too high to be reported.
3. \*\*\* P<=.001; \*\* P<=.01; \* P<=.05

Dependent Variable 4:

Completing junior high school vs. never completing junior high school given junior high school attendance

(Table 4.6D)

In terms of junior high school completion, the effect of each independent variable weakens. *Mother's education*, in spite of straight significance across the cohorts, undermines at the levels of significance (from .001 to .01 or .05 level). *Number of siblings* is only significant for the youngest cohort (1978-1981) as a negative relationship. *Urban/rural* residence only matters for half of the cohorts and for the other half, it has no effect. Neither *family religion* nor the *interaction* of family religion and gender has any significant effect for any cohort.

The effect of *gender* not only weakens but also displays an interesting trend. It changed from the positive significance of the 1948-1959 cohort to non-significance then to negative significance of the 1973-1977 cohort. Such a change over time is testified significant by the t-test. Therefore, we can conclude that there was a trend of declining advantage of the boys in junior high school completion all the way to its opposite, that is, the girls became more likely than the boys to finish junior high school given that they had attended it.

The attenuating effects of family background on junior high school completion can also be observed through the Nagelkerke R squares. Compared with the others in the first three dependent variables, the Nagelkerke R squares for junior high school completion are the smallest. That means the combined effects of family background variables explain the least amount of variance in this dependent variable compared with the other three dependent variables.

**Table 4.6D**  
**Analysis II: Logistic Regression Coefficient and Odds Ratios for Completing Junior High School Given Junior High School Attendance, as Compared with Never Completing Junior High School, IFLS, 1997**

Variables	Birth Cohorts					
	1978-1981	1973-1977	1968-1972	1960-1967	1948-1959	1938-1947
<b>Mother's education</b>						
None (ref.)						
Elementary	.484 (1.623)**	.379 (1.461)* 1.633	.468 (1.597)* 1.238	.438 (1.549)* 1.223	.410 (1.507)* 2.935	1.125 (3.082)**
Post-elementary	1.788 (5.980)***	(5.119)***	(3.449)***	(3.398)***	(18.823)***	2.037 (7.667)*
<b>Number of siblings</b>	-.046 (.955)*	.014 (1.014)	.037 (1.038)	.012 (1.012)	.034 (1.035)	.057 (1.058)
<b>Urban/rural</b>						
Rural (ref.)						
Urban	.022 (1.022)	.618 (1.856)***	.432 (1.540)*	.490 (1.633)**	.122 (1.130)	.589 (1.802)
<b>Family religion</b>						
Islam (ref.)						
Non-Islam	.024 (1.025)	.071 (1.073)	.742 (2.099)	.155 (1.168)	.076 (1.079)	-.108 (.897)
<b>Gender</b>						
Female (ref.)						
Male	-.353 (.703)**	-.430 (.650)*	-.017 (.984)	.251 (1.286)	.476 (1.610)*	.579 (1.785)
<b>Family religion * gender</b>	.303 (1.354)	.260 (1.297)	-.243 (.784)	.712 (2.038)	-.416 (.660)	1.115 (3.050)
N	2739	3245	2852	2805	1972	648
<b>Model Chi-square</b>	103.798***	66.315***	33.196***	36.998***	52.011***	27.660***
<b>Nagelkerke R square</b>	.075	.066	.042	.044	.070	.120

Note:

1. Number in the parentheses is odd ratios (Exp(B)).
2. “(/)” means that the odds ratios are logically unrealistic and statistically too high to be reported.
3. \*\*\* P<=.001; \*\* P<=.01; \* P<=.05



## CHAPTER V

### Discussion and Implications

#### *Introduction*

This chapter summarizes the findings of the study and presents the discussion, implications and recommendations for further research based on the results of both of the two types of data analysis I conducted.

#### Analysis I

In my first analysis, I used logistic regression and included selected variables representing economic capital, human capital, and social capital of the child's family as well as their social demographics to examine their impact on the child's basic educational attainment by different birth cohorts.

*Economic capital* – Parent's occupation has no significant effect on a child's primary school attendance and primary school completion for any of the birth cohorts. However, having either parent in a professional/managerial/administrative occupation significantly increases the odds that a child will attend junior high school, compared with having either parent working in agriculture. Such a significant relation remains similar for those completing junior high school. In general, blue-collar workers do not show much difference from the agricultural workers in terms of basic educational attainment, except that, during the economic crisis, they were more fragile than the agricultural workers.

The number of rooms in the household is a strong predictor of basic educational attainment. It always presents a significant positive relationship with the four transitions of basic education across the birth cohorts. More rooms in the household are always significantly

associated with higher chances of attending and completing schools regardless of controlling for the other factors.

Electricity usually makes a difference, too. Children who have access to electricity at home are more likely to make a smooth transition to the next level of basic education than those who have no access to electricity. However, there is no evidence that ownership of the house has an influence on children's basic educational attainment over time. Whether a child lives in a house that is self-owned, rented or other forms of ownership does not affect their educational attainment.

*Human capital* – Mother's education is the key indicator of human capital in the family. For mothers, even having some elementary education can make a difference in their children's basic educational attainment. Children of mothers having some elementary education are more likely than those of mothers having no education to attend and complete primary school and also to attend junior high school for all birth cohorts, but it does not have the same significant effect on the completion of junior high school given junior high school attendance. Moreover, the effect of the mother having some elementary education on a child's primary attendance is stronger than the effect on a child's primary completion, junior high attendance and junior high completion. If the mother has some post-elementary education, it further increases the chances for their child to achieve basic education.

*Social capital* – This study finds that social capital, measured by family size and number of siblings, does not have a significant relationship on a child's basic educational attainment when adjusting for all the other factors. The number of siblings only shows a couple of significant relationships here and there but they are not always negative as hypothesized. For some older cohorts who tend to have more siblings living outside the home, the relationship

tends to be positive instead of negative. This positive relationship is likely caused by the financial contribution of these non-household siblings to the focus child's education.

Family size does not show any consistent influence across the birth cohorts on the first three transitions of basic education but it always has an effect on the completion of junior high school for each cohort. More people living in one household decrease the chance for a child in this household to complete junior high school. The stronger effect of family size at the transition of junior high school completion, compared with the other three transitional stages of basic education, may be caused by the higher costs of upper secondary education and the rising value of the child as part of the labor force. On the one hand, since further education after completing junior high school costs more than basic education, children whose families would not continue their schooling may quit earlier than before they complete junior high school. On the other hand, children with big families may be needed to help with the household work or needed to take a job outside the house. It would be too early to withdraw them from school before the level of junior high school because they would be too young to be a productive source of labor and also the compulsory education law prohibited families from doing this.

*Social demographics* – Urban/rural residence influenced more cohorts at the transition to primary and junior high school than at the level of completion of both schools. In general, urban children have better chances to attend and complete schools than the children in rural areas except at the time of economic recession. The results show that during the economic recession in the late of 1980s, urban children were actually more at a disadvantage than rural children to get access to the primary school because the urban families were attacked more seriously than the rural families by the economic recession.

*Interaction term* – There is no interaction between family religion and gender in most of the cases. Only the interaction for primary attendance of the 1968-1972 cohorts shows a significant effect. In this exception, the relationship indicates that Islamic girls were the most disadvantaged group in primary school attendance compared with Islamic boys and non-Islamic boys and girls.

Both family religion and gender have a greater impact on junior high school attendance than any other transitions of basic education. In general, non-Islamic children are better off than Islamic children and boys are better off than girls. However, at the completion of primary school, girls overtook boys among the two most recent cohorts.

## Analysis II

The sample for analysis II includes a limited set of explanatory variables that cannot be categorized as different types of family capital.

Mother's education still shows an impact on a child's basic educational attainment across different age groups, although no obvious trend is observed over time. Two results are noteworthy. First, mothers having some elementary education affect children's primary school attendance more than the other three levels of basic education attainment.<sup>1</sup> Second, having a mother with some post-elementary education is associated with even higher chances<sup>2</sup> of successful transition at each level of basic educational attainment than having a mother with no education.

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<sup>1</sup> The odds ratios of mother having some elementary education for primary completion, junior high school attendance and junior high school completion range from 1-3 whereas the odds ratios for primary attendance range from 7-15 (see Table 4.7).

<sup>2</sup> The minimum odds ratio of mother having some post-elementary education is 3.398.

The effect of the number of siblings presented an interesting relationship that was unexpected. I found that, after controlling for other factors in the regression equation, the number of siblings had a significant positive instead of negative relationship with basic educational attainment among the older cohorts. The positive relationship means that as the number of siblings increases, the chances for a child to attain basic education also increases. The reason for this positive relationship is unclear. The inclusion of non-household siblings, who might be contributing financially to the parental home, is one possible explanation.

In most cohorts in my sample, a child living in an urban area is more likely than a child living in a rural area to access and complete basic education. Across the birth cohorts, there is no clear pattern of urban/rural difference in basic educational attainment.

Just as in analysis I, the interactions of family religion and gender in analysis II are rarely significant. The two significant interactions appear at the primary school completion for the 1968-1972 cohort and at the junior high school attendance for the 1978-1981 cohort, where the relationship between gender and the corresponding transitions of the school depended on a child's family religion. For Islamic families, boys were better off than girls in school attainment. However, among non-Islamic families, girls were better off than boys. Like the result in analysis I, Islamic girls were the most disadvantaged group in regards to school attainment.

The effect of family religion is more important at the completion of primary school and at the transition to junior high school than at the other levels of school transition. Non-Islamic children were more likely than Islamic children to complete primary school, given primary school attendance, and to attend junior high school given primary school completion. However, a reversed relationship appeared among the 1973-1977 cohort at primary school attendance because of the racial and religious conflicts, which was resulted from the Village Law of 1979.

The male advantage in primary school attendance and completion disappeared in the two most recent cohorts (1973-1977 and 1978-1981). For junior high school attendance, it does not show any change over time. Boys had a better chance to access junior high school, given their completion of primary school. However, among children who had attended junior high school, there was not much gender difference among the older cohorts born before 1972. Among the younger cohorts born after 1972, girls actually completed junior high school at greater rates than did boys.

### *Discussion*

The results of this analysis indicate that the following variables are among the most significant predictors of children's basic educational attainment in terms of primary school attendance, primary school completion, junior high school attendance and junior high school completion: parent's occupation, number of rooms, electricity, mother's education, urban/rural residence, family religion and gender.

Parent's occupation does not really matter until the transition to high school. This finding is consistent with what Mare found in his study about father's occupation (Mare 1980). According to this study, after attending the primary school, the effects of parent's occupation begins to emerge. The biggest difference between people in professional, managerial, or administrative, on the one hand, and agricultural workers, on the other hand, lies at the 1973-1977 birth cohort who attend and complete junior high school during 1986-1992. The later half of 1980s is a period of time when Indonesia experienced an economic shock mainly caused by the fall of the oil price. According to one report, "The oil price fell 35 percent in 1986 alone and maintained a low level for the remainder of 1980s" (Rodgers 1994: 6). The economic

contraction influenced the 1973-1977 birth cohort, who were in a school progression, by enlarging the effect of parent's occupation. During this period, having a parent in professional/managerial/administrative occupations increased a child's chances to access and complete junior high school by 5-10 times compared with a child of agricultural workers. By contrast, children of the blue-collar workers were less likely than those of agricultural workers to complete junior high school after they had attended it (see Table 4.4B-4.4D). Parental occupation was very sensitive to the economic crisis. Usually, blue-collar workers such as factory workers and manual workers were the most vulnerable groups. They were most likely to lose their jobs during the economic crisis. Those who were lucky enough to hold onto their jobs remained in constant fear of being laid off. Unemployed workers faced the greatest challenges. As unemployment rates skyrocketed, high competition for any available jobs drove down wages. Compared with that population, agricultural workers still had the lands on which they could depend. The upper class population (people in the professional/managerial/administrative occupation) was always the least affected group because these people had power and owned resources that could protect them from losing too much in the economic crisis.

The number of rooms in a household, like the accessibility to electricity, is proxy of a family's economic resources. They are seldom used in the studies of developed countries but are common indicators of household characteristics used for developing countries in Asia and Africa. Some other common indicators used to describe the household status include piped water, toilet facilities, covered floor and ceiling. The findings of this study confirm what was found in previous studies (Psacharopoulos & Arriagada 1989; Lockheed, Fuller & Nyirongo 1989). Household characteristics are effective measurements for a family's economic capital in developing or undeveloped countries. Both number of rooms and accessibility to electricity

show a positive significant relationship with grade progression in basic education. This study also finds that number of rooms in the household has more influence on a child's basic educational attainment than does ownership of the house. As I mentioned in the fourth chapter, ownership of the house may not be a good indicator of a family's economic status in some agriculture-led countries because rural people usually own their own house in spite of the poor conditions of the house. Instead, number of rooms in the house is not only an indicator of family's economic resources, but more rooms in the house could also provide the children living in the household with more independent and quiet spaces for study, which positively influences their schooling. The results of this study suggest that number of rooms is among the strongest predictors of a child's basic educational attainment. It is almost significant for all cohorts at each transition of the school. The straight significance of number of rooms reveals that separate spaces in a household is crucial for a child's basic educational attainment.

The rest of the four variables (mother's education, urban/rural, family religion and gender) are the key predictors of school progression of basic education for both analysis I and II. The children of well-educated mothers also tend to have greater levels of educational attainment. The literate mother, even with a small amount of education, is enough to make difference in her child's educational attainment. Based on the findings, the biggest difference between elementary-educated mothers and uneducated mothers appears at their children's primary school attendance more than at other levels of basic education. Literate mothers, as a result of primary education, are more likely than illiterate mothers (with no education) to send their children to primary school. Perhaps literate mothers saw how education made a difference in their own lives, so they wish to send their children to primary school. Literate mothers are more able to accept and process information about the child's schooling, so they have more



knowledge of when and how to send their children to the primary school than do uneducated mothers.

Urban/rural differences in basic educational attainment almost disappeared for the youngest cohort, those who were born after 1978 and began schooling after 1985. This disappearance is evident in primary school attendance and completion, as well as junior high school completion. At junior high school attendance, urban/rural differences are always there even for the youngest cohort. Urban children were more likely than the rural children to continue on to junior high school after their completion of primary school. There is no obvious increase or decrease of urban/rural differences over time. That is to say the privilege of urban children in junior high school attendance did not change over the studied period of fifty years.

My investigation of family religion shows that non-Islamic families have a consistently significant positive impact on their children's transition to junior high school. Non-Islamic religions include Christianity, Buddhism and Hinduism, among which about 60 percent are Christians. The advantage of non-Islam faiths over Islam in junior high school attendance can be partly attributed to the social status concealed behind the religious affiliations. Christians, despite their much smaller numbers than Muslims, enjoy a higher social status in Indonesia. Many Chinese are Christians (Ricklefs 2001: 401). Most Chinese in Indonesia run their own business. They are called *cukongs* (Chinese entrepreneurs) in Indonesian. The *cukongs* were estimated to control around 70 percent of all private economic activity in Indonesia in 1990s (ibid: 393). They constitute a main body of indigenous Indonesian elite. In addition, most Christians live in the big cities of East and Central Java (ibid: 354), the most developed and modern regions of Indonesia. However, their higher social status does not mean they are respected by the majority of Muslims. On the contrary, they are hated by many devout Islamic

leaders and especially by their impoverished followers. Anti-Christian and anti-Chinese riots occurred repeatedly in the history of Indonesia. At the primary level, the exception of the disadvantage of the non-Islamic children for the 1973-1977 cohort was related to the anti-Chinese riots and religious conflicts caused by the Village Law of 1979.

Gender difference in basic educational continuation had disappeared for the youngest cohorts at the primary level and even reversed (male dominance to female dominance) at the completion of junior high school. However, the advantage of males was still consistent at the transition to junior high school. According to the literature review in chapter two, Indonesia is a country where women enjoy relatively higher status than the women in other Muslim countries. One of the country's vice presidents, Megawati Sukarnoputri, is a woman. One of the greatest barriers for girl's education in this country was the problem of early marriage (Blackburn 2004). According to a United Nation's report, "Early marriage for girls has been an important feature of the marriage pattern in Indonesia and the prevalence of this practice is attested to by data from censuses and surveys...At the 1980 census, ...more than two thirds of the ever-married women contracted their first marriage when they were under 19 years of age...according to the 1994 Demographic and Health Survey, 56 per cent of all ever-married women reported that they were below 19 years of age when they married for the first time" (UN 1998:39). Such a problem was more prominent in rural areas than in urban areas. In the 1994 Demographic and Health Survey, 60.7 percent of ever-married women aged 10 years and over reported their first marriage happened before 19 years old in rural areas while the proportion was 46.0 percent in urban areas (ibid).

Although this study does not test the relative importance of each type of capital owned by the family, the results indicate that economic capital, human capital and social demographics are

all very important for a child's basic educational attainment. However, social capital in terms of total number of people in the household and number of siblings, which proved to be significant for children's educational attainment in some other studies (see chapter two), does not prove that important when controlling for other things in this study. Family religion as an indicator of family's social capital plays an important role in a child's basic educational attainment especially at the transition to junior high school. Nevertheless, as I mentioned, the significant effect of family religion cannot be completely attributed to the belief in religion itself. The economic power and social class of the non-Islamic family's standing, more than their religious affiliation, account for the Islamic and the non-Islamic differences.

### *Implications*

The implications of the study are revealed according to three research questions raised in the first chapter of this study.

Research Question #1: What changes in educational attainment in terms of the transitions of primary and junior high school occurred over time? Were the changes consistent with the goals of the relative state's policies on spreading nine-year compulsory education from 1973-1994?

Based on Figures 4.1 and 4.2 about school transitional rates by birth cohorts for two analyses, an upward trend can be observed over time from the oldest to the youngest cohorts for the primary school transitional rates, primary school completion rates and junior high school transitional rates. As described in the fourth chapter, there three increases and two decreases happened for 1960-1981 birth cohorts (the birth cohorts covered by both analysis I and analysis

II). The three increases all occurred between the 1960-1967 and 1968-1972 cohort. But the policy implications of the three increases are not the same.

First, the increase of 4.2 percent of primary school transitional rate resulted from the 1973-1978 national primary and secondary school building program. The birth cohort of 1968-1972 who attended primary school between 1974-1978 (see Table 5.1) had been fully exposed to the school building program, which pushed up the primary school transitional rate from 91.1 percent of the birth cohort ahead of them to 95.3 percent for themselves. Since the 1968-1972 birth cohort, the transition rate of primary school attendance increased at a descending speed because it had been close to universal. The impact of the school building program can also be detected through the big jump of 8.7 percent of junior high school transitional rate between the 1948-1959 and 1960-1967 cohort in the figure of analysis II. By the same token, the 1960-1967 birth cohort attended junior high school during 1973-1980 when the school building program was implemented.

**Table 5.1**  
**Contrast Table of the Age Groups, Birth Cohorts and Years for Making School Transition**

<b>Age Groups</b>	<b>Birth Cohorts</b>	<b>Years to Attend Primary School Given the Whole Sample</b>	<b>Years to Complete Primary School Given Primary Attendance</b>	<b>Years to Attend Jr. High School Given Primary Completion</b>	<b>Years to Complete Jr. High School Given Junior High School Attendance</b>
<b>16-19</b>	1978-1981	1984-1987	1990-1993	1991-1994	1993-1996
<b>20-24</b>	1973-1977	1979-1983	1985-1989	1986-1990	1988-1992
<b>25-29</b>	1968-1972	1974-1978	1980-1984	1981-1985	1983-1987
<b>30-37</b>	1960-1967	1966-1973	1972-1979	1973-1980	1975-1982
<b>38-49</b>	1948-1959	1954-1965	1960-1971	1961-1972	1963-1974
<b>50-59</b>	1938-1947	1944-1953	1950-1959	1951-1960	1953-1962

Secondly, the large-scale school building program also greatly decreased the dropout rates for primary education. After the school building program had been executed, the primary school completion rate increased 8 percent (from 80.8 percent for the 1960-1967 birth cohort to 88.8 percent for the 1968-1972 birth cohort). The 1960-1967 birth cohort completed primary school during 1972-1979 when the school building program was enacted. However, the greatest increase of the primary school completion rate did not happen right in that period. Instead, it happened one cohort later, that is, within the 1968-1972 birth cohort who completed primary school during 1980-1984. Since more spaces in junior high schools provided by the school building program stimulated the pupils to complete primary school and continue on to junior high school, the primary school completion rates increased significantly after the school expansion program.

Thirdly, after the increase of 8.7 percent of junior high school transition rate between the 1948-1959 and 1960-1967 cohort mentioned above, there was another growth of 6.4 percent for the following cohort (1968-1972). The continuing increase of junior high school attendance given primary school completion was related to the junior high school expansion program advocated by President Soeharto in the mid-1979-mid1984. This is the period of time when the 1968-1972 cohort was making the transition to junior high school (see Table 5.1). The junior high school expansion program is an extension of the original school building program (see chapter two) in order to accommodate the increasing demand for lower secondary education.

The other two distinct changes are the minor decreases of junior high school transition rate and junior high school completion rate occurred between the 1968-1972 and 1973-1977 cohort. Such decreases were related to the negative influence of the economic shock in 1986-

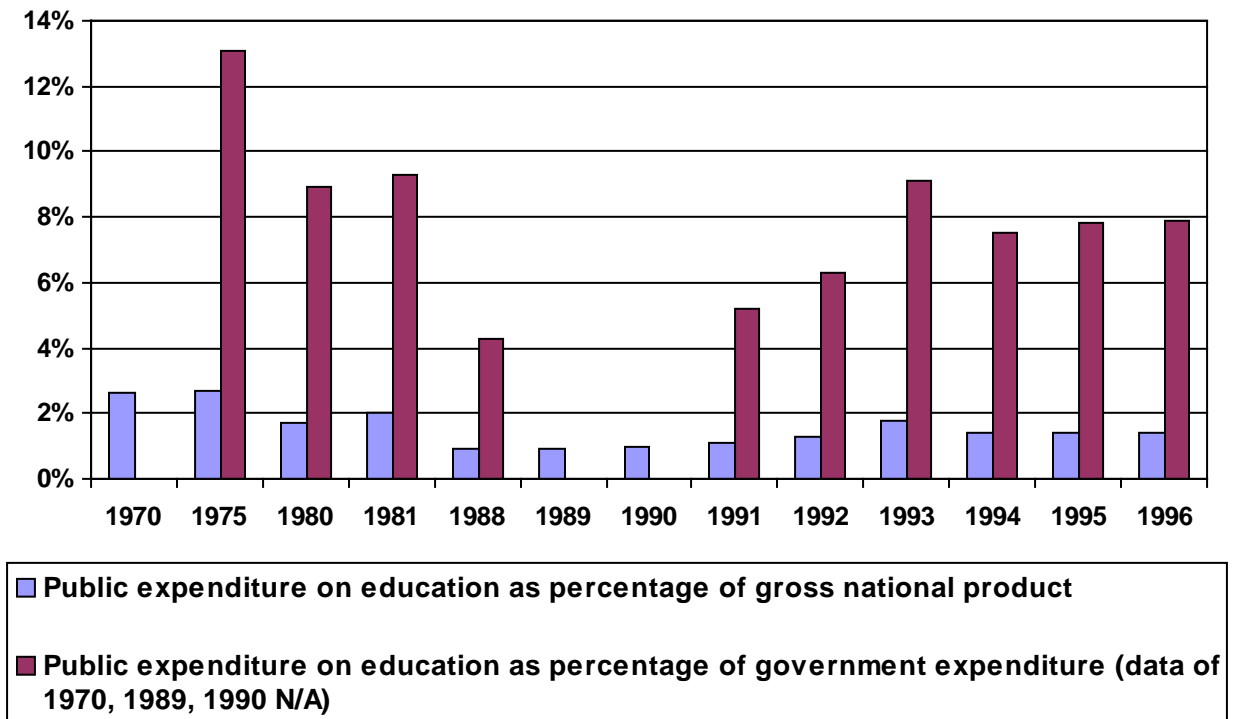
1987 caused by the fall of the oil price. Poor families tended to withdraw their children from school as a result of economic difficulties. The economic shock in 1986-1987 caused the junior secondary enrollment rate to fall from 62 to 52 percent nationally (Daryanto 1999: 63).

As seen in the figure, no obvious effects of the compulsory education legislations or relative administrative decrees can be observed regarding the spread of basic education. Such legislations and decrees include: the 1984 compulsory initiative on 6-year primary education for children 7-12 years old; the 1989 Education Law (Law No. 2/1989) on 9-year compulsory education including 6-year primary education and 3-year lower secondary education; and the 1994 Ministerial Decree (No. 0151/K/1994) by the Ministry of Education on emphasis of the compulsory lower secondary school. One of the reasons there might be the little effect of the compulsory education legislations is as what Post stated, “compulsory schooling is legislated only after it has already become universal” (Post 1994: 127). In Indonesia, the net enrollment ratio for primary education had reached 97 percent in 1984 when the compulsory initiative on primary education was just launched.

Another important reason could be because they were not launched with strong financial support by the government. Although the 1994 Ministerial Decree was issued with some concrete measures such as junior secondary level tuition elimination and fellowship program for students with economic hardship, the financial support directly provided by the state government on this decree was very limited and incomparable with the funding poured into the 1973-1978 school building program. As seen in Figure 5.1, the expenditure of Indonesian government on education as percentage of total government expenditure was highest in 1975 over twenty-six years period of time from 1970-1996. The number was 13.1 percent, over 3 times more than the number in 1988 (4.3 percent) when the economy was at a low point. In 1994, the education

expenditure occupied 7.5 percent of the total government expenditure, which was still much lower than 13.1 percent in 1975.

**Figure 5.1**  
**Public expenditure on education as percentage of gross national product and as percentage of government expenditure**



Therefore, in light of the above analyses, the state education policies would work if they were issued accompanied by “real money.” Money is the root of the problem. Even though without the concrete policies, the 1986-1987 economic shock in Indonesia, which contracted the financial resources available in the society, had a stronger influence on education than the declared government legislations on education.

To summarize the conclusions regarding my first research question, over a forty-three year period of time, Indonesian children’s basic educational attainment increased in terms of

primary school attendance, primary school completion given primary school attendance and junior high school attendance given primary school completion. These changes were consistent with the goals of the state's educational policies that accompanied with the government's direct financial investment or corresponded to the country's economic change. However, other educational legislations or policies without large government investments, which were issued between 1973-1994 on universalizing nine-year compulsory education, did not have such distinct effects on children's educational attainment as those that came about with the real money inputs.

Research Question #2: How did the effects of family background on educational attainment change over time? Did the state's educational policies on spreading the nine-year compulsory education decrease the effects of family background on the child's basic educational attainment?

Parent's occupation did not make any difference on the child's educational attainment at the primary level since the 1960 birth cohort, but the advantage of professional, managerial, or administrative occupations emerged at the junior high school level. Since this study only focused on the nine-year basic education, it is not clear whether the effect of parent's occupation would increase or not at the higher level of education. However, according to the previous research (Post 1996), the effect would probably emerge again at higher levels. Parent's occupation is an indicator of family's social class in the modern society (Blau and Duncan 1967). Therefore, based on this study, children from the high-status families began to enjoy privilege in education as early as the transition to junior high school. Moreover, there is no evidence shown that such a privilege declined in any way over the two decades from 1970s-1990s.

Compared with human capital, social capital and cultural capital, economic capital of a family is the most classic and tangible form of capital considered to influence educational



stratification. This study confirms that it is indeed among the most important factors affecting the school progression of a child. Except for mother's education, number of rooms in the household was the only predictor that had a significant effect on the child's basic educational transitions. Number of rooms is used as an approximation of economic resources of the family. More rooms in the household imply larger living spaces and consequently more abundant economic resources for the family. Another approximation of the family's economic capital is ownership of the house. This study shows that ownership of the house did not matter when controlling for the number of rooms and the other explanatory variables in this model. Ownership of the house was not an important predictor because in the agricultural society, it was very common that peasantry owned their own house in spite of the poor conditions of the house while people working in the urban areas tended to rent a living place as a result of the high costs of purchasing a house and greater mobility in the cities. Thus, ownership of the house could not accurately reflect the real economic situation of the family.

As mentioned above, the mother's education is another important factor that has a significant effect on a child's educational attainment over the forty-three years under study and at each school transitional level. According to the results, even some elementary education of the mother had been enough to make a difference in the child's educational attainment. Therefore, mother's education, as an important indicator of a family's human capital, plays a key role in universalizing the nine-year compulsory education. It suggests that the importance of women's education is not only because education makes women live independently and with dignity, but also because women's education can have ripple effects within the family and across the generations. Educated mothers can recognize the importance of education for their children,

especially for girls. Moreover, since they are educated, they tend to have greater influence in household negotiations, which may allow them to secure more education for their children.

Family religion is another reflection of family social class. The population is 87 percent of Islamic, while the non-Muslims consist of 9 percent of Christian, 2 percent of Hindu, 1 percent of Buddhist and 1 percent of other. As stated in the discussion section, Chinese families make up the majority of Christians. Most of the Chinese had their own businesses and they competed with the indigenous Indonesian elite. Hinduism in Indonesia is primarily associated with Bali, the most developed area in Indonesia. In 1990s, 93 percent of the Balinese were Hindus (Frederick and Worden 1993: 93). Indonesian Buddhism also had strong adherents in the ethnic Chinese community because it was a kind of mixed ideology of Chinese Daoism, Confucianism and Buddhism. The constitution of the non-Islamic indicated the high-ranking status of this population with rich Chinese and Balinese. Therefore, the primary reason that led to the difference between Islamic and non-Islamic differences was not the religious beliefs themselves, but the different social status hiding behind it.

According to the t-test results both for analysis I and analysis II, there is no significant change over time in the trend in the effects of family background on the child's nine-year basic educational attainment. Some significant changes were displayed because of the specific historic events. For example, the economic shock in the late 1980s caused the effect of living in the urban areas on primary school attendance to change from positive to negative. The Village Law of 1979 and the consequent religious riots caused the effect of non-Islamic faith on primary school attendance to change from positive to negative. The end of the Japanese occupation and the independence of the country caused the significant decline of the effect of mother's education, number of siblings and gender on primary school attendance. Nevertheless, none of

the significant change was related to any specific education policies on spreading the basic education. The constancy of the effects of background is most obvious at the transition to junior high school than at other levels of school progression. Over about half a century, there is almost no change for the effect of any of the social background variables on junior high school attendance (see Table 4.6C). This is a confirmatory result of the reproduction theory in that the stratification of education would persist and the education policy efforts would not have significant achievements.

However, at the primary level, the effects of most family background indicators decayed for the most recent cohort. In another words, children from different social origins are less likely to show differences with respect to obtaining primary education since the mid of 1980s. Although the decline of the background effects was not related to any specific policy under study, the result supports modernization theory. This holds that, with the industrialization of society, the educational system would expand and the effects of social origin would decline.

My conclusions regarding research question two are as follows: Over half a century, the effects of family background (except number of rooms and mother's education) on educational attainment at the primary level disappeared by the most recent cohort. But its effects on the transition to junior high school demonstrated neither an increase nor decrease. Because universal education at the primary level made the "pie" large enough to provide everybody with a piece but at the lower secondary level, the "pie" has not been made large enough for everyone. Therefore, an individual's social background still matters. As Smith and Cheung (1986) believed, so long as the pie is growing large enough, how it is sliced becomes less important because everybody will get one piece.

In addition, on the basis of the logistic regression results of this study (Table 4.4 and 4.6), I cannot find any distinct decreasing effects of family background on the child's basic educational attainment that can be attributed to the state policies on universalization of nine-year compulsory education.

Research Question #3: What was the girl's situation in basic educational attainment in an Islamic-dominant society over forty-three years?

Gender disparities on primary school attendance and completion disappeared for the two youngest cohorts. However, the effect of gender on junior high school attendance was quite stable over time. It was significant for each cohort under study and no indication of any trend. When it comes to the completion of junior high school, girls even exceeded boys for the most recent cohorts. That means that, as long as the girls had entered junior high school, they were more likely than the boys to stay in school for the whole period of time and complete it. This is because girls had been highly selected at the entrance of junior high school. In this sample, about 70 percent of boys continued to junior high school after their completion of primary school while only around 60 percent of girls who completed primary school were able to enter junior high school. The selected girls in junior high school should be those with strong family background and having good performance in school. By contrast, more boys in the 10-14 year old range tend to go to work than do girls of the same age (ILAB 2006). In Indonesia, the common industries that accommodated child labor included furniture, garment, footwear, food processing and toy making, the majority of which required intensive labor. As a result, boys found a job more easily than girls in the labor market.

The disappearance of gender inequality in terms of primary school attendance and completion is very meaningful for Indonesia since more females than males were in this country. According to a UN report, “Indonesia is one of the few countries in the Asian and Pacific region in which females have outnumbered males in the total population at various census counts since 1961. In 1990, there were 100.6 females per 100 males in the country” (UN 1998: 5). The expansion in the basic education system has benefited females more than males.

Moreover, based on this study, the relationship between gender and basic educational attainment did not depend on family religion under most circumstances. In all the models for analysis I and analysis II, only three interactions of gender and family religion were significant. Among them, Islamic girls were always the most disadvantaged group whereas non-Islamic girls were always the most advantaged group in terms of school attainment. Therefore, it is not appropriate to simply attribute the disparities in educational attainment to gender difference. In fact, gender inequality in education often masks educational inequality by social class and ethnicity (Pong 1999). As we discussed above, family religion (Islamic and non-Islamic) not only reflected the religious affiliation of the family, but also symbolized social class and ethnicity in Indonesia. Non-Islamic girls were more likely to be high-status Chinese or Balinese girls. Lynette Parker found in her work on schooling in Bali in the 1980s that a higher-class/caste Balinese girl experienced a greater degree of freedom from gender restriction than that felt by her lower-status sisters (Blackburn 2004). She further indicated that, from early this century onwards, Indonesian education had more to offer to upper- and middle-class girls than to the low-class girls. Social class is intertwined with gender to undermine equality in the classroom.

As a conclusion for research question three: From the 1938 to the 1981 birth cohort, the gender disparities in educational attainment at the primary level had disappeared but the advantage of boys at the transition to junior high school was remarkably constant over the forty-three years under study. Once the girls had attended the junior high school, they were even more likely than boys to complete the school for the most recent cohorts because of more competition for girls at the entrance to junior high school and more working opportunities for boys in the labor market. Sometimes Islamic girls were most disadvantaged at certain levels of basic education and for certain cohorts compared with non-Islamic girls, Islamic boys and non-Islamic boys. Nevertheless, it cannot be concluded as a common situation for Islamic girls because in most cases, the effect of gender on the child's basic educational attainment did not differ for Islamic and non-Islamic families.

#### *Contributions of the study*

This study makes several contributions to comparative educational policy analysis. First, Indonesia provides a unique example to study the role of state policies in education expansion empirically. Since its independence, Indonesia has caught the interest of scholars of comparative studies for its large population size, important strategic location, strong economic potential, tumultuous political history and cultural and social diversity. With respect to policy studies, Indonesia is very typical of many states in terms of the government's autocratic powers over policymaking. In western countries, many stakeholders would participate in the process of policymaking so that it is very hard to distinguish the role of each one. By contrast, governance of Indonesia is so tight that it almost leaves no space for direct participation of other parties in making decisions. Moreover, under Soeharto's New Order, Indonesia was in a period of nascent

educational development. Despite strong criticism for its authoritarianism, corruption, human-rights violations and ethnic suppression, Soeharto's government can be credited with developing a complex educational bureaucracy which maintains a unified national system of institutions at all levels of education in spite of the geographic size, linguistic, and cultural diversity of Indonesia (Boediono and Adams 1997). President Soeharto himself received from UNESCO Director-General Federico Mayor the Avicenna Gold Medal for his outstanding commitment in promoting education in Indonesia (Walean, Karamoy and Bebak 1997).

Besides the autocratic role of government in the policy-making process, another unique feature of Indonesia was the strong influence of the exogenous global forces on the formation of its educational policy, especially for the school building program in the 1970s. The outbreak of the First World Oil Crisis in the early of 1970s led to the skyrocket of the oil price, which benefited the oil export countries like Indonesia. The considerable revenue from the oil market, instead of the domestic increase of the demand of education, turned out to be the most direct cause for the large-scale school expansion during 1973 to 1978.

Secondly, this study supports reproduction theory rather than modernization theory. The child who received better basic education in Indonesia was still the one whose family possessed greater volumes of economic capital, human capital and social capital. Parent's occupation, mother's education and family religious affiliation were among the most influential factors of basic educational attainment of the second generation. This study focuses on Soeharto's New Order period, during which Indonesian society experienced the most intensive modernization since the independence of the country. However, even in this period, the study cannot confirm any trend of decreasing educational stratification, as would be expected by modernization theory.

In addition, this study provides another perspective on the mechanism of education expansion. In developing countries, the state policy on education may be more affected by outside factors than by the change of the demand for education inside the society. This is because developing countries are usually more vulnerable to the huge global forces, and are weaker in their ability to control or adjust to it than are developed countries. In the particular case of Indonesia, the change of the world oil market certainly benefited education in this country. However, more dependence of the educational policy on outside factors than the domestic demand of education would possibly misguide the educational development of the country. What would happen if there were no such large amount of money earned from the oil market? Education is not something luxurious that countries should invest in only when there is extra money.

Thirdly, this study has offered insight into whether state policies targeting universalization of basic education can eliminate educational inequality based on family background and social class. State policies, such as the 1973-1978 school building program, had considerable financial investment by the government for the purpose of increasing the supply of schools. These increased the net attainment and reduced the effects of family background on the earlier transition of schools (at primary level) but in the later time (at the transition to junior high school), it reemerged again. That is to say, even if the expansion of an educational system generally decreases inequalities at particular points of school transition, inequality persists at other points of transition. The government's efforts to expand the educational system have not eliminated educational stratification rather it virtually results in no real change in the structured inequality inherent in differences in family backgrounds.



Lastly, this study provides some insight on gender inequality in a Muslim country. It is widely perceived that Muslim women are among the most illiterate and oppressed group of people in the world. They wrap themselves from head to toe, are confined to the four walls of their homes and totally separated from the outside world. Islamic girls are perceived to lag behind in education because of religious restrictions and early marriage. However, this study shows that it is not always the truth, at least for the stage of nine-year compulsory education. Actually, gender disparities in basic education did not differ for Islamic and non-Islamic children in most cases. Even in the few cases when Islamic girls were assured to be left behind, the reasons cannot be simply attributed to the belief of Islam. They are intertwined with social class and ethnicity issues standing behind the religious affiliation of Islam.

In terms of the theories of gender, this study provides new evidence for Greenhalgh's (1985) theory of lingering patriarchy. The patriarchal family tradition is the fundamental cause of everlasting gender disparities. In Indonesia, regardless of whether the Islamic family or the non-Islamic family (mostly Chinese) had the same sexual hierarchies, men were the head of the family and made most decisions. Women were always in a subordinate position and were expected to obey the men in the family. The rapid capitalist development provided Indonesian women with some working opportunities, though they tended to be dead-end and low-paying jobs. Such inferior status in the labor market, in turn, reinforced women's subordinate position in the family. The persisting low status of women resulted from the inability to eliminate the barriers of patriarchal traditions in the family and the discriminatory features of the labor market.

### *Suggestions for future studies*

This study can be expanded and advanced in three ways. First, it can be expanded to include higher levels of education beyond nine-year compulsory education. Previous researchers have suggested that various compulsory education legislations have attenuated the effects of social background on schooling at the primary and secondary level. However, educational inequality based on family socio-economic status and gender has not disappeared. It is pushed up to the higher level of education (Graetz 1988, Pong & Post 1991, Pong 1994). Also, in Indonesia, the primary school enrollment for males and the females has been quite equal but females are far behind in enrollment for higher levels of education (UN 1998). Therefore, it would be interesting to see how the relationship between social background and educational attainment changed over time at the higher level of education such as upper secondary and post-secondary education.

Secondly, the study can be advanced if it involves more interaction terms in the statistical analyses. As Coleman (1988) argues, the financial and human capital of parents are necessary to the development of human capital in their children but by themselves are not sufficient. Financial and human capital must be supplemented by social capital that allow resources to be transmitted to and used by children. Therefore, the statistical analysis should take interaction terms among different forms of capital. Few studies really examine the interaction terms suggested by Coleman. Among them, Teachman, Paasch and Carver (1997) test the interaction between social capital and parental financial and human capital and conclude from their study that financial capital (parental income) is more strongly associated with social capital than is human capital (parental education). Greater social capital can compensate the disadvantage of the children with low-income parents in completion of high school, whereas less social capital

can diminish the advantage of the children from high-income families on the same outcome. Wong (1998) studies the relative importance of human capital, financial capital, social capital and cultural capital in the family for the child's education and the interaction effect between social capital and human capital in Czechoslovakia. Although the results may be difficult to generalize to other places because of the special social context of socialist Czechoslovakia and the special measurement of social capital (membership in the Communist Party), his study is inspiring in exploring something other than the independent influence of each component of the family's background.

Thirdly, it would be interesting to investigate the educational inequality based on family background during the 1998 economic and social crisis. Indonesia experienced dramatic political and economic upheaval in 1998. According to a RAND report, "Output in 1998 is estimated to be about 15% below its 1997 level and inflation is estimated to be 75-80% for 1998. Riots and demonstrations flared in several Indonesian cities" (Frankenberg, Thomas & Beegle 1999). President Suharto resigned in May of 1998 under huge economic and social pressure. Everybody was influenced by the chaos. As I argued before, the change of national economy probably influenced education more than did education legislation or administrative decrees. If a small economic shock like 1986-1987 can cause the enrollment of lower secondary education to fall about 10 percent, then a much more serious economic crisis, such as what took place in 1998, would suggest that we examine its effects on children's educational progression.

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