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The Indonesian Family Life Survey Overview and Descriptive Analysis of the Population, Health and Education Data

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ABSTRACT

This report describes the Indonesian Family Life Survey (IFLS), presents some of the findings suggested by descriptive analyses of the survey's population, health, and education data, highlights important policy issues the findings shed light upon, and suggests areas where more rigorous, multivariate analyses are needed Conducted in 1993 and 1994 by RAND, in conjunction with Lembaga Demografi at the University of Indonesia, the IFLS consists of a national household survey and matched community survey The household survey contains detailed individual and household information on a sample of approximately 7,200 households in 13 provinces comprising about 83 percent of the Indonesian population The community survey contains data on the availability, prices, and quality of health, family planning, and school facilities in the household respondents' immediate communities Several features of the IFLS make it unique among surveys in Indonesia as well as many other developing countries First, it is a multipurpose survey, collecting a broad array of detailed demographic, health, education, and economic information on individuals, households, and communities Second, the IFLS contains information on individuals of all ages, including current as well as retrospective data Third, the matched household and community surveys enable researchers to integrate individual, household, and community data, so they can better understand how surrounding conditions influence family behavior and can more readily assess the effects of existing and potential public policies and programs

Executive Summary

The Indonesian Family Life Survey (IFLS) is a national household survey and matched community survey conducted in 1993 and 1994 by RAND, in conjunction with Lembaga Demografi at the University of Indonesia The IFLS collected comprehensive data in six subject areas fertility, family planning, and contraception, maternal and child health, education, household composition, migration, and intergenerational relations, labor force participation, and the health, economic, and social functioning of the older population

The Household Survey contains a sample of approximately 7,200 households in 13 provinces comprising about 83 percent of the Indonesian population The survey collected detailed data at both the individual and household level The Community and Facility survey collected data on the availability, prices, and quality of health, family planning, and school facilities in each respondent's community

Several features of the IFLS make it unique among surveys in Indonesia as well as many other developing countries First, it is a multipurpose survey, collecting a broad array of demographic, health, education, and economic information on individuals, households, and communities This allows researchers to conduct multivariate analyses on a wide range of interrelated issues, so that they can identify the relative contributions of various factors motivating individual and family behavior Second, both the household and community surveys collected current as well as retrospective information This enables researchers to study the effects of changes over time in both government programs and household decisions Third, the IFLS contains detailed data on individuals of all ages This will enable researchers to help the Indonesian government develop policies across the full economic, social, and political spectrum, from family planning to meeting the needs of an increasingly older population Finally, the IFLS enables researchers to integrate individual, household, and community data In this way they can better understand how surrounding conditions influence family behavior and can help the government assess the effects of existing and potential public policies and programs

This report presents some of the more salient findings derived from descriptive analyses of the population, health, and education data in the IFLS It also highlights many of the important policy issues the findings shed light upon and suggests areas where more rigorous analyses are needed The findings presented below are discussed in greater detail (and in the same order) in the concluding chapter of this report

Population

1 The Indonesian family planning program continues to achieve contraceptive prevalence rates of well over 50 percent among currently-married, not-pregnant women

- About 57 percent of currently-married women are using some form of contraception, all but 2 5 percent are using modern methods
- Contraceptive use is substantially higher in urban areas than in rural areas, 63 percent versus 53 percent

2 Women with higher levels of per capita household expenditures (or income) have higher contraceptive prevalence rates

- Prevalence rates increase from 49 percent for the poorest quintile of women to 62 percent for the wealthiest
- There is a dramatic negative association between per capita household expenditures and the percentage of women who have never used family planning Over 35 percent of the women in the poorest quintile have never used contraception, compared to 20 percent in the highest quintile

3 Women who use short-term contraceptive methods have different socioeconomic characteristics than women who use long-term methods

- Women who use short-term methods tend to be younger, have fewer children, live in rural areas, and have lower education and incomes than women who use long-term methods

4 There is a very high level of *awareness* of family planning methods,

- Nearly 97 percent of all currently-married women of reproductive age have heard of at least one modern contraceptive method
- But, lack of *knowledge* may be an important factor in why some currently-married women have never used family planning Nearly one-quarter of the women who have never used contraception indicated lack of knowledge as a primary reason

5 There is considerable variation in the contraceptive methods women use, they often switch among reversible alternative modern methods

6 Women who use contraceptives do not receive sufficient information about possible side effects

- Only 63 percent of current users of modern methods indicate they have received information from their provider on possible side effects
- Women with lower education and lower incomes appear less likely to receive this information
- Nearly one-quarter of the women who are former contraceptive users indicate that concern about their health was a major reason for discontinuing use

7 Quality of care plays an important role in family planning outcomes (i e , client satisfaction, contraceptive use, contraceptive continuation, and, ultimately, fertility)

8 Pricing policies for family planning services and contraceptives must be carefully considered because they can dramatically affect prevalence rates, cost recovery, and equity

Health

1 High-risk mothers are still not receiving adequate prenatal care

- Women 35 to 49 years old are the least likely of all mothers to receive prenatal care—28 8 percent reported they received no prenatal care, compared to approximately 20 percent of the mothers age 34 and younger

2 Rural areas still lack adequate prenatal care

- Nearly 26 percent of the women in rural areas did not receive prenatal care, compared to 10 percent in urban areas

3 Mother's education is an important determinant of prenatal care utilization

- About 45 percent of mothers with no education received no prenatal care Among women with some elementary school education, 25 percent received no prenatal care Among women with some junior secondary education, less than 10 percent went without care

4 The majority of births occur at home

- Nearly three-quarters of births in Indonesia occur at home
- About 85 percent of rural women deliver at home, compared to 45 percent of urban women
- Over 85 percent of women with less than an elementary school education deliver at home, compared to 41 percent of women who have graduated from junior secondary school

5 Only a small percentage of the Indonesian population has health insurance coverage

- Less than 14 percent of the population reported coverage during the IFLS study period
- Urban residents have much higher rates of coverage than do rural residents, with 25 percent of the urban population reporting some kind of health insurance, compared to 7 percent of the rural population
- There is very little gender difference in insurance coverage rates

- Health insurance rates increase with level of education less than 6 percent of the population that has not graduated from elementary school has coverage, while 11 percent of elementary school graduates and 40 percent of junior secondary school graduates have coverage
- Prime-age adults are more likely to be insured than children or the elderly
- People with higher per capita household expenditures (or income) are more likely to be insured 4 percent of those in the poorest quintile have coverage, compared to 33 percent of those in the wealthiest quintile

6 Expanded health insurance coverage can increase access, utilization, and quality of health care services

- Expansion of the private health insurance industry will dramatically increase the resources available to pay for health care and will enable the government to redirect its subsidies away from the middle class toward the more needy

Education

1 Elementary school enrollment rates stand at 90 percent, though enrollment rates for poor children still lag behind

- 84 percent of elementary school-aged children from the poorest 20 percent of households are enrolled in school, compared to 97 percent from the wealthiest 40 percent of households This difference is largely confined to rural areas
- Elementary school fees and expenses do not appear to be a substantial barrier, even for most of the poor
- Elementary school graduation rates of rural children lag behind those of urban children at age 12, 58 percent of urban children have graduated, compared to 18 percent of rural children
- Poor children in rural, but not urban, areas have less access (longer travel time) to elementary school than nonpoor children

2 Junior and senior secondary school enrollment rates are well below elementary school enrollment rates, especially for poor and low-income children

- Junior secondary school fees and expenses may represent a substantial barrier, especially for the poor Families from the poorest 40 percent of the population report total annual school expenditures of about Rp 13,800 per month The average monthly per capita expenditure of families in the lowest quintile is only Rp 16,900
- Many children face lengthy travel times to junior secondary schools The average travel time reported by students attending junior secondary schools is

24 minutes, which is 75 percent longer than the average travel time reported by students attending elementary school

3 There are significant urban-rural and poor-affluent differences in junior secondary and senior secondary enrollment patterns Given the picture presented by the data, it is clear that the government's program for compulsory junior secondary education, and efforts to increase senior secondary enrollment, will have to focus special efforts on increasing enrollment among poor and near-poor urban and rural children, as well as middle-income rural children Multivariate models of the determinants of enrollment, including travel times, cost, school quality, and families' preferences for education can help the government design more efficient and effective strategies for increasing enrollment rates, especially among the poor and low-income populations

4 Certain of the data, including enrollment rates and travel times to school, reflect possible gender differences that should be further investigated through multivariate analyses

5 Enrollment patterns in public and private schools may reflect differences in access and quality

- The data suggest that the choice of private elementary schools by higher-income families represents a choice for higher quality, as opposed to improved access In contrast, enrollment in private junior secondary schools may be motivated more by limited access to public schools than by a choice for a higher-quality school

Conclusion

Two primary objectives of this report are to disseminate information about the IFLS to policymakers and the academic community in Indonesia, and to demonstrate that the IFLS contains much valuable and practical information relevant to many important policy issues in Indonesia However, the potential value of the IFLS can only be realized with the active participation of Indonesian policymakers and analysts who can identify and help design and implement in-depth analyses of policy questions important to the government The findings and research questions outlined in this report are presented as a first step in this process

Acknowledgments

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Chapter 1

Indonesian Family Life Survey

The Indonesian Family Life Survey (IFLS) is a multipurpose, national household and matched community survey that has recently been conducted by RAND, in conjunction with Lembaga Demografi, Faculty of Economics, University of Indonesia The IFLS consists of a set of integrated data bases constructed to support policy research and development in a number of interrelated areas of interest to the Government of Indonesia and international donors and scholars The potential areas of policy application of the IFLS are quite numerous and include education, population, health, nutrition, migration, labor force activities, and inter-household support In addition, the IFLS can support analyses of urban-rural and gender differences The IFLS was funded by the United States Agency for International Development, the National Institute for Child Health and Development, the Ford Foundation and WHO

The purpose of this report is to provide

- summary documentation of the design, implementation and contents of the IFLS, and
- descriptive analyses using the IFLS in three areas of policy interest to USAID and the Government of Indonesia population, health and education

This report is the first in a series of documents that will apply and disseminate findings from the IFLS, it is illustrative of the potential of the IFLS to improve the information and analytical base for policy decision making

This chapter provides an overview of the IFLS design and fieldwork, including sample design, response rates and questionnaire content Readers not interested in the details of the survey may want to skim this chapter, or proceed directly to the subsequent chapters Chapters 2 to 4 provide a series of nearly 100 tables and charts highlighting some key findings from the IFLS in the areas of population, health and education

A IFLS Household Survey

The IFLS household survey covers a sample of approximately 7200 households across 13 provinces in Java, Sumatra, Bali, West Nusa Tenggara, Kalimantan and Sulawesi, which together comprise approximately 83 percent of the Indonesian population and much of its heterogeneity In addition to the household survey, the IFLS also includes a separate Community and Facility Survey (CFS) with information that can be linked to all households The household survey collected information on the characteristics of all household members A subsample of household members aged 50 and above, ever-married women and other adults in the household were interviewed for retrospective data Data were collected for household members through direct

interviews (for adults) and proxy interviews (for children, infants and temporarily absent household members) Adult respondents and children in each household were weighed and measured by an anthropometrist

The household survey also collected detailed data at the household level on household composition, consumption, income and assets Detailed contemporaneous and retrospective data were collected for selected adult respondents on education, labor force participation, marriage, migration, health status and provider utilization, individual assets, fertility and contraception, and infant feeding practices The questionnaire also collected detailed data on the characteristics of parents, siblings and children residing outside the household, as well as transfers of income, goods and services to and from these individuals

The CFS measured infrastructure quality and availability of services, including retrospective data, for schools and health facilities in individual communities and for a sample of communities as a whole The CFS collected data from a variety of respondents including the village leader and his staff and the leader of the village women's group, Ministry of Health clinics and sub-clinics, private practices of doctors, midwives, nurses, and paramedics, community-based health posts and contraceptive distribution centers, and public, private, and religious elementary, junior high, and senior high schools Unlike many other surveys, the sample frame for the survey of facilities was drawn from the list of facilities used by household survey respondents in the area

Several features of the IFLS make it unique among surveys in Indonesia as well as many other developing countries First, the IFLS is a multi-purpose survey, collecting a broad array of demographic, health, and economic information on individuals, households and communities By simultaneously collecting data on a wide range of topics, the survey has broadened the scope of analyses that can be conducted, allowing analyses of interrelated issues not possible in single-purpose surveys

Second, current as well as retrospective information is collected for most topics in the survey As a result of the longer recall periods for many life events, the data allow researchers to study the effects of changes over time in both government programs and household decisions during a period of rapid demographic and economic change

Third, the IFLS is especially well-suited for studies of the health and well-being of the older population Data on several dimensions of elderly well-being are included, such as health, economic status, and family support networks, including transfers Building on our research experience in the United States and previous survey research in Indonesia, we adapted indices of health and functional status that have proved to have valid psychometric properties in other settings Data on the topics covered by the survey are collected for younger, middle-aged and older respondents in the same survey and often in the same households This collection of intergenerational data allows for analyses of the relations between generations

Finally, the survey links household-level data to community-level data on public services and economic infrastructure This linking of individual, family and community data will enable researchers to better understand how surrounding conditions influence family behavior Furthermore, these community-level variables are often the factors most susceptible to influence

by policy By joining community and individual data, researchers can understand better how surrounding conditions influence family behavior and can assess the value of potential policy instruments that operate at the community level

1 Sample Design and Response Rates

Household Selection

The IFLS sampling scheme stratified on provinces, then randomly sampled within provinces Provinces were selected to maximize representation of the population, capture the cultural and socioeconomic diversity of Indonesia, and be cost effective given the size and terrain of the country The far eastern provinces of Nusa Tenggara Timur, Timor Timur, Maluku and Irian Jaya were excluded due to the high costs of preparing for and conducting fieldwork in such more remote locations Similarly, due to their relatively high survey costs, we omitted several provinces on the major islands of Sumatra (Aceh, Riau, Jambi, and Bengkulu), Kalimantan (Barat, Tengah, Timur), and Sulawesi (Utara, Tengah, Tenggara) The resulting sample consists of 13 of Indonesia's 27 provinces four on Sumatra (Sumatra Utara, Sumatra Barat, Sumatra Selatan, and Lampung), all five of the Javanese provinces (DKI Jakarta, Java Barat, Java Tengah, DI Yogyakarta, and Java Timur), and four provinces covering the remaining major island groups (Bali, Nusa Tenggara Barat, Kalimantan Selatan, and Sulawesi Selatan) The resulting sample represents 83 percent of the Indonesian population Table 1 1 shows the distribution of Indonesia's population across the 27 provinces, highlighting the 13 provinces included in the IFLS sample

The IFLS randomly selected enumeration areas (EAs) within each of the 13 provinces The EAs were chosen from a nationally representative sample frame used in the 1993 SUSENAS, a socioeconomic survey of about 60,000 households The SUSENAS frame, designed by the Indonesian Central Bureau of Statistics (CBS), is based on the 1990 census The IFLS was based on the SUSENAS sample because the CBS had recently listed and mapped each of the SUSENAS EAs (saving time and money for the IFLS) and because supplementary EA-level information from the resulting 1993 SUSENAS sample could be matched to the IFLS-1 sample areas [1] Table 1 1 summarizes the distribution of the approximately 9,000 SUSENAS EAs included in the 13 provinces covered by the IFLS The SUSENAS EAs each contain some 200 to 300 households, although only a smaller area of about 60 to 70 households was listed by the CBS for purposes of the annual survey [2]

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[1] A similar approach was taken by the Demographic and Health Surveys (DHS) fielded in Indonesia in 1987 and 1991

[2] See Appendix A for a comparison of the attributes of the IFLS and the National Socioeconomic Survey (SUSENAS)

Table 1 1

1993 IFLS Household Sampling Parameters

Province	Census Code	1990 Population N (1000)	%	% Urban	IFLS Provinces 1993 SUSENAS EAs	Sampling Rate	IFLS Sample EAs Total	Urban	Rural
Aceh	11	3 476	1 9	16					
Sumatra Utara	12	10 391	5 7	35	732	2 01	26	16	10
Sumatra Barat	13	4 041	2 2	20	502	3 01	14	6	8
Riau	14	3 372	1 9	31					
Jambi	15	2 059	1 1	20					
Sumatra Selatan	16	6 403	3 5	29	428	2 01	15	8	7
Bengkulu	17	1 213	0 7	21					
Lampung	18	6 108	3 4	12	244	2 01	11	3	8
DKI Jakarta	31	8 352	4 6	100	380	2 01	40	40	0
Jawa Barat	32	35 973	19 8	33	1282	1 01	52	31	21
Jawa Tengah	33	28 733	15 8	26	1578	1 01	37	19	18
DI Yogyakarta	34	2 923	1 6	48	216	4 01	22	16	6
Jawa Timur	35	32 713	18	26	1814	1 01	45	23	22
Bali	51	2 798	1 5	27	320	4 01	14	7	7
Nusa Tenggara Barat	52	3 416	1 9	17	244	4 01	16	6	10
Nusa Tenggara Timur	53	3 306	1 8	19					
Timur Timur	54	762	0 4	18					
Kalimantan Barat	61	3 292	1 8	48					
Kalimantan Tengah	62	1 431	0 8	26					
Kalimantan Selatan	63	2 636	1 5	23	380	4 01	13	6	7
Kalimantan Timur	64	1 930	1 1	16					
Sulawesi Utara	71	2 504	1 4	23					
Sulawesi Tengah	72	1 735	1	17					
Sulawesi Selatan	73	7 045	3 9	24	912	2 01	16	8	8
Sulawesi Tenggara	74	1 382	0 8	17					
Maluku	81	1 885	1	19					
Irian Jaya	82	1 671	0 9	24					
TOTAL		181 548	100		9 032		321	189	132

SOURCE 1990 population data and 1993 SUSENAS sample frame provided by the Indonesian Central Bureau of Statistics

Using the SUSENAS frame, the IFLS randomly selected 321 enumeration areas in the 13 provinces, over-sampling urban EAs and EAs in smaller provinces to facilitate urban-rural and Java-non-Java comparisons A straight proportional sample would likely be dominated by residents of Java, who comprise more than 50 percent of the population A total of 7,730 households were sampled to obtain a final sample size goal of 7,000 completed households Table 1 1 shows the sampling rates that applied to each province and the resulting distribution of EAs in total, and separately by urban and rural status

Within a selected EA, households were randomly selected by field teams based upon the 1993 SUSENAS listings obtained from regional offices of the CBS A household was defined as a group of people whose members reside in the same dwelling and share food from the same cooking pot (the standard CBS definition) Twenty households were selected from each urban

EA, while thirty households were selected from each rural EA This strategy minimized expensive travel between rural EAs and reduced intra-cluster correlation across urban households, which tend to be more similar to one another than do rural households

Table 1 2 shows the interview status of IFLS households by province Of the 7,730 households sampled, a complete interview was obtained for 7,042 households or 91 1 percent of households A partial interview (i e , only a subset of selected household members were interviewed) was obtained for another 183 households (2 4 percent of households), while 505 sampled households (6 5 percent) were not interviewed [3] The completion rate ranged from a low of 87 percent to a high of 97 percent across the thirteen provinces The final sample of 7,225 partial or fully interviewed households consists of 3,429 households in urban areas (90 7 percent completion rate), and 3,796 households in rural areas (96 1 percent completion rate)

Table 1 2

Sample Sizes for Household Survey by Interview Status

Province	Number of EAs	Number of Households				Percent		
		Complete	Partial	None	Total	Complete	Partial	None
North Sumatra	26	543	20	57	620	87 6	3 2	9 2
West Sumatra	14	335	16	9	360	93 1	4 4	2 5
South Sumatra	15	340	9	21	370	91 9	2 4	5 7
Lampung	11	269	5	26	300	89 7	1 7	8 7
DKI Jakarta	40	724	7	69	800	90 5	0 9	8 6
West Java	52	1085	26	139	1250	86 8	2 1	11 1
Central Java	37	858	20	42	920	93 3	2 2	4 6
DI Yogyakarta	22	439	40	21	5 00	87 8	8	4 2
East Java	45	1032	12	76	1120	92 1	1 1	6 8
Bali	14	340	0	10	350	97 1	0	2 9
West Nusa Tenggara	16	401	6	13	420	95 5	1 4	3 1
South Kalimantan	13	313	10	7	330	94 8	3	2 1
South Sulawesi	16	363	12	15	390	93 1	3 1	3 8
TOTAL	321	7042	183	505	7730	91 1	2 4	6 5

SOURCE IFLS Survey 1993

Selection of Respondents within Households

For each household selected, a representative member provided household-level demographic and economic information In addition, several household members were randomly

[3] In about two-thirds of these 505 cases no interview was obtained either because the building was vacated (14 percent) the household refused (25 percent) or no one was at home (29 percent) Other households were not interviewed due to a demolished building illness or an inability to locate the building

selected and asked to provide detailed individual information[4] The household- and individual-level information collected in the interviews is discussed in the next section

The within-household respondent selection rules reflected our interest in sampling both women of reproductive age and older individuals in the same survey Traditional demographic surveys often collect detailed data only for the first class of respondents (i e , ever-married women age 15 to 49) and possibly their younger children Other surveys with a focus on aging may conduct detailed interviews only with older respondents Our within-household sampling rules also included never-married women and men, a group that is often excluded from detailed study in demographic surveys

The IFLS-1 conducted detailed interviews with the following household members

- The household head and spouse,
- Two randomly selected children of the head and spouse aged 0 to 14 (interviewed by proxy),
- An individual age 50 and above and spouse, randomly selected from remaining members,
- For a randomly selected 25 percent of the households, an individual age 15 to 49 and spouse, randomly selected from remaining members

Given these sampling rules, all adults age 15 and above had a positive probability of being selected for interview The group of eligible children age 0 to 14 included all biological or adopted children or stepchildren of the household head and spouse, as well as any children fostered to any adult in the household We labeled respondents (i e , those in the third category over age 50 and not the household head or spouse) as the Senior Respondent and spouse, while those randomly selected under the final category are labeled as the Nonsenior Respondent and spouse[5]

Based on the above sampling rules, the number of adults eligible for interview could have been as high as six per household, but the maximum number actually interviewed was restricted to four for budgetary reasons Table 1 3 shows the selection rules that were applied when five or more adults were selected for interview in the field If six adults were selected, the Nonsenior

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[4] We initially considered the possibility of conducting detailed interviews with all household members age 15 and above and implemented this approach in the first pretest However, this strategy proved too costly in terms of the additional time required to schedule interviews with all adults in the household, and the additional interview time required Information from the household roster in the 1991 DHS was used to simulate the effect on the sample sizes of various respondents based on different within household sampling rules including the final strategy that was adopted This allowed us to determine expected sample sizes with a high degree of accuracy

[5] In order to facilitate the process of sampling respondents within households in the field and as a way to reduce the potential for interviewer error labels were pre-printed for each control book with random numbers to use in implementing the selection rules Details are provided in Appendix B

Respondent and spouse were not interviewed When five adults were selected to be interviewed, the respondent without a spouse was dropped (retaining the two married couples), unless that individual was the household head In the latter case, the senior couple was not interviewed In this way, the household head and spouse were always interviewed, and interviews were always obtained for both individuals in a married couple In the end, the maximum number of four adults selected for detailed interview was a binding constraint in only about 2 percent of all households interviewed

The distribution of household members by characteristics and interview status for all IFLS households is summarized in Table 1 4 The sample fractions, as would be expected given the above sampling rules, resulted in the highest within-household sampling rates for those age 50 and above, and those most likely to be the household head or spouse of the household head For example, over 95 percent of eligible household members age 50 and above were selected for detailed interview Approximately 90 percent of ever-married men and women age 30 to 49 were also selected for interviewed A smaller fraction, approximately 70 percent, of ever-married persons below age 30 were interviewed since they were less likely to be the head or spouse of the head Among those age 15 and above, never-married persons were the least likely to be interviewed, from 12 percent for those age 15 to 19, to 34 percent for those age 40 to 49 Finally, more than 70 percent of children age 0 to 14 of the head and spouse (as well as those children without a parent in the household) were selected for detailed interview Although the remaining 1,159 children of other household members were technically not eligible for interview, it appears that detailed information was collected for a small fraction of these remaining children (typically the grandchildren of the household head and spouse)

Table 1 3

Within-Household Respondent Selection Rules to Limit Adult Respondents to a Maximum of Four

Respondent						
Household Head [1]	Spouse of Household Head [2]	Senior Respondent [3]	Spouse of Senior Respondent [4]	Nonsenior Respondent [5]	Spouse of Nonsenior Respondent [6]	Drop
[X]	[X]	[X]	[X]	X	X	[5] [6]
[X]	[X]	[X]	[X]	X		[5]
[X]	[X]	X		[X]	[X]	[3]
[X]		X	X	[X]	[X]	[3] [4]

Note [X] = Respondent selected for interview and retained
X = Respondent selected for interview but dropped due to four adult limit

Table 1 5 demonstrates the advantages of our approach of sampling both the older and younger generations in the same survey About three in four of the 7,224 households sampled in the IFLS had an ever-married woman age 15 to 49, while an individual age 50 and above was a member of nearly one in two households in the sample Rather than conducting detailed interviews in only 50 percent or 75 percent of households, by conducting in-depth interviews with

individuals in all households, the IFLS allows analyses of representative samples of both younger and older generations, as well as households where these generations coreside For example, of the 5,525 households with an ever-married woman under age 50, 1,911 households (35 percent) also had a household member age 50 and above Another 1,562 households had an older adult but no woman of reproductive age However, because these households were in the same enumeration areas, it was possible to increase the sample of older individuals interviewed for a relatively small increase in field costs

Table 1 4

Within-Household Sample Sizes by Interview Status

	Total			Males			Females		
	N	N Int	Percent	N	N Int	Percent	N	N Int	Percent
Children of head / spouse									
0 to 5	3530	2678	75 9	1835	1421	77 4	1695	1257	74 2
6 to 10	3616	2643	73 1	1805	1312	72 7	1811	1331	73 5
11 to 14	3138	2269	72 3	1570	1137	72 4	1568	1132	72 2
Other children									
0 to 5	695	85	12 2	359	48	13 4	336	37	11
6 to 10	278	39	14	127	22	17 3	151	17	11 3
11 to 14	186	33	17 7	99	20	20 2	87	13	14 9
Ever married									
15 to 19	319	147	46 1	40	11	27 5	279	136	48 7
20 to 29	3128	2246	71 8	1126	711	63 1	2002	1535	76 7
30 to 39	4272	3834	89 7	2005	1776	88 6	2267	2058	90 8
40 to 49	2858	2658	93	1455	1371	94 2	1403	1287	91 7
Never married									
15 to 19	3309	379	11 5	1733	203	11 7	1576	176	11 2
20 to 29	2288	280	12 2	1403	183	13	885	97	11
30 to 39	247	48	19 4	123	20	16 3	124	28	22 6
40 to 49	53	18	34	21	6	28 6	32	12	37 5
Any marital status									
50 to 59	2489	2436	97 9	1120	1101	98 3	1369	1335	97 5
60 to 69	1606	1564	97 4	770	755	98 1	836	809	96 8
70 to 79	716	684	95 5	335	319	95 2	381	365	95 8
80 and above	283	269	95 1	105	102	97 1	178	167	93 8

Source IFLS Survey 1993

Note also that a remaining 237 households (3 percent of the total) would typically be excluded from a survey focusing only on women of reproductive age or a survey sampling only the older population By including this small fraction of remaining households, we maintained the representativeness of the sample for other population groups (e g , never-married women and men) for a small marginal cost, greatly enhancing the research potential of the data

2 Survey Instruments

Table 1 6 summarizes the structure of the IFLS questionnaire, which was divided into several books, and subdivided within books into modules [6] Three sections of the questionnaire collected information at the household level a control book (Book K) completed by the enumerator, and Books I (Household Roster) and II (Household Economy), administered to a knowledgeable household member The three remaining questionnaire books collected individual-level data from adult respondents (Book III), ever-married women respondents (Book IV), and, by proxy, young children (Book V) Finally, individual measures of height and weight were recorded in a single anthropometric record for each household (Book CA), and young adults were provided with a self-administered reproductive-health questionnaire (Book RR) The discussion below summarizes the content of each of these books

Table 1 5

Distribution of Households

Household status	Senior 50+	No senior 50+	Total
Ever-married woman age 15-49	1911	3514	5425
No ever-married woman age 15-49	1562	237	1799
Total	3473	3751	7224

Source IFLS Survey, 1993

Questionnaire Books and Modules

Book K Control Book The interviewer completed a control form for each sampled household in the IFLS The first module in the book provided sample identification while the last module recorded visit information, including reasons for nonresponse Data from the latter section were used during field work to track progress and to calculate response rates and interviewer productivity Another section of the book was used to implement the within-household respondent selection rules, determining which books would be completed by the household head and spouse, and whether an interview would also be conducted with a Senior respondent (and spouse), a Nonsenior respondent (and spouse), and up to two children of the head and spouse This book was also used to record information that might be used to relocate households at a later date This included the location the household might move to if it expected to move in the future, and the name of a relative or friend who might know the location if the household no longer resided at the current address

[6] In addition to the modules summarized in Table 1 6 each questionnaire book included an interviewer evaluation section at the end This form was used to record the conditions of the interview (who else was present whether assistance in answering questions was provided by others) the respondent's level of attention and any other relevant information about the interview environment

Table 1 6

Household Questionnaire Books and Modules

	Book	Respondent		Module
K	Control Book	Interviewer and wife of head of household or household head	SC	Sampling and enumeration record
			IK	Recontact information
			PS	Within household sample selection
			FP	Questionnaire tracking form
I	Household Roster and Characteristics	Wife of head of household or household head	AR	Household member roster
			KR	Household characteristics
			KS	Consumption
			PP	Outpatient care provider knowledge
II	Household Economy	Head of household	UT	Farm business
			NT	Nonfarm business
			PH	Labor and nonlabor income
			HR	Household assets
			GE	Household economic shocks
			AK	Health insurance
III	Adult Information	Each selected respondent age 15 and above	DL	Education history
			TK	Employment history
			AW	Time allocation
			KW	Marital history
			BR	Pregnancy summary (women 50+)
			MG	Migration history
			SR	Circular migration history
			KM	Tobacco smoking
			KK	Health condition
			MA	Acute morbidity
			PS	Self treatment
			RJ	Outpatient utilization
			RN	Inpatient utilization
			BA	Noncoresident family roster & transfers
			TF	Other transfers
			HI	Individual assets & nonlabor income
IV	EMW Information	Each selected ever married women age 15 to 49	KW	Marital history
			BR	Pregnancy summary
			CH	Pregnancy and infant feeding history
			CX	Contraceptive knowledge and use
			KL	Contraceptive calendar
V	Child Information	Each selected child 0 to 14 (by proxy usually mother of child)	DLA	Child education history
			MAA	Child acute morbidity
			PSA	Child self-treatment
			RJA	Child outpatient utilization
			RNA	Child inpatient utilization
CA	Anthropometric Record	One per HH record for selected adults and children < 14	CA	Anthropometric Measurements
RR	Youth Sexual Behavior	All unmarried adults 15 to 25 (self administered)	RR	Reproductive health knowledge and behavior

Book I Household Roster and Characteristics This questionnaire was answered by the spouse of the household head or person most knowledgeable about household affairs The household roster section of the book recorded the basic demographic characteristics of all household members (including gender, age, marital status, religion, relationship to head, education, and main activity) A second module collected information on the characteristics of the housing structure, including size, construction materials, source of drinking water, type of toilet facility, method for disposing of sewage and garbage, and interview observations on other general sanitary conditions A third section recorded an inventory of household consumption, which may be used as a proxy for long-run income [7] The consumption module listed the value of foods purchased and self-produced in the last week, purchases of personal care and household items during the last month, and purchases of durable goods in the last year Quantities and purchase prices for a number of frequently purchased staples were also collected The final module of the book collected information about knowledge of outpatient health care providers (for linkage with facility data)

Book II Household Economy This section of the questionnaire was answered by the household head or person most knowledgeable about household affairs The household economy questions in the first two modules focused on the revenue, expenses, and value of assets of household-owned agricultural and non-agricultural businesses The next section recorded the labor income for all individuals age 10 and above who were not selected for detailed interview, as well as household-level aggregate amounts of nonlabor income Combined with individual-level data on labor and nonlabor income collected in Book III, the information collected in this book can be used to provide a complete picture of current household income resulting from market-wage income, self-employment income, family businesses, informal-sector activities, and unearned income The fourth module recorded the current value of household nonbusiness assets (e g , land, livestock, jewelry), as well as asset sales and purchases in the last year Information on asset ownership and ownership shares was also recorded where relevant Another module collected information about economic shocks experienced by the household in the last five years, and the household's response to the shock The last section elicited information about formal and informal health insurance arrangements that covered members of the household

Book III Adult Information The most detailed section of the questionnaire contained current and retrospective questions that were administered to all selected adult respondents age 15 and above The IFLS collected retrospective histories on many aspects of family life (nuptuality, fertility, migration, labor force participation, wages), as well as current information on a broad range of topics, including health status and health care utilization, assets, nonlabor income, and transfers Individual modules are described below

Education history The education history recorded the highest level of education attended and highest grade completed Detailed information was collected for each level of schooling

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[7] The module used for IFLS was derived from the Indonesian Resource Mobilization Study questionnaire and received extensive pretesting It is a short consumption module (taking about 20 minutes to complete) Experimental comparisons with the CBS three-hour budget expenditure survey indicate that the short module accurately measures aggregate food and non-food consumption

attended (elementary, junior high, senior high and post-secondary), including the name, location and type of school and whether any grade was repeated Additional information was collected for the most recent school or current school, including construction materials, class size, travel time, and economic support received Details about school expenses were collected for those currently enrolled or enrolled in the last year

Employment history and time allocation Respondents were asked for extensive current and retrospective information about their labor market experiences For purposes of the employment module, 'work' was defined broadly to include both formal and informal sector, full-time and part-time, and seasonal and year-round activities Detailed information, including occupation, industry, type of employer, hours, and wages, for up to two jobs was recorded for those employed at the time of the survey A nearly identical set of employment information was collected on an annual basis for the last five years, for the first job, and for the job held 10 years ago (1983) and 20 years ago (1973) A brief module followed the employment history which recorded the respondent's time allocation for the past week Activities included working for wages and other income-generating activities such as working on a family farm or nonfarm business, as well as time spent in school or studying and in performing household chores

Marriage history and pregnancy summary A complete marriage history was obtained through a module that asked respondents about the start and end dates of their unions (including characteristics of former or non-coresident spouses) and dowries and marriage arrangements for the first marriage At the end of this section, a brief pregnancy summary elicited information from ever-married women about all pregnancy events using the standard Brass questions [8]

Migration history Two modules collected information on the geographic mobility of individuals, as well as the causes and consequences of migratory movements, including short-stay and circulatory migration The migration module recorded information about the location at birth, age 12, and each subsequent location where a move crossed a *desa* (village) boundary and lasted for six months or longer Information was also recorded for short-term and circulatory moves that took place in the last two years, defined as moves that crossed a *desa* boundary and lasted for at least a month For each short- and long-term move, the instrument collected data on dates and locations of moves, the motivation for moving, and distance moved Additional detail was collected on migration at the time of the respondent's first marriage, as well as the most recent move, including economic support received before and after moving

Smoking, health status, physical performance, and health care utilization A series of modules collected information on smoking, physical functioning, acute morbidity, self-treatment, and inpatient and outpatient utilization Current health status for respondents was assessed as follows (1) functionally, through self-reported questions about the ability to perform various activities of daily living (ADLs), (2) medically, through questions about the presence of disease symptoms and impairments, and (3) subjectively, through self-assessments Information on health

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[8] Since this module was also included in Book IV which was asked of ever-married women under age 50 only women age 50 and above were administered this section in Book III

care utilization included from whom and where medical care was received (e g , self-treatment, traditional or modern providers), how much it cost, who paid for it, how far the respondent traveled, and whether drugs were purchased Information was collected for self-treatment and outpatient visits that occurred in the last four weeks, while the time frame for inpatient visits covered the previous 12 months

Non-coresident family roster and transfers This module recorded information on the location and sociodemographic characteristics of all non-coresident immediate kin (parents, siblings, and children), so that a measure of the complete transfer-choice set was created Sociodemographic characteristics of non-coresident family members (age, sex, relationship, educational attainment, living arrangements, health status, main activity, occupation , and ages at death if dead) were collected for the respondent's parents, and up to four siblings and four children [9] Information on transfers (focusing separately on those involving money, goods, and time) to and from these non-coresident household members in the last twelve months was recorded Details about inheritances from parents was also solicited Finally, a follow-on section recorded transfers to and from other family members, friends, employers, or associations in a similar fashion

Individual assets and nonlabor income In addition to the information on labor incomes collected in the labor force participation section, a final module recorded information about nonlabor income and assets at the individual level This information included details about asset ownership in various categories (land, buildings, other durables, financial instruments, jewelry, etc), asset values, and sales and purchases in the last year

Book IV Ever-Married Woman Information This section of the questionnaire was administered to all ever-married women 15 to 49 years old (Book IV respondents also completed Book III) This book collected retrospective life histories on marriage, children ever born, pregnancy outcomes and infant feeding, and contraceptive use Since the marriage and pregnancy summary sections replicate those included in Book III, women who answered Book IV skipped these modules in Book III

Pregnancy and infant feeding history This module enumerated all pregnancy events and recorded the pregnancy outcome and date, and for live birth outcomes, the child's gender and name, whether the child was alive and date of death if the child died, and whether the child was ever breastfed and the length of breastfeeding For pregnancy events in the last five years,

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[9] Information was recorded for both parents of the respondent regardless of whether they were living or dead In addition a complete roster of all non-coresident siblings and children currently alive or who died in the last twelve months was obtained with basic demographic characteristics recorded for each individual For those respondents with more than four siblings on this roster, additional information was recorded only for the oldest and youngest and for the two siblings closest to the respondent in birth order When a respondent had more than four non-coresident children listed on the separate child roster additional detail was collected for the oldest child and youngest child, and for the two children in the middle of the birth order Details were collected for the complete opportunity set when respondents had four or fewer non-coresident siblings and four or fewer non-coresident children This limit of four non-coresident siblings and four non-coresident children was imposed to constrain the total length of the interview

additional information was recorded, including whether and where prenatal care was received, and (except for miscarriages) birthweight and type of delivery facility and health care provider In addition, considerable information about breastfeeding and the introduction of other foods was collected for children born in the last five years, with even more detail recorded for children born in the last two years

Contraceptive knowledge and use, and contraceptive calendar Information on contraceptive knowledge was assessed in this module by asking respondents whether they had ever heard of a series of modern and traditional contraceptive methods, whether they had ever used the method, and, if appropriate, whether they knew where to obtain the method, the distance and travel costs to the facility, and the price of the method

A monthly five-year retrospective contraceptive calendar (modeled, in part, on the Indonesian DHS) was administered to women whose first marriage occurred more than 10 years ago (before January 1984) For women whose first marriage occurred since January 1984, the calendar covered the full period since the marriage The calendar recorded the start and end date of all marriages, pregnancy events, and periods of post-partum amenorrhea, abstinence, and contraceptive use During periods of contraceptive use, months when side effects occurred and type of side effect were recorded Respondents were also asked to list visits to medical or birth control facilities during the period of use for purposes of resupply, side-effects consultation, or to obtain a new method, and the cost of the visit Questions on side effects and visits to health care providers related to contraceptive use were only asked for the last two years of the calendar

Book V Child Information This section of the questionnaire was administered by proxy for up to two children under age 15 of the head and spouse (or assignable to the head and spouse) The respondent was the child's mother or female guardian, or the person in the household who was taking care of the child The five modules in this book focused on the child's educational history, morbidities, self-treatment, and inpatient and outpatient health care utilization, each module paralleled the one included in the adult questionnaire (discussed above) with some modification to be more appropriate for young children For example, as with adults, the questionnaire asked about acute morbidities experienced in the last four weeks, self-treatment and outpatient utilization in the past four weeks, and inpatient utilization in the past year The list of acute health conditions was changed to focus on conditions more relevant for this younger age group In addition, more detail was included in the education retrospective history, which recorded the name and location of the school, type of school, grade level attended, travel time and costs to reach the school, hours spent in class, characteristics of the school and classroom (e g , type of flooring, school size, classroom size), whether the child advanced to the next grade, and school expenses and sources of support

Book CA Anthropometric Record This separate form was used by specially trained members of the field team to record measures of height and weight for individual household members Anthropometric measures were taken of all adults and children selected for detailed interview In addition, the anthropometrists were instructed to measure other children under age

6 who were present in the household at the time of the interview The anthropometrists collected height and weight following accepted international standards (United Nations, 1986) [10]

Book RR Sexual Knowledge and Behavior This small book was a self-administered questionnaire given to unmarried individuals age 15 to 25 The instrument recorded the respondent's knowledge of contraception and AIDS, sources of information, and attitudes

Interview Time and Respondent Burden

Although the questionnaire instruments for IFLS appear extremely long, the average time spent in sample households was about 4 hours The burden on any individual respondent was, of course, less than this amount as interviewers typically met with multiple respondents in each household Moreover, many sections of the questionnaire were left blank by respondents because they had no events to report (e g , no recent inpatient or outpatient utilization), or because their life history of events was comparatively short (e g , marriages, pregnancies, migrations)

Table 1 7 presents the total number of respondents for each questionnaire book and some key details regarding the time and logistics involved in administering the questionnaires The current and retrospective individual-level information collected in Book III was clearly the most time consuming, followed closely by the household roster, Book I The fact that many respondents skipped the detailed questions in many of the modules is reflected by the fact that the median time is always several minutes shorter than the mean time In 85 to 95 percent of the cases, interviewers were able to completely administer the questionnaire book during one visit to the household A repeat visit was more likely to be necessary for female respondents (Book III, Book IV, and typically Book I), while the need to weigh and measure the designated household members required the anthropometrist to make a repeat visit in about 15 percent of the cases

The IFLS within-household sampling plan was designed to ensure that many households would provide individual-level information for multiple respondents Table 1 8 reflects the extent to which this occurred for Books III, IV and V Nearly 6000 households had at least two adults complete Book III However, multiple detailed interviews with an ever-married woman less than age 50 (Book IV) were extremely rare (only 106 cases), because the within-household selection rules favored selecting women from different generations In the case of children (Book V) detailed education and health information was collected for nearly 3000 sibling pairs under age 15

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[10] Measures of weight were taken using Seca Model 770 scales while recumbent length or standing height measures were taken using Shorr measuring boards Both of these measuring instruments have been used in survey work in other countries and are suitable for field work given their portability, durability and accuracy The Seca Model 770 scales (floor model) have a digital read-out and are accurate to the nearest 0 1 kg Children who were too young or not able to stand on their own were held by a parent and weighed (after the scale had been adjusted to zero with just the parent alone on the scale) Standing height was measured for adults and children over age two and recumbent length was measured for younger children

Table 1 7

Household Questionnaire Instruments Respondents and Administration Times

	Questionnaire book	Number of Respondents	Time to complete (minutes) Mean	Median	Number of visits to complete (percent distribution) 1	2	3
K	Control book	7730	11	6	94 2	5 1	0 7
I	Household roster	7224	47	42	84 8	14 7	0 5
II	Household economy	7216	25	20	92	7 9	0 1
III	Adult information	14418	53	45	86	13 5	0 6
IV	EMW information	4981	36	30	89 3	10 5	0 2
V	Child information	7751	13	10	93 5	6 5	0
CA	Anthropometric record	7167	10	7	84 3	14	1 7

Source IFLS Survey 1993

Table 1 8

Household Questionnaire Instruments Multiple Respondents for Individual Questionnaires

Number of respondents per household	Individual questionnaire book III Adult Information	IV EMW Information	V Child Information
None	55	2351	2463
One	1223	4766	1771
Two	4807	106	2990
Three	975	1	0
Four	164	0	0
Total respondents	14418	4981	7751

Source Indonesia Family Life Survey 1993

B IFLS Community and Facility Survey

In addition to the IFLS household survey, a separate community and facility survey (CFS) was fielded to measure physical and social infrastructure of the respondents' communities, including the availability, prices and quality of services Ten separate questionnaires were developed and fielded to collect information from a variety of respondents

1) the village leader and his staff

2) the leader of the village women's group (PKK)

3) public health centers and subcenters (Puskesmas and Puskesmas Pembantu)

4) private practices (doctors and clinics)

5) nurses, paramedics and midwives

6) traditional health practitioners

7) community health and family planning posts

8) public and private elementary schools

9) public and private junior high schools

10) public and private senior high schools

1 CFS Survey and Sample Design

Two steps were taken to match the CFS survey to the household survey First, the CFS survey was administered in the same 321 communities as the IFLS household survey Second, the sample frame of facilities was based on responses from the IFLS household respondents IFLS household respondents were asked a series of questions about where they *would* go, and where they *do* go for health, family planning and education services The answers of all households in each of the 321 sample areas were aggregated to construct a facility sample frame for each sample area From this list of surveys, a sample of facilities was selected to be interviewed The sample was chosen by a random probability sample, where the probability of selection was proportional to the relative frequency by which each facility was mentioned by the IFLS households

Two advantages of this sampling approach are that it includes private providers and that it does not rely on official service-area boundaries to identify public facilities With regard to the first advantage, private providers are an important source of health, family planning and education services Including a *representative* sample of such providers in the CFS facilitates practical and significant policy analysis in a number of important areas, including public-private provider choice, financing of social services, and the role that the private sector plays in achieving various social goals of the government of Indonesia With regard to the second advantage, a sampling strategy that relies on the official service boundaries assigned to different public facilities will inevitably mis-match many individuals with the providers they utilize Service boundaries are defined out of administrative convenience or necessity and are frequently correlated with political boundaries However, individuals frequently choose to use providers/facilities based on the characteristics of the provider (e g , price and quality) and proximity (e g , travel times and costs) Thus, individuals frequently cross over official service boundaries to visit a preferred provider

Table 1 9 lists the number of facilities we intended to interview However, it was not always possible to include in the sample frame, nor to sample, the number of facilities we targeted in each enumeration area In numerous sample areas, household respondents mentioned fewer than the target number of health, family planning or education facilities In other words, the household respondents used fewer *different* facilities than the number we had targeted for interview in each sample area To compensate for this, we supplemented the sample frame with facilities mentioned by the village leader and leader of the village women's group (PKK) Yet, there were still many communities where the total number of facilities in the sample frame was

less than the sample target This was most likely to occur in rural areas, where the number of alternative providers and schools is quite small We discuss the actual number of facilities interviewed in the next section

Table 1 9

Target Number of CFS Interviews

Type of Facility	Number per EA	Total Facilities
Public Health Centers/Subcenters	4	1284
Private Doctors or Clinics	2	642
Nurses, Paramedics or Midwives	3	963
Village Health Post	3	963
Traditional Healers	2	642
Elementary Schools	3	963
Junior Secondary Schools	3	963
Senior Secondary Schools	2	642
Total Facilities	22	7062

From each of the health and family planning providers listed above, the CFS gathered data on several dimensions of services

- availability and accessibility
- range of services and methods provided
- prices
- structural measures of quality
- process measures of quality

From each elementary and secondary school visited, the data gathered by the CFS included

- principal training, experience and activities

- availability and condition of school facilities (i e , classrooms, library, playing field) and education supplies
- teacher training, experience and activities (for selected teachers)
- availability and source of books used by students
- number of students and classroom size
- student performance (grade repetition, average scores on "standardized" tests)

Data on these dimensions was principally obtained by provider interviews, using structured questionnaires, along with direct interviewer observation (e g , availability of necessary equipment and supplies) and review of administrative records

2 CFS Response Rates

The CFS survey was fielded between September 1993 and February 1994 One CFS interviewing team was assigned to each household interviewing team, visiting each enumeration area one to two weeks after the household team completed its interviews Using the lists of facilities collected in the household interviews, the CFS teams constructed a sample frame, drew the sample, and interviewed the sampled facilities The CFS teams also interviewed the village leader and the leader of the local PKK

The CFS completed interviews with all of the village leaders and the leaders of the PKK in the 321 sample areas Table 1 10 and Table 1 11 show that the CFS also achieved high response rates for health, family planning and school facilities For each type of facility, these tables report the number of facilities interviewed (Int), the target number of facilities, and the percentage of the target number actually interviewed (CR) For example, in North Sumatra, the number of health centers actually interviewed was 95, the target number was 104, and thus the percentage of the target number actually interviewed is 91 3 percent

In all 13 provinces, the CFS completed 77 6 percent of the *target* interviews with public health centers and subcenters, 85 percent with physicians or clinics, 92 8 percent with nurses, paramedics and midwives, 96 7 percent with traditional practitioners, and 93 percent with village health posts For midwives, nurses, paramedics, traditional practitioners, and village health posts, the completion rates are uniformly 80 percent or higher across provinces However, there is substantial variation in the completion rate for public health centers and private doctors and clinics For public health centers the completion rate varies from 62 percent in Jakarta to 91 percent in North Sumatra Analysis of the field management reports verified that the principal reason for the difference in the number of target and interviewed facilities was that households in a sample area often reported using fewer facilities than the target number In such cases, all facilities mentioned were interviewed Thus, the CFS field staff completed interviews with a very high percentage of the target number of health and family planning facilities, but with even higher percentages of those facilities actually mentioned by the IFLS household respondents

Table 1 10

Completion Rate of CFS Health and Family Planning Provider Survey

PROVINCE	#EAs	Health Center			Physicians/Clinics			Nurses/Paramedics			Traditional Practitioners			Posyandu		
		Int	Tgt	C R %	Int	Tgt	C R %	Int	Tgt	C R %	Int	Tgt	C R %	Int	Tgt	C R %
North Sumatra	26	95	104	91 3%	44	52	84 6%	76	78	97 4%	54	52	103 8%	70	78	89 7%
West Sumatra	14	47	56	83 9%	27	28	96 4%	39	42	92 9%	28	28	100 0%	35	42	83 3%
South Sumatra	15	52	60	86 7%	26	30	86 7%	48	45	106 7%	32	30	106 7%	45	45	100 0%
Lampung	11	34	44	77 3%	19	22	86 4%	33	33	100 0%	22	22	100 0%	27	33	81 8%
West Java	52	142	208	68 3%	81	104	77 9%	147	156	94 2%	102	104	98 1%	147	156	94 2%
DKI Jakarta	40	99	160	61 9%	70	80	87 5%	104	120	86 7%	69	80	86 3%	118	120	98 3%
Central Java	37	107	148	72 3%	62	74	83 8%	99	111	89 2%	72	74	97 3%	107	111	96 4%
D I Yogyakarta	22	70	88	79 5%	41	44	93 2%	58	66	87 9%	41	44	93 2%	56	66	84 8%
East Java	45	157	180	87 2%	79	90	87 8%	126	135	93 3%	87	90	96 7%	125	135	92 6%
Bali	14	33	56	58 9%	28	28	100 0%	39	42	92 9%	26	28	92 9%	34	42	81 0%
West Nusa Tenggara	16	62	64	96 9%	31	32	96 9%	48	48	100 0%	32	32	100 0%	48	48	100 0%
South Kalimantan	13	46	52	88 5%	22	26	84 6%	39	39	100 0%	26	26	100 0%	39	39	100 0%
South Sulawesi	16	42	64	65 6%	16	32	50 0%	38	48	79 2%	30	32	93 8%	45	48	93 8%
Provinces	321	986	1284	76 8%	546	642	85 0%	894	963	92 8%	621	642	96 7%	896	963	93 0%

Table 1 11

Completion Rate of CFS School Survey

	PROVINCE	#EA	SD			SLTP			SLTA		
			Int	Tgt	C R %	Int	Tgt	C R %	Int	Tgt	C R %
1	North Sumatra	26	79	78	101 3%	79	78	101 3%	51	52	98 1%
2	West Sumatra	14	42	42	100 0%	42	44	95 5%	26	28	92 9%
3	South Sumatra	15	45	45	100 0%	45	45	100 0%	28	30	93 3%
4	Lampung	11	32	33	97 0%	33	32	103 1%	21	22	95 5%
5	West Java	52	154	156	98 7%	142	156	91 0%	91	104	87 5%
6	DKI Jakarta	40	117	120	97 5%	109	120	90 8%	79	80	98 8%
7	Central Java	37	107	111	96 4%	99	111	89 2%	66	74	89 2%
8	D I Yogyakarta	22	61	66	92 4%	61	66	92 4%	40	44	90 9%
9	East Java	45	129	135	95 6%	124	135	91 9%	82	90	91 1%
10	Bali	14	42	42	100 0%	35	42	83 3%	24	28	85 7%
11	West Nusa Tenggara	16	48	48	100 0%	48	45	106 7%	31	32	96 9%
12	South Kalimantan	13	39	39	100 0%	32	39	82 1%	19	26	73 1%
13	South Sulawesi	16	47	48	97 9%	40	48	83 3%	28	32	87 5%
All Provinces		321	942	963	97 8%	889	961	92 5%	586	642	91 3%

For elementary schools, middle schools and high schools, the CFS completion rates are uniformly high in all provinces The overall completion rate for elementary schools is nearly 98 percent, while the overall completion rate for junior and senior secondary schools is 92 5 percent and 91 3 percent

C Conclusions

The 1993 IFLS represents a unique data base that will support in-depth research, not possible with existing Indonesian survey data, on interrelated topics having to do with fertility and contraception, infant feeding, child and adult health, education, the health and well-being of the elderly, intergenerational relations, marriage and household composition, and migration and employment The integration of individual, family, community and facility data will significantly improve the information base for assessing policies and programs that operate at the community level

The ultimate objective of this survey effort is to place in the public domain a new and unique micro-level data set for policy analyses We expect to release a public use version of the IFLS by the end of 1995 The data will be available through the Inter-University Consortium for Political and Social Research (ICPSR), housed at the University of Michigan Users who do not belong to ICPSR will be able to purchase a copy through RAND or Lembaga Demografi for a nominal charge to cover the cost of reproduction

Chapter 2

Population

Indonesia's family planning program was one of the key policy areas targeted for assessment by the IFLS data collection effort In particular, the IFLS was designed to study the behavioral motivations underlying families' fertility decisions and the influences on fertility of such proximate determinants as contraceptive use, marital status, the duration and intensity of breastfeeding, and post-partum abstinence These determinants are themselves influenced by many cultural, social and economic factors, including the characteristics of Indonesia's health and family planning program, and the health of women and children The IFLS was also designed to examine how the price and quality of family planning services affects contraceptive demand, provider choice and the targeting of the government's family planning subsidies

Although the IFLS was principally designed to support the multivariate, behavioral modeling necessary to study fertility decisions, the descriptive analyses presented in this initial report provide numerous insights The information presented below confirms many of the successes of Indonesia's family planning program (e g , widespread contraceptive use, even among the poor, and good knowledge of and accessibility to contraceptives) In addition, these results highlight several interesting and important policy issues that need further study, and they also demonstrate that the IFLS data can contribute much information to the family planning policy community in Indonesia

This chapter is divided into seven major sections We first describe the characteristics of the ever-married women in the IFLS sample We then discuss the contraceptive use of currently-married women in the 15 to 49 year-old age group This is followed by a description of these women's knowledge of modern, traditional, and folkloric contraceptive methods We then examine patterns of contraceptive use among ever-users and never-users, and in a following section explore the reasons why some of these women do not use contraceptives We then investigate issues surrounding the dissemination of information on the side effects of various contraceptives, and we conclude with a brief note on future analyses that might be undertaken with the IFLS data and that would contribute significantly to public policies relating to family planning and other aspects of family welfare

A Characteristics of the IFLS Sample of Ever-Married Women

As described in Chapter 1, all sampled ever-married women between the ages of 15 and 49 years were administered the General Adult Questionnaire (Book 3) and the Ever-Married Women Questionnaire (Book 4) Information specifically collected from ever-married women include marital histories, pregnancy histories, current and retrospective infant-feeding practices, and current and retrospective contraceptive use, as well as information on family planning

providers, contraceptive knowledge and reasons for not using contraceptives With the exception of residence, age and per capita expenditures, the information presented in this chapter is drawn from the Ever-Married Women Questionnaire However, the information presented here represents only a fraction of the data available on the family planning practices of these women

Table 2 1 describes the composition of the IFLS sample of ever-married women, by residence, age and per capita expenditure level The table presents both the weighted number of observations for each category, as well as the percentage distribution Observations are provided separately for all currently-married women, and for currently-married and not pregnant women

Table 2 1

Ever-Married Women 15-49 Years Old Weighted-Number and Distribution of IFLS Sample

	All Currently Married		Currently Married and Not-Pregnant	
	Number	Percentage	Number	Percentage
Residence				
Rural	3 480 6	66 3	3 246 0	66 5
Uban	1 769 3	33 7	1 635 9	33 5
Total	5 249 9	100 0	4 882 0	100 0
Age				
15 19	280 9	5 4	224 8	4 6
20 24	714 7	13 6	638 8	13 1
25 29	1 104 1	21 0	1,007 9	20 6
30 34	1 125 5	21 4	1,051 5	21 5
35 39	876 7	16 7	844 6	17 3
40 49	1,148 0	21 9	1,114 3	22 8
Total	5 249 9	100 0	4 882 0	100 0
Real Per Capita Expenditure Quintile				
Poorest Quintile	998 2	19 0	934 5	19 1
2nd Quintile	1 036 2	19 7	974 6	20 0
3rd Quintile	1 138 2	21 7	1 055 9	21 6
4th Quintile	1 128 6	21 5	1,051 1	21 5
Wealthiest Quintile	948 6	18 1	866 0	17 7

Source IFLS Survey

The IFLS weighted sample consists of 5,250 currently married women, of which 4,882 are not pregnant women Roughly 19 percent of the study population is below 25 years old, 59 percent is between 25 to 39 years old, and 22 percent is between 40 and 49 years old Rural residence account for about 66 percent of the study population Finally, the study population is

about evenly distributed across the expenditure quintiles, peaking at the third and fourth quintiles [11]

Since most of the data presented in this chapter are for currently-married *and* not-pregnant women, for ease of presentation, we will generally refer to these women as just "currently-married" In those few cases where we wish to discuss information for all currently married women, regardless of pregnancy status, we will refer to these women as "all currently-married "

B Current Contraceptive Use

In this section, we examine the contraceptive use rates among currently-married women in the reproductive age-group 15 to 49 years We begin by presenting data on the overall contraceptive prevalence rates by geographic area, and then describe the use rates according to three key demographic and economic characteristics of women urban/rural residence, age, and economic status Throughout this section, we present contraceptive use rates for modern, traditional and folkloric methods, as defined below

- Modern methods contraceptive pill, intrauterine device (IUD), contraceptive injections, condom, contraceptive implants, diaphragm, and female and male sterilization
- Traditional methods rhythm/calendar system and coitus interruptus
- Folkloric methods traditional herbs, massage and other

1 Contraceptive Use by Geographic Region

Table 2 2 shows the percentage of currently-married women according to the contraceptive method they are currently using Overall, 56 6 percent of currently-married women are using some form of contraception, and all but 2 5 percent of these women are using modern methods Among the 54 1 percent of women using modern methods, the two most commonly used methods are pill, 18 1 percent, and injections, 17 3 percent The third most frequently used method is IUD, with a use rate of 9 6 percent The only other methods considerably used are female sterilization, 4 5 percent, and implants, 3 3 percent

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[11] The expenditure quintiles are defined by the following Rupiah cutoffs

Poorest Quintile	> 0 and < 22,858
Second Quintile	≥ 22 858 and < 34 477
Third Quintile	≥ 34 477 and < 49,965
Fourth Quintile	≥ 49,965 and < 79 120
Wealthiest Quintile	≥ 79 120

Table 2 2

Percentage of Currently-Married Women by Contraceptive Method Currently Used

		Modern Methods									Traditional Methods			Folkloric Methods					
PROVINCE	Any Method	Any Modern Method	Pill	IUD	Injec-tion	Con dom	Im plant	Dia phragm	Female Steri lization	Male Steri lization	Any Traditional Method	Rhy thm	With drawal	Any Folkloric Method	Herb	Mas sage	Other		Weighted # Women
Java Bali (1)	59 1	56 9	17 7	10 7	19 6	0 7	3 2	0 0	4 6	0 5	1 6	1 0	0 5	0 6	0 4	0 1	0 1	0	3 690 2
Outer Java Bali I (2)	48 7	45 5	19 1	6 5	10 4	1 1	3 9	0 1	4 2	0 0	2 3	1 6	0 7	0 9	0 3	0 3	0 3	0	1 191 7
Overall	56 6	54 1	18 1	9 6	17 3	0 8	3 3	0 0	4 5	0 4	1 7	1 2	0 6	0 7	0 4	0 2	0 2	0	4 882 0

Source IFLS Survey

(1) Java Bali composed of

DKI Jakarta	DI Yogyakarta
West Java	East Java
Central Java	Bali

(2) Outer Java Bali I composed of

North Sumatra	West Nusa Tenggara
West Sumatra	South Kalimantan
South Sumatra	South Sulawesi
Lampung	

In total, only 1 7 percent of currently-married women report using traditional methods, with the majority of these women using the rhythm method Less than 1 percent of women report using folkloric methods, with the majority of these women using herbs

The total contraceptive use rate is substantially higher in Java-Bali than in Outer Java-Bali 1 In Java-Bali, 56 9 percent of currently-married women are using modern methods, while in Outer Java-Bali 1 just 45 5 percent of currently-married women are using modern methods Interestingly, all of this difference is accounted for by just two methods injections and IUD Java-Bali residence are almost twice as likely to use injections, 19 6 percent versus 10 4 percent, and substantially more likely to use IUD, 10 7 percent versus 6 5 percent

Another way to look at the different patterns of use between the two regions is to examine the proportion of current users who are using specific methods For instance, in Java-Bali 0 31 of current users of modern methods are using pills, whereas in Outer Java-Bali 1, the proportion of pill users is 0 42 However, when pill and injection methods are combined, less than 0 70 of users in both regions are using one of these two methods

It is important to note that the overall and method-specific contraceptive use rates recorded by the IFLS are nearly identical to those recorded by the 1994 DHS The small differences that do exists are easily within the sampling errors of both surveys The IFLS and DHS used similar instruments to collect information on contraceptive use, and both surveys used sample frames and listings provided by the CBS The high order of consistency between the surveys is re-assuring and serves as external validation for each of the surveys [12]

2 Contraceptive Use in Urban and Rural Areas

The total contraceptive use rate is 63 3 percent for urban women and 53 2 percent for rural women, with urban women more likely to use both modern and traditional contraceptive methods However, there is substantial variation in the use pattern of the individual methods Table 2 3 indicates that rural women are more likely to use contraceptive pills and implants than are urban women, while urban women are more likely to use IUD, sterilization and the rhythm methods In sum, the urban-rural difference in contraceptive use is driven by the higher use of long-term methods (IUD, implants and sterilization) in urban areas, 22 2 percent versus 15 1 percent, which likely reflects both demand and supply factors

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[12] Despite these similarities, there are several important differences in the design and content of the DHS and IFLS including 1) the DHS was designed to provide statistically reliable province-specific estimates of contraceptive prevalence for all 27 provinces, 2) the IFLS data collection covered a wider range of social policy interests and 3) the IFLS interviewed both ever-married women and their husbands In summary the DHS design put emphasis on collecting a large enough sample of ever-married women to study contraceptive use patterns at the provincial level while the IFLS placed emphasis on collecting more information about each sampled household to support in-depth study of families decisions in several policy areas

3 Contraceptive Use by Women's Age

As Table 2 4 indicates, there is a non-linear, positive relationship between women's age and current contraceptive use For modern methods, the contraceptive use rate for the youngest age group of currently married women, those 15-19 years old, is 30 3 percent The use rate initially increases with age, reaching a peak at approximately 63 4 percent for women 25 to 34 years-old, and then gradually declines to a low of 40 6 percent for women aged 40-49 years The lower rates among the youngest age groups is likely due to a higher proportion of these women wanting to become pregnant In contrast the lower rates among the older age group is likely due to lower perceived risks of pregnancy (i e , lower coital frequency), targeting emphasis of the family planning program and the growth in the family planning program as these women were nearing the end of their reproductive ages

Not surprisingly, there is substantial variation in the age pattern across individual contraceptive methods For example, use of pills and implants follows the same age pattern as that for all methods—first increasing with age and then decreasing However, use rates for the IUD method are very low among currently-married women aged 15 to 19 years, but then increase ten-fold, reaching a peak among women aged 35 to 39 years old The use rates of contraceptive injections are highest among currently married women aged 20-24 years, 25 7 percent, and then decline steadily with age, to a rate of only 5 3 percent for women aged 40 to 49 years Finally, no woman less than 25 years old reports using sterilization, but for women over 25 years old, the rate increases with age

4 Contraceptive Use and Level of Per Capita Expenditure

Both the level and mix of contraceptive use change with the level of per capita expenditure Table 2 5 shows that the level of overall contraceptive use increases with per capita expenditure quintiles, from 48 8 percent for the poorest quintile to 62 1 percent for the wealthiest quintile The largest increase occurs between the poorest quintile and the second quintile, increasing from 48 8 percent to 55 8 percent The majority of this increase results from higher rates of IUD, injection and female sterilization methods Table 2 5 also indicates that the use patterns of the second and third quintiles are quite similar

The increase in contraceptive use rates for the wealthiest quintile is noteworthy The contraceptive use rate increases from 58 3 percent for the fourth quintile to 62 1 percent for the wealthiest quintile, although four-fifths of this gain is from increases in the use of traditional and folkloric methods However, this result may not reflect the true relationship between higher incomes and contraceptive use The two-way analysis of expenditures and use rates presented in Table 2 5 does not control for other possible confounding variables For example, the wealthiest quintile contains a disproportionate number of older currently-married women Therefore, the higher average age of women in the wealthiest quintile is partly responsible for the jump in the use of traditional and folkloric methods

Table 2 3

Percentage of Currently-Married Women Currently Using Contraceptives By Method and Residence

		Modern Methods									Traditional Methods			Folkloric Methods				
	Any Method	Any Modern Method	Pill	IUD	Injection	Condom	Implant	Diaphragm	Female Sterilization	Male Sterilization	Any Traditional Method	Rhythm	Withdrawal	Any Folkloric Method	Herb	Massage	Other	Weighted # Women
Urban	63 3	58 9	16 3	13 4	18 0	01 8	01 6	00 0	07 2	00 5	03 3	02 6	00 8	01 1	00 7	00 3	00 1	1 635 9
Rural	53 2	51 7	18 9	07 7	17 0	00 3	04 2	00 0	03 2	00 4	00 9	00 5	00 5	00 5	00 2	00 1	00 2	3 246 0
Total	56 6	54 1	18 1	09 6	17 3	00 8	03 3	00 0	04 5	00 4	01 7	01 2	00 6	00 7	00 4	00 2	00 2	4 882 0

Source IFLS Survey

Table 2 4

Percentage of Currently-Married Women Currently Using Contraceptives By Method and Age

		Modern Methods									Traditional Methods			Folkloric Methods				
AGE	Any Method	Any Modern Method	Pill	IUD	Injection	Condom	Implant	Diaphragm	Female Sterilization	Male Sterilization	Any Traditional Method	Rhythm	Withdrawal	Any Folkloric Method	Herb	Massage	Other	Weighted # Women
15 19	31 4	30 3	7 5	1 2	20 0	0 0	1 5	0 0	0 0	0 0	0 9	0 1	0 8	0 2	0 0	0 2	0 0	224 8
20 24	55 4	54 2	18 8	5 7	25 7	0 5	3 3	0 0	0 0	0 2	0 8	0 2	0 5	0 4	0 3	0 1	0 0	638 8
25 29	64 8	63 2	24 9	8 2	24 2	0 6	3 9	0 1	1 3	0 0	1 3	0 6	0 7	0 3	0 2	0 1	0 1	1 007 9
30 34	66 3	63 4	19 3	11 5	21 5	1 4	4 6	0 0	4 4	0 7	2 0	1 3	0 7	0 9	0 2	0 1	0 6	1 051 5
35 39	58 7	55 8	18 1	12 4	12 9	1 0	3 2	0 0	7 6	0 5	2 1	1 5	0 5	0 7	0 4	0 3	0 1	844 6
40 49	44 1	40 6	12 3	11 0	5 3	0 5	2 1	0 0	8 7	0 6	2 4	2 1	0 3	1 1	0 9	0 1	0 0	1 114 3
All Ages	56 6	54 1	18 1	9 6	17 3	0 8	3 3	0 0	4 5	0 4	1 7	1 2	0 6	0 7	0 4	0 2	0 2	4 882 0

Source IFLS Survey

Table 2 5

Percentage of Currently-Married Women Currently Using Contraceptives By Method and Per Capita Expenditure Quintile

		Modern Methods									Traditional Methods			Folkloric Methods				
	Any Method	Any Modern Method	Pill	IUD	Injection	Condom	Implant	Diaphragm	Female Sterilization	Male Sterilization	Any Traditional Method	Rhythm	Withdrawal	Any Folkloric Method	Herb	Massage	Other	Weighted # Women
Poorest Quintile	48 8	47 9	18 3	6 7	16 3	0 2	3 8	0 0	2 0	0 5	0 7	0 1	0 5	0 2	0 0	0 2	0 0	934 5
2nd Quintile	55 8	54 4	18 7	10 1	17 5	0 4	3 9	0 0	3 6	0 2	0 6	0 3	0 3	0 6	0 4	0 0	0 2	974 6
3rd Quintile	58 0	55 9	17 2	8 8	21 8	0 2	3 8	0 0	3 5	0 6	1 6	1 0	0 6	0 6	0 1	0 1	0 3	1 055 9
4th Quintile	58 3	55 8	19 7	10 0	16 3	1 3	3 0	0 0	5 3	0 2	1 7	1 4	0 4	0 7	0 5	0 1	0 1	1 051 1
Wealthiest Quintile	62 1	56 3	16 2	12 9	14 0	2 0	2 0	0 1	8 6	0 5	4 3	3 2	1 1	1 4	0 9	0 4	0 1	866 0
Total Population	56 6	54 1	18 1	9 6	17 3	0 8	3 3	0 0	4 5	0 4	1 7	1 2	0 6	0 7	0 4	0 2	0 2	4 882 0

Source IFLS Survey

As income (i e , per capita expenditures) increases, there appears to be a shift from short-term to long-term methods For example, from the third to the fifth quintiles, female sterilization rates increase from 3 5 to 8 6 percent, and IUD use rates increase from 8 8 to 12 9 percent In contrast, both pill and injection use rates are lowest among the women in the wealthiest quintile As with the increase in traditional and folkloric methods, the higher average age of women in the wealthier expenditure quintiles may partially explain this shift toward long-term methods

In summary, there appears to be an important relationship between income and contraceptive use and mix of methods However, a more complete, multivariate analysis of the data is needed to better understand this complex relationship For example, to what extent does this positive relationship reflect a demand-driven income effect, demographic differences or the targeting system of the family planning program? Finally, these data document the considerable achievements of Indonesia's family planning program, in that the use rate of modern contraceptives is nearly 50 percent even among the poorest quintile

5 Contraceptive Use and Education Level

Overall contraceptive prevalence is positively associated with women's educational attainment (see Table 2 6) However, the positive effect of education appears to reach its maximum impact by sixth grade The contraceptive prevalence rate is lowest among women with no primary school education, at 35 7 percent, but then increases sharply for women with some elementary school education and elementary school graduates to 54 2 and 67 2 percent respectively Turning to specific contraceptive methods, there are several differences in the relationship between educational attainment and individual methods For contraceptive pills, the most commonly used method, use reaches a peak among elementary school graduates and then declines Use of contraceptive injections has a similar pattern, increasing sharply from 9 5 percent among women with no education to 26 3 percent among elementary school graduates, and then declining among more-educated women In contrast, use rates of IUDs and female sterilization are relatively flat through elementary school graduates, and then reach a peak among women with at least some senior secondary education Finally, use of implants is highest among women with none or some elementary school education, and then declines

These complex and shifting patterns reflect the confounding relationship between education, age, income and residence In particular, the different patterns of educational attainment among women by age, income and residence can cloud the direct relationship between education and contraceptive use As a simple attempt to control for the effect of recent expansions in Indonesia's education system, Figure 2 1 shows the contraceptive use rates of currently-married women according to their age and educational attainment The figure shows even after controlling for age, there is not a consistent, monotonic relationship between education and contraceptive prevalence In summary, a multivariate analysis, controlling for the numerous correlates of women's education, is needed to determine the direct effect of education on contraceptive prevalence

6 Characteristics of Long-Term and Short-Term Users of Modern Contraceptives

A useful way to summarize the characteristics of contraceptive use is to compare short-term and long-term users Table 2 7 presents this comparison in five areas age, residence, education, per capita expenditure quintile and number of live children Short-term users are currently-married women who are using either contraceptive pills, contraceptive injections, condoms or diaphragm Long-term users are currently-married women who are using either IUDs, contraceptive implants, or female/male sterilization

Short-term contraceptive users have a younger age distribution than long-term users Twenty percent of short-term users are less than 25 years old, and another 28 4 percent are between the ages of 25 to 29 years Another 25 percent of short-term users are between the ages of 30 and 34 years old, but less than 30 percent are between 35 to 49 years old In contrast, only 7 percent of long-term users are less than 25 years old, and only another 15 5 percent are between 25 and 29 years old However, 51 5 percent of long-term users are between 35 and 49 years old

The urban-rural distribution of short-term users, 33 4 percent urban and 66 6 percent rural, is nearly identical to the distribution of all currently married women in the IFLS sample (See Table 2 1) However, long-term users are disproportionately urban Almost 43 percent of long-term users are urban residents

The distribution of educational achievement between short-term and long-term users show some similarities, as well as some differences Between 40 and 45 percent of both groups have not completed elementary school Thirty-seven percent of short-term users and 25 percent of long-term users are elementary school graduates Interestingly, both short-term and long-term users are on average better educated than non-users As the third column of Table 2 7 indicates, nearly one-fourth of women who do not use modern contraceptives have not completed elementary school

Relative to short-term users, long-term users are *less* likely to be from the lower 40 percent and *more* likely to be from the wealthiest 20 percent of the per capita expenditure distribution In particular, this reflects the strong positive association between female sterilization and per capita expenditures

Finally, the distribution of the number of live children among short-term and long-term users reveals interesting patterns of use Very few contraceptive users are childless However, 25 percent of short-term users have one child, while only 11 4 percent of long-term users have just one child Nearly one-half of short-term users and two-thirds of long-term users have three or more children In contrast, one-third of the women who do not use modern contraceptives have none or only one child These patterns raise interesting questions regarding the extent to which families are using long- and short-term methods to control the timing of births versus the total number of children

Table 2 6

Percentage of Currently-Married Women Currently Using Contraceptives By Method and Per Capita Expenditure Quintile

		Modern Methods									Traditional Methods			Folkloric Methods				
	Any Method	Any Modern Method	Pill	IUD	Injec tion	Con dom	Im plant	Dia phragm	Female Steril ization	Male Steril ization	Any Traditional Method	Rhy thm	With drawal	Any Folkloric Method	Herb	Mas sage	Other	Weighted # Women
None	35 7	34 2	10 8	8 1	9 5	0 0	4 1	0 0	1 4	0 3	0 7	0 3	0 4	0 7	0 3	0 2	0 1	771 7
Some Elementary	54 2	52 9	20 3	8 2	14 8	0 4	4 4	0 0	4 6	0 1	1 0	0 6	0 4	0 4	0 1	0 2	0 1	1 616 5
Elementary Graduate	67 2	65 4	22 1	8 3	26 3	0 6	2 8	0 0	4 4	0 8	1 4	0 8	0 5	0 4	0 3	0 1	0 0	1 325 0
Junior Secondary	58 1	53 9	17 4	10 1	16 7	1 1	2 8	0 0	5 6	0 2	2 6	1 7	0 9	1 6	1 4	0 0	0 2	542 6
Senior Secondary	64 6	58 4	13 1	17 6	15 2	3 0	1 2	0 2	7 4	0 6	4 8	4 0	0 8	1 4	0 5	0 3	0 6	626 3
Overall	56 6	54 1	18 1	9 6	17 3	0 8	3 3	0 0	4 5	0 4	1 7	1 2	0 6	0 7	0 4	0 2	0 2	4 882 0

Source IFLS Survey

Figure 2 1

Contraceptive Use Rates of Currently-Married Women By Education and Age

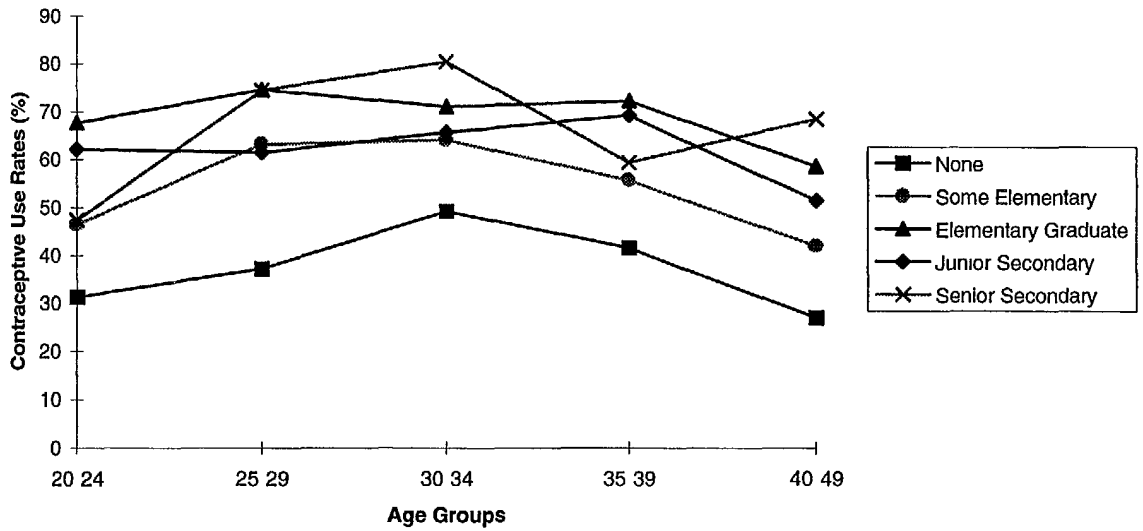

Table 2 7

Socioeconomic Characteristics of Long-Term and Short-Term Users of Modern Contraceptives Currently-Married Women (Percentage)

	Short-Term Users (1)	Long-Term Users (2)	Neither Long-Term Nor Short-Term Users
Current Age			
15-19	3 5	0 7	7 0
20-24	16 3	6 7	13 1
25-29	28 4	15 5	16 6
30-34	25 1	25 6	17 2
35-39	15 4	22 9	16 7
40-49	11 4	28 6	29 6
Total	100	100	100
Residence			
Urban	33 4	42 6	30
Rural	66 6	57 4	70
Total	100	100	100
Education Level			
None	8 9	12 3	22 7
Some Elementary	32 4	32 1	34
Elementary Graduate	36 7	24 8	20 5
Junior Secondary	10 8	11 6	11 2
Senior Secondary	11 1	19 1	11 6
Total	100	100	100
Current Per Capita Expenditure Quintile			
Poorest Quintile	18 4	13 9	21 7
2nd Quintile	20 1	19 9	19 8
3rd Quintile	23 4	20 2	20 8
4th Quintile	22 2	22 2	20 7
Wealthiest Quintile	15 9	23 7	16 9
Total	100	100	100
Number of Live Children			
None	1	0 1	12 8
One	25	11 4	19 2
Two	24 6	23 5	16 2
Three or More	49 4	65	51 8
Total	100	100	100
Weighted # Women	1,768 0	874 6	2,239 4

Source IFLS Survey

(1) Pill Injection Condom Diaphragm

(2) IUD Implant Female Sterilization, Male Sterilization

In summary, women who use short-term methods tend to be younger and to have fewer children than women who use long-term methods However, women who use long-term methods are more likely to live in urban areas, to be junior secondary school graduates and to have higher incomes than women who use short-term methods Once again, multivariate analyses are required to disentangle demand-side and supply-side (including government program) effects For example, how much of the higher use of long-term methods by higher income, urban women reflects a greater preference for long-term methods by these women, as opposed to better access to female sterilization, which is performed as an inpatient, hospital procedure?

C Knowledge of Contraceptive Methods[13]

All currently-married female respondents 15-49 years old were asked whether they had heard of each of 13 modern, traditional and folkloric contraceptive methods Nearly all currently-married women were aware of at least one contraceptive method Table 2 8 shows that 96 8 percent of all currently-married women have knowledge of at least one modern method, 27 1 percent of at least one traditional method, and 38 2 percent of at least one folkloric method

However, there is wide variation in the recognition of specific modern methods At 93 7 percent, the contraceptive pill is the most commonly heard of method, closely followed by contraceptive injection, 88 8 percent, and IUD, 81 7 percent Roughly 60 percent of women knew about condoms and contraceptive implants, while only 48 1 percent were aware of female sterilization and 26 7 percent of male sterilization

Although nearly all currently-married women living in urban and rural areas are aware of at least one contraceptive method, urban women, on average, know of more methods Table 2 8 shows that urban women have higher awareness of modern contraceptive methods, as well as traditional and folkloric methods

As shown in Table 2 9, there is also a high level of awareness of contraceptive methods across all age groups The one exception is for male sterilization, with knowledge increasing steadily and dramatically between the teen years and age 35

Across all economic levels, over 90 percent of currently-married women have heard of at least one contraceptive method However, there are substantial increases in the knowledge of each specific method with higher per capita expenditures For example, Table 2 10 shows that knowledge of IUD increases from 74 9 percent for the poorest quintile, to 90 5 percent for the wealthiest quintile There are similar increases in the awareness of contraceptive injection, condoms, sterilization, traditional methods and folkloric methods

Finally, Table 2 11 shows that more-educated women have better knowledge of specific contraceptive methods Over 98 percent of women who have had at least some primary school education report knowledge of at least one contraceptive method, while only 88 percent of

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[13] The discussion in this section refers to all currently-married' women, both pregnant and non-pregnant

women who have never attended school report knowledge of at least one contraceptive method With the exception of contraceptive pills, awareness of each contraceptive method increases substantially with higher education For example, about 62 percent of women with no formal education knew of IUD This percentage increases to 85 6 percent for women who have completed elementary school, and to 95 3 percent for women who have at least some senior secondary education

These knowledge patterns may reflect numerous factors, including characteristics of the family planning program, differential access to the media, differences in level of education or different underlying fertility preferences Further analysis is required to separate out the contributions of these alternative factors

D Contraceptive Use Among Ever-Users

Examination of the current contraceptive prevalence rates provides much information about the coverage of Indonesia's family planning program, and the behavioral responses of women and families Additional insights can be gained from examining the patterns among ever-users and never-users of contraceptives, with ever-users consisting of both current and former users In this section, we first review the rates of ever-use according to residence, age and per capita expenditure We then compare the characteristics of current-, former- and never-users

1 Ever-Use of Family Planning

Overall, about 40 percent more women report ever-using family planning than those currently using family planning Table 2 12 shows the percentage of currently-married women ever using contraceptives by urban and rural residence Over 80 percent of currently-married women report ever using family planning, in contrast to the 57 percent of currently-married women reporting current use (See Table 2 2) Roughly 78 percent of the women report ever using modern contraceptive methods, compared to 54 percent of women reporting current use of modern methods Finally, 8 percent of women report ever-use of traditional methods, which is almost 5 times greater than the percent of women currently using traditional methods This indicates that women who use traditional methods commonly switch to modern methods or stop using family planning

Although one-third more women report ever using any modern method than are currently using any modern method, there is considerable variation in this ratio across the specific methods Figure 2 2 shows that 2 4 times more women than are currently using contraceptive pills report ever having used the pills Similarly, twice as many women report ever-use of IUDs and contraceptive injections These differentials suggest that there is considerable switching among reversible alternative modern methods The one possible exception to this pattern is contraceptive implants, with only 1 4 times more women reporting ever use than current use This lower ratio may reflect (1) the recent expansion in the distribution of implants, so that many women have had the implants inserted for fewer years than the implant's life expectancy, and (2) limitations in

Table 2 8

Knowledge of Contraceptive Methods Among Currently-Married Women by Residence (percentage)

		Modern Methods									Traditional Methods			Folkloric Methods				
	Any Method	Any Modern Method	Pill	IUD	Injection	Condom	Implant	Diaphragm	Female Sterilization	Male Sterilization	Any Traditional Method	Rhythm	Withdrawal	Any Folkloric Method	Herb	Massage	Other	Weighted # Women
Urban	99 0	98 7	96 0	87 1	93 2	78 8	68 5	19 3	61 5	39 6	46 7	44 0	22 3	53 9	42 4	41 3	1 5	1 728 1
Rural	96 1	95 9	92 5	78 9	86 6	55 3	63 2	8 3	41 3	20 2	17 1	14 1	7 8	30 2	21 6	24 3	0 8	3 402 1
Total	97 1	96 8	93 7	81 7	88 8	63 2	65 0	12 0	48 1	26 7	27 1	24 2	12 7	38 2	28 6	30 0	1 1	5 130 1

Source IFLS Survey

Table 2 9

Knowledge of Contraceptive Methods Among Currently-Married Women by Age (percentage)

		Modern Methods									Traditional Methods			Folkloric Methods				
AGE	Any Method	Any Modern Method	Pill	IUD	Injection	Condom	Implant	Diaphragm	Female Sterilization	Male Sterilization	Any Traditional Method	Rhythm	Withdrawal	Any Folkloric Method	Herb	Massage	Other	Weighted # Women
15 19	96 8	96 1	91 3	74 2	75 1	49 9	58 9	7 3	40 8	10 9	12 3	11 2	6 8	29 0	13 0	26 4	0 2	261 2
20 24	96 6	96 6	93 6	80 8	92 9	63 1	70 0	8 4	42 7	16 0	24 0	18 1	11 5	39 1	25 0	31 3	0 8	687 5
25 29	98 4	98 4	95 7	85 2	91 2	63 7	69 3	12 4	50 9	23 6	28 1	25 2	14 1	39 8	29 2	31 2	1 2	1 078 3
30 34	97 4	97 2	94 5	84 6	91 8	67 3	70 2	14 0	52 3	33 6	29 6	27 3	14 2	40 7	33 0	33 0	1 2	1 115 6
35 39	98 3	97 7	93 7	80 1	90 9	66 7	63 4	14 3	50 7	33 7	31 8	29 0	13 4	41 4	31 5	31 2	1 0	864 8
40 49	94 9	94 6	91 5	78 9	82 7	59 1	55 2	11 3	44 3	27 7	25 2	23 3	11 2	33 3	27 5	25 2	1 2	1 122 6
All Ages	97 1	96 8	93 7	81 7	88 8	63 2	65 0	12 0	48 1	26 7	27 1	24 2	12 7	38 2	28 6	30 0	1 1	5 130 1

Source IFLS Survey

Table 2 10

Knowledge of Contraceptive Methods Among Currently-Married Women by Per Capita Expenditure Quintile

		Modern Methods									Traditional Methods			Folkloric Methods				
	Any Method	Any Modern Method	Pill	IUD	Injec tion	Con dom	Im plant	Dia phragm	Female Steril ization	Male Steril ization	Any Traditional Method	Rhy thm	With drawal	Any Folkloric Method	Herb	Mas sage	Other	Weighted # Women
Poorest Quintile	94 7	94 2	90 0	74 9	80 3	47 9	56 4	6 8	30 3	11 4	10 0	7 0	5 0	26 1	16 2	20 0	0 1	975 6
2nd Quintile	96 5	96 1	93 0	79 8	88 3	57 4	65 1	10 7	42 8	19 9	16 9	14 8	7 2	30 7	21 5	24 2	0 4	1 027 4
3rd Quintile	98 2	98 1	95 3	77 5	87 5	61 4	62 5	8 2	47 8	23 1	23 3	19 1	10 8	35 1	26 7	29 3	1 3	1 106 7
4th Quintile	97 8	97 6	95 1	86 3	93 4	68 2	69 3	12 7	53 4	32 2	33 3	29 8	15 4	45 6	34 5	35 1	1 6	1 104 6
Wealthiest Quintile	98 0	98 0	94 9	90 5	94 5	82 2	71 7	23 0	67 0	48 4	53 8	52 4	25 8	54 3	45 1	42 1	2 0	915 8
Total Population	97 1	96 8	93 7	81 7	88 8	63 2	65 0	12 0	48 1	26 7	27 1	24 2	12 7	38 2	28 6	30 0	1 1	5 130 1

Source IFLS Survey

Table 2 11

Knowledge of Contraceptive Methods Among Currently Married Women by Education

		Modern Methods									Traditional Methods			Folkloric Methods				
	Any Method	Any Modern Method	Pill	IUD	Injec tion	Con dom	Im plant	Dia phragm	Female Steril ization	Male Steril ization	Any Traditional Method	Rhy thm	With drawal	Any Folkloric Method	Herb	Mas sage	Other	Weighted # Women
None	88 2	87 2	82 0	62 4	71 9	34 2	38 7	4 3	20 3	9 7	7 7	5 5	3 1	20 1	14 3	15 6	0 3	800 7
Some Elementary	98 1	97 9	93 6	78 6	87 5	56 0	60 0	5 9	37 8	18 6	15 0	12 2	6 4	32 5	23 2	26 2	1 1	1 701 1
Elementary Graduate	98 9	98 9	96 7	85 6	93 8	66 9	72 5	11 1	53 5	27 0	21 5	18 9	8 2	37 5	29 4	29 0	0 9	1 398 0
Junior Secondary	98 8	98 5	95 9	92 6	93 1	80 9	75 5	14 9	60 4	31 0	46 3	40 2	20 7	51 2	37 1	39 1	1 2	566 2
Senior Secondary	99 9	99 8	99 8	95 3	98 4	93 7	84 5	36 7	86 2	63 6	76 6	74 8	42 6	65 0	51 0	51 9	2 2	664 2
Total	97 1	96 8	93 7	81 7	88 8	63 2	65 0	12 0	48 1	26 7	27 1	24 2	12 7	38 2	28 6	30 0	1 1	5 130 1

Source IFLS Survey

Table 2 12

Ever-Use of Contraceptive Methods Among Currently-Married Women by Contraceptive Method and Residence

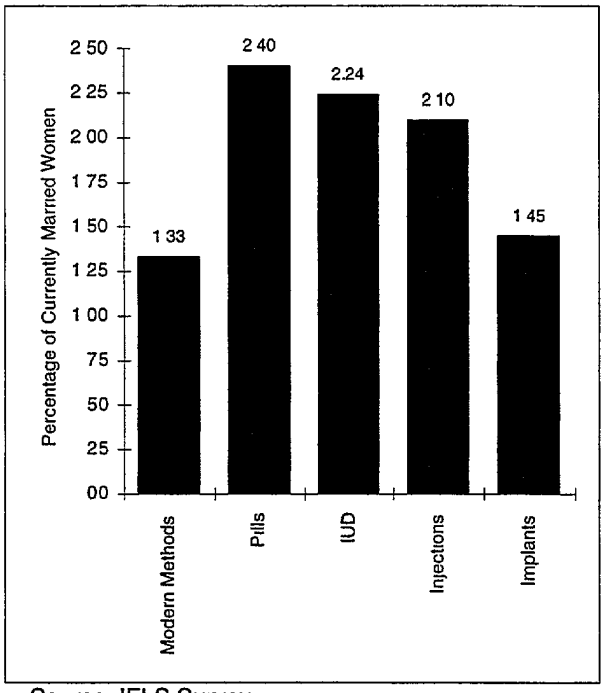
		Modern Methods									Traditional Methods			Folkloric Methods				
	Any Method	Any Modern Method	Pill	IUD	Injection	Condom	Implant	Diaphragm	Female Sterilization	Male Sterilization	Any Traditional Method	Rhythm	Withdrawal	Any Folkloric Method	Herb	Massage	Other	Weighted # Women
Urban	81 6	78 2	42 6	27 0	41 9	13 1	3 2	0 4	7 8	1 1	14 9	10 8	8 0	11 7	8 9	5 5	0 3	1 635 9
Rural	70 0	68 4	44 0	18 8	33 5	2 8	5 6	0 5	3 4	0 6	4 6	3 2	2 1	6 2	4 2	3 8	0 1	3 246 0
Total	73 9	71 7	43 5	21 5	36 3	6 2	4 8	0 5	4 9	0 8	8 0	5 7	4 1	8 1	5 8	4 4	0 2	4,882 0

Source IFLS Survey

the availability of trained personnel to remove the implants The overall and method-specific urban and rural differences in ever-use, shown in Table 2 12, demonstrate the same pattern as the urban-rural differences in current use

Figure 2 2

Ratio of Contraceptive Method Ever Used to Currently Used Currently-Married Women



Source IFLS Survey

Tables 2 13 and 2 14 show the patterns of ever-use according to age and per capita expenditure The trend of ever-use with respect to age is similar to the trend of current use, increasing with age from 15 to 19 years through 30 to 34 years, and then declining modestly However, the ratio between ever-use and current use increases with age only one-tenth more women aged 15 to 19 report ever using than are currently using a method, while 60 percent more women aged 40 to 49 years report ever use than current use This indicates that older women are more likely to stop using family planning than younger women The pattern of ever-use with respect to per capita expenditures is quite similar to the pattern of current use Furthermore, the ratio of ever-use to current use does not vary significantly by expenditure level

2 Former-Users, Current-Users and Never-Users of Family Planning

In the aggregate, all women can be categorized as either ever-users or never-users of contraceptives, with ever-users consisting of current-users and former-users Women can fall into

Table 2 13

Percentage of Currently-Married Women by Contraceptive Method Ever Used and Age

		Modern Methods									Traditional Methods			Folkloric Methods				
AGE	Any Method	Any Modern Method	Pill	IUD	Injection	Condom	Implant	Diaphragm	Female Sterilization	Male Sterilization	Any Traditional Method	Rhythm	Withdrawal	Any Folkloric Method	Herb	Massage	Other	Weighted # Women
15 19	33 6	31 9	18 0	2 1	20 6	0 0	2 3	0 0	0 0	0 0	1 4	0 1	1 3	0 8	0 0	0 8	0 0	224 8
20 24	70 5	68 4	36 3	11 6	41 5	3 3	4 3	0 0	0 9	0 3	5 0	2 2	3 4	6 7	3 8	4 2	0 2	638 8
25 29	78 9	76 2	47 4	20 2	44 7	3 9	5 1	1 6	2 0	0 6	8 1	5 3	4 2	6 5	4 7	3 7	0 1	1 007 9
30 34	83 5	82 5	48 3	26 3	46 9	7 5	6 7	0 0	4 7	0 8	8 5	5 8	5 4	11 4	9 4	6 8	0 2	1 051 5
35 39	79 0	75 4	47 6	26 8	34 7	10 1	5 3	0 5	7 5	1 4	10 1	8 2	4 9	8 4	5 5	4 9	0 1	844 6
40 49	66 6	64 4	41 8	23 9	20 1	7 1	3 0	0 2	9 0	0 9	8 9	7 4	3 1	8 2	5 9	3 3	0 3	1 114 3
All Ages	78 9	76 2	47 4	20 2	44 7	3 9	5 1	1 6	2 0	0 6	8 1	5 3	4 2	6 5	4 7	3 7	0 1	4 882 0

Source IFLS Survey

Table 2 14

Percentage of Currently-Married Women by Contraceptive Method Ever Used and Per Capita Expenditure Quintile

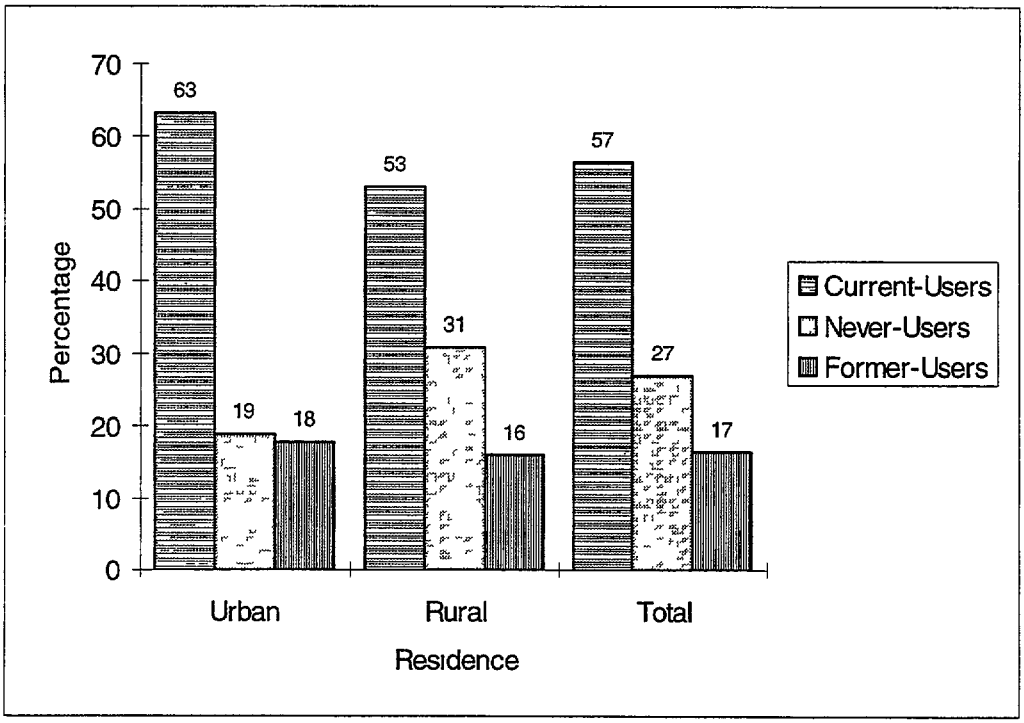
		Modern Methods									Traditional Methods			Folkloric Methods				
	Any Method	Any Modern Method	Pill	IUD	Injection	Condom	Implant	Diaphragm	Female Sterilization	Male Sterilization	Any Traditional Method	Rhythm	Withdrawal	Any Folkloric Method	Herb	Massage	Other	Weighted # Women
Poorest Quintile	66 0	64 6	40 1	13 5	30 1	2 4	5 1	0 1	2 2	0 6	2 4	1 0	1 6	3 9	2 5	2 6	0 0	934 5
2nd Quintile	75 7	73 1	45 6	21 8	33 7	4 3	5 0	1 4	3 8	0 6	5 4	4 7	2 1	6 9	4 1	4 3	0 2	974 6
3rd Quintile	73 1	71 1	43 7	17 9	40 4	3 3	5 9	0 1	3 9	0 9	5 2	3 5	2 8	10 8	9 1	6 9	0 2	1,055 9
4th Quintile	74 7	72 8	43 6	25 6	39 8	7 5	4 7	0 4	5 5	0 5	10 4	7 0	5 9	8 2	5 4	3 7	0 3	1 051 1
Wealthiest Quintile	80 5	76 9	44 7	29 4	37 0	14 6	3 0	0 4	9 4	1 3	17 7	13 1	8 4	10 2	7 6	4 3	0 1	866 0
Total Population	73 9	71 7	43 5	21 5	36 3	6 2	4 8	0 5	4 9	0 8	8 0	5 7	4 1	8 1	5 8	4 4	0 2	4 882 0

Source IFLS Survey

one, and only one, of the three categories current-, former- or never-users As shown in Figure 2 3, 56 6 percent of all currently-married women are current-users, 26 9 percent are never users and 16 5 percent are former users Examining the relationships of these three groups with respect to age, residence and expenditure levels confirms some prior expectations and provides new insights into contraceptive prevalence rates

Figure 2 3

Former-User, Never-Users and Current-Users of Contraceptives Among Currently-Married Women by Residence



Source IFLS Survey

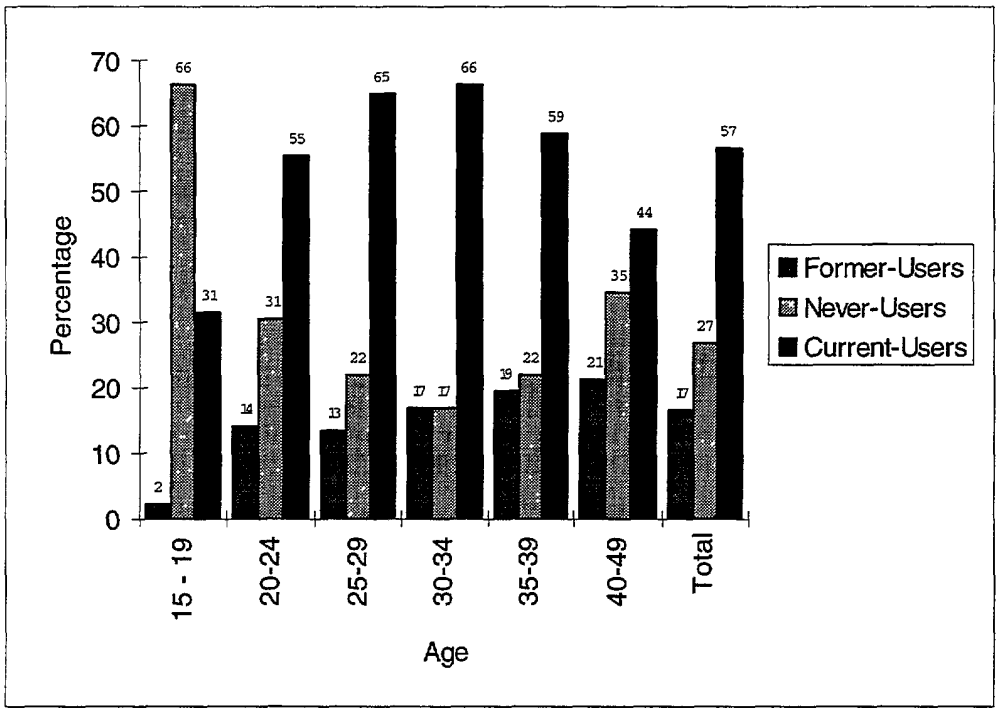
As previously noted, and as the figure shows, a larger percentage of urban than rural women currently use contraceptives Figure 2 3 indicates that the urban-rural difference in contraceptive use rates is due to higher rates of never-users While 63 3 percent of currently-married urban women are current-users, only 53 2 percent of rural women are current-users Despite this difference, the percentage of former users is nearly identical in urban and rural areas, at roughly 17 percent This pattern of never-users may reflect both supply and demand factors For example, access to public health centers and subcenters is more limited in rural than urban areas, with much longer travel times and distance, and higher travel costs At the same time, a disproportionate share of the poor and near-poor live in rural areas, and their lower incomes may result in higher fertility preferences and less demand for contraceptives

Figure 2 4 graphs the relationship between user status and women's age As discussed above, the relationship between age and current use of family planning is concave, increasing with age until the middle age groups and then declining for the older age groups In contrast, the

relationship between age and never-use is convex, decreasing with age until the middle groups and then increasing for the older age groups Finally, the percentage of former-users increases with age, especially between the 15 to 19 year-old group and the 20 to 24 year-old group In general, these patterns conform to our expectations For example, the youngest age group has the highest percentage of never-users and lowest percentage of former users, largely because these young adults have experienced the fewest number of years in the reproductive ages Further, they are recently married and may wish to quickly bear a child

Figure 2 4

Former-Users, Never-Users and Current-Users of Contraceptives Among Currently-Married Women by Age

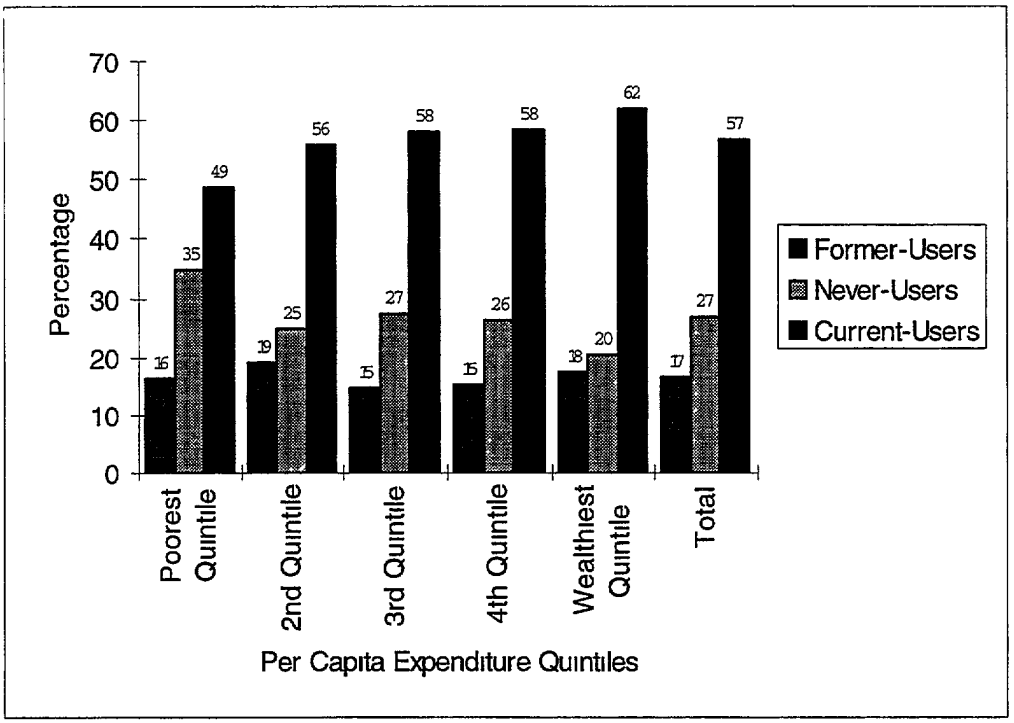


Source IFLS Survey

In contrast, the oldest age group has the lowest percentage of current-users and the highest percentage of former-users Interestingly the oldest age group also has the second highest percentage of never-users, 34 6 percent, a substantial jump above the 21 9 percent of the 35 to 39 year-old women This may be an artifact of the growth pattern of the Indonesian family planning program—i e , the program had not reached its current level of operation when the oldest women were at their prime reproductive ages

Figure 2 5

Former-Users, Never-Users and Current Users of Contraceptives Among Currently-Married Women by Per Capita Expenditure Quintile



Source IFLS Survey

Figure 2 5 shows the distribution of user status by per capita expenditure quintiles As previously noted there is a positive association between current contraceptive use and per capita expenditure Interestingly, there is no apparent relationship between former use and expenditures However, there is a strong negative association between the percentage of never-users and expenditure levels Nearly 35 percent of the women in the poorest quintile are never-users, as compared to 20 4 percent in the highest expenditure quintiles Therefore, the positive association between current use and expenditure levels is not explained by higher discontinuation rates among low income women Rather, low income women are more likely to have never used contraceptives [14] Multivariate contraceptive demand models are needed to determine the extent to which these patterns reflect targeting and programmatic features of the family planning program, or socioeconomic and demographic determinants of demand

E Reasons for Not Using Contraceptives

[14] The negative relationship between expenditure levels and never-use rates does not appear to be an artifact of the mildly positive relationship between expenditure and age To test this possibility we examined the relationship between the percentage of never-users and expenditures excluding the youngest and oldest age groups—and still found a negative relationship

Both former-users and never-users of contraceptives were asked to give their main reasons for not using contraceptives These women were asked about 22 specific possibilities and were also offered an open-ended "other" category In addition, respondents were permitted to give more than one response For data-recording purposes, the 23 reasons were collapsed into seven categories

- want a child or now pregnant
- recent birth or now breastfeeding
- limited access (which includes "high costs" and "difficulty in obtaining method")
- health concerns (which includes "health reasons," "side effects," and "health provider's recommendation")
- disapproval (which includes disapproval by the woman, her husband, family, or religion)
- lack of knowledge about family planning methods
- other (which includes husband's absence, infrequent intercourse, menopause, hysterectomy and other reasons)

Of these reasons, only limited access, health concerns, lack of knowledge and disapproval would appear to be directly influenced by the family planning program's service delivery and social marketing activities Wanting a child, being pregnant, breastfeeding, and the reasons given in the "other" category, such as infrequent intercourse, would appear to be largely uninfluenced by the family planning program's activities In this section, we examine the reasons given for not using contraceptives according to area of residence, age and per capita expenditure quintiles

1 Main Reasons Former Users Are Not Using Contraceptives

Table 2 15 displays the main reasons indicated by former users for not currently using family planning, by residence and for the total population Over 50 percent of former users indicate that their main reason for discontinuing use is related to child bearing either want a child, currently pregnant, recently pregnant or breastfeeding The next most commonly cited reasons are health concerns (23 percent) and "other" (21 percent) Disapproval, limited access and lack of knowledge were mentioned by only a small percentage of women These data indicate that to lower the rate at which women discontinue family planning, greater emphasis should be placed on addressing the health concerns related to contraceptive use However, it is difficult to determine from these data whether the health concerns referred to by respondents are based on misperceptions legitimate concerns, or negative personal experiences

Table 2 15

Main Reason For Not Using Contraceptives Among Currently-Married Women Who Are Previous Contraceptive Users By Residence (Percentage)

	Reasons							
	Want Child/ Pregnant	Recent Birth/ Breastfeeding	Limited Access	Health Concern	Disapproval	Lack of Knowledge	Other (*)	Weighted # Women
Urban	36 2	15 9	1 0	23 9	6 5	1 6	21 8	341 5
Rural	36 3	15 1	2 4	22 6	7 2	3 9	20 7	618 3
Total	36 3	15 4	1 9	23 1	7 0	3 1	21 1	959 8

Source IFLS Survey

( ) Other includes husband s absence menopause hysterectomy infrequent intercourse and other reasons

Table 2 15 also indicates that there are no substantial differences between urban and rural residents in the reasons cited for discontinuing family planning However, there are some substantial differences by age group Table 2 16 shows that child-bearing reasons are most frequently mentioned by women aged 20 to 34 years of age While child-bearing reasons are also mentioned by about one-third of the women in the 35-39 year-old age group, about one-third are also concerned about health problems Finally, while health problems are also a prominent concern of women in the 40-49 year-old group, nearly half cite "other" reasons, reflecting the higher rates of hysterectomy, menopause and infrequent coitus among women in the older age group

There is little systematic variation in the main reasons for discontinuation by per capita expenditure quintile Table 2 17 shows that the percentage of women stating that a main reason for discontinuation is wanting a child or being pregnant increases with level of expenditure, from 24 percent among the poorest quintile to 49 percent among the wealthiest quintile In contrast, the percent mentioning recent birth or breastfeeding declines with expenditures, from 23 percent by the poorest quintile to 11 percent by the wealthiest quintile The percentage mentioning health concerns does not appear to vary by expenditure level, but disapproval appears to be more important for women from the lowest 40 percent of the expenditure distribution

Former users with higher education are more likely to indicate that they have stopped using contraceptives because they are or want to become pregnant (see Figure 2 18) Interestingly, lack of knowledge as a reason was mentioned by 8 percent of women with no formal education, 3 percent of women with only a primary school education, and less than 1 percent of women with at least some secondary school education

Table 2 16

Main Reason For Not Using Contraceptives Among Currently-Married Women Who Are Previous Contraceptive Users By Age (Percentage)

AGE	Reasons							Weighted # Women
	Want Child/ Pregnant	Recent Birth/ Breastfeeding	Limited Access	Health Concern	Disapproval	Lack of Knowledge	Other (*)	
15 19	100 0	4 1	0 0	4 8	0 0	0 0	0 0	11 2
20 24	50 9	15 1	0 7	21 8	10 0	0 0	7 8	119 7
25 29	56 9	17 7	0 0	12 5	3 2	3 5	13 8	185 3
30 34	38 8	27 6	2 0	17 9	10 6	0 8	10 0	225 6
35 39	32 7	13 1	4 4	33 7	4 7	4 2	15 7	177 6
40 49	10 5	4 6	2 2	29 8	6 9	5 7	48 7	240 5
All Ages	36 3	15 4	1 9	23 1	7 0	3 1	21 1	959 8

Source IFLS Survey

(*) Other includes husband s absence menopause hysterectomy infrequent intercourse and other reasons

Table 2 17

Main Reason For Not Using Contraceptives Among Currently-Married Women Who Are Previous Contraceptive Users By Per Capita Expenditure Quintile (Percentage)

	Reasons							Weighted # Women
	Want Child/ Pregnant	Recent Birth/ Breastfeeding	Limited Access	Health Concern	Disapproval	Lack of Knowledge	Other (*)	
Poorest Qtl	23 9	22 7	4 5	19 9	8 1	2 8	25 3	175 5
2nd Quintile	31 7	18 1	0 7	27 0	11 7	4 5	20 2	219 4
3rd Quintile	36 0	18 0	4 5	23 5	4 2	1 8	19 4	190 0
4th Quintile	40 8	7 3	0 2	25 2	4 7	3 7	24 4	195 1
Wealthiest Qtl	49 4	11 0	0 0	18 7	5 4	2 4	16 4	179 8
Total	36 3	15 4	1 9	23 1	7 0	3 1	21 1	959 8

Source IFLS Survey

( ) Other includes husband s absence menopause hysterectomy infrequent intercourse and other reasons

Table 2 18

Main Reason For Not Using Contraceptives Among Currently-Married Women Who Are Previous Contraceptive Users By Education (Percentage)

Education	Reasons							Weighted # Women
	Want Child/ Pregnant	Recent Birth/ Breastfeeding	Limited Access	Health Concern	Disapproval	Lack of Knowledge	Other ( )	
None	23 4	14 0	4 5	21 4	3 7	8 0	32 1	131 4
Some Elementary	36 0	16 4	3 2	23 8	8 0	2 9	19 7	375 3
Elemenary Graduate	37 7	19 1	0 0	18 9	9 8	3 2	15 1	225 8
Junior Secondary	42 6	12 7	0 0	26 5	8 2	1 0	24 3	105 9
Senior Secondary	43 2	9 3	0 4	27 7	1 0	0 0	21 9	121 3
Overall	36 3	15 4	1 9	23 1	7 0	3 1	21 1	959 8

Source IFLS Survey

2 Main Reasons Never-Users Are Not Using Contraceptives

Table 2 19 displays the main reasons indicated by never-users for not using family planning, by residence and for the total population The two most commonly mentioned reasons are wanting a child or being pregnant (38 7 percent) and "other" (29 4 percent) Only two reasons show substantial urban-rural differences lack of knowledge (15 1 percent urban versus 27 1 percent rural) and "other" (36 2 percent urban versus 27 2 percent rural)

Only three of the six reasons are related to the age of the respondent Table 2 20 indicates that the percentage of women mentioning wanting a child or being pregnant declines from 68 8 percent for youngest age group to 13 7 percent for the oldest age group In contrast, the percentage of women mentioning "other" reasons increases from 6 4 percent for the youngest age group to 45 7 percent for the oldest age group The age pattern for these two reasons is very similar to that observed among former users Interestingly, lack of knowledge also increases with age, from 6 6 percent among the youngest age group to 40 3 percent among the oldest age group

Recall from Figure 2 5 that over one-third of currently-married women in the lowest expenditure quintile are never users, a rate that is substantially higher than for nonpoor, women Table 2 21 indicates that the reasons cited by never-users in the poorest quintile differ somewhat from the reasons given by the nonpoor, never-users The reason most commonly mentioned by women in the poorest quintile is lack of knowledge, 35 3 percent versus 24 1 percent for all never-users A higher percentage of the poorest never-users also mention limited access, but this amounts to only 7 6 percent of these women Disapproval also appears to be more important for never-users from the poorest quintile Finally, the poorest never-users are much less likely to mention wanting a child or being pregnant, 26 8 percent versus 38 7 percent for all never-users

Table 2 19

Main Reason Never Used Contraceptives Among Currently-Married Women By Residence (Percentage)

	Reasons						
	Want Child/ Pregnant	Limited Access	Health Concerns	Lack of Knowledge	Disapproval	Other (*)	Weighted # Women
Urban	41 0	0 8	10 3	15 1	16 5	36 2	348 6
Rural	38 0	3 7	7 1	27 1	17 6	27 2	1 055 4
Total	38 7	3 0	7 9	24 1	17 3	29 4	1,404 0

Source IFLS Survey

( ) Other includes husband s absence menopause hysterectomy infrequent intercourse and other reasons

Table 2 20

Main Reasons Never Used Contraceptives Among Currently-Married Women By Age (Percentage)

	Reasons						
AGE	Want Child/ Pregnant	Limited Access	Health Concerns	Lack of Knowledge	Disapproval	Other (*)	Weighted # Women
15-19	68 8	0 0	6 9	6 6	19 6	6 4	179 4
20-24	54 2	2 7	6 1	18 9	15 7	24 8	213 9
25 29	43 6	2 5	11 6	17 3	20 2	19 9	237 9
30 34	42 9	6 7	8 5	20 4	23 4	30 0	192 5
35 39	34 1	3 1	11 7	25 6	12 5	34 3	190 6
40-49	13 7	2 9	5 1	40 3	14 8	45 7	389 8
All Ages	38 7	3 0	7 9	24 1	17 3	29 4	1,404 0

Source IFLS Survey

( ) Other includes husband s absence menopause hysterectomy infrequent intercourse and other reasons

Table 2 21

Main Reasons Never Used Contraceptives Among Currently-Married Women By Per Capita Expenditure Quintile (Percentage)

	Reasons						
	Want Child/ Pregnant	Limited Access	Health Concerns	Lack of Knowledge	Disapproval	Other (*)	Weighted # Women
Poorest Qtl	26 8	7 6	9 1	35 3	22 2	27 3	344 3
2nd Quintile	36 3	3 7	7 9	28 8	17 0	32 2	262 9
3rd Quintile	46 3	1 4	4 5	18 9	13 2	31 3	304 2
4th Quintile	41 0	0 7	11 1	17 0	17 9	27 6	296 5
Wealthiest Qtl	47 8	0 0	6 5	17 2	14 9	29 1	196 1
Total	38 7	3 0	7 9	24 1	17 3	29 4	1 404 0

Source IFLS Survey

(*) Other includes husband s absence menopause hysterectomy infrequent intercourse and other reasons

Table 2 22 shows a strong positive relationship between women's educational attainment and the likelihood of a women reporting wanting a child as a primary reason for never using contraceptives The table also shows a strong negative relationship between reported lack of knowledge and educational attainment For example, 37 5 percent of women with no formal education indicate lack of knowledge as a primary reason for never having used contraceptives, whereas only 3 3 percent of women with at least some senior secondary education report lack of knowledge as their primary reason Perhaps surprisingly, there is no clear relationship between educational attainment and women reporting a main reason of health concerns

In summary, these findings suggest a key area for future Indonesian family planning program activities--addressing the lack of knowledge expressed by one-third of poor, less educated and rural women as a major reason for never using contraceptives

3 Comparison of Former Users and Never-Users

To gain insights into the similarities and differences between former users and never-users, we compare in Table 2 23 the main reasons cited by these two groups Nearly 40 percent of both former- and never-users mention wanting a child or being pregnant as a main reason for not using family planning Only between 2 and 3 percent of these women mention limited access as a main reason Health concerns is the only reason that is more frequently mentioned by former users than never-users, 23 percent versus 8 percent This suggests that many former users expressing health concerns are doing so based on their previous personal experience, and this may indicate low quality of care (e g , inadequate information provided to users or high rates of side effects)

Table 2 22

Main Reasons Never Used Contraceptives Among Currently-Married Women By Education (Percentage)

	Reasons						
Education	Want Child/ Pregnant	Limited Access	Health Concern	Disapproval	Lack of Knowledge	Other (*)	Weighted # Women
None	25 2	4 6	4 7	23 6	37 5	29 3	393 1
Some Elementary	30 9	4 0	7 3	15 8	28 3	36 5	447 0
Elemenary Graduate	48 7	2 1	12 2	11 4	16 6	27 0	280 8
Junior Secondary	58 7	0 2	13 4	9 5	9 4	21 8	145 1
Senior Secondary	61 4	0 0	4 8	24 8	3 3	19 7	138 1
Overall	38 7	3 0	7 9	17 3	24 1	29 4	1404 0

Source IFLS Survey

In contrast, never-users are much more likely to report disapproval, lack of knowledge and "other" reasons The higher percentage of "other" responses is at least partially explained by the higher percentage of older women among never-users than among former users Particularly noteworthy is the differences for lack of knowledge 24 percent versus 3 percent It is perhaps surprising that 24 percent of never-users list lack of knowledge as a main reason, while nearly all currently-married women indicated that they knew of one or more contraceptive methods (see Table 2 8) This suggests that while virtually all currently-married women have heard of at least one method, roughly 6 5 percent of women do not feel they have enough specific information to make a decision to use family planning [15]

[15] The 6 5 percent estimate is derived by multiplying the percentage of all currently-married women who are never-users 26 9 percent by the percentage of never-users mentioning lack of knowledge 24 1 percent

Table 2 23

Main Reason for Not Using Contraceptives Among Currently-Married Women Former Users and Never-Users (Percentage)

	Reasons							
	Want Child/ Pregnant	Recent Birth/ Breastfeeding	Limited Access	Health Concern	Disapproval	Lack of Knowledge	Other (*)	Weighted # Women
Former Users	36 3	15 4	1 9	23 1	7	3 1	21 1	959 8
Never Users	38 7		3	7 9	17 3	24 1	29 4	1 404 0

Source IFLS Survey

(*) Other includes husband s absence menopause hysterectomy infrequent intercourse and other reasons

F Information on Side Effects Provided to Current Users

In addition to increasing access to family planning services, the Indonesian family planning program is also concerned about continuing to improve the quality of these services One important dimension of quality is the information given by providers to clients on the possible side effects associated with each contraceptive method This information should enable women to identify early warning signs of complications and include instructions on what to do should a side effect develop Many proponents of quality improvements argue that providing this type of information will improve contraceptive prevalence rates by allaying women's health concerns While this claim needs ultimately to be tested empirically, providing good information on the possible side effects of medications and family planning methods is considered a good health care practice that has positive impacts on patients' health status and ease of mind

Current contraceptive users were asked whether their family planning provider explained the possibility of side effects due to the use of their chosen method, and what to do if a side effect occurred Table 2 24 shows that only about 63 percent of all current-users report receiving information on possible side effects The best informed women appear to be those using IUDs, the least well informed appear to be those using implants These data suggest that there is considerable room for improvement in the current family planning delivery system with regard to providing information to clients

Studies of the Indonesia health care system suggest that higher income populations are more able and willing to pay for higher quality services than are lower income populations [16] Although multivariate demand models of the IFLS data are needed to fully address this issue for family planning, the simple cross-tabulation of expenditure levels and information on side effects are suggestive Figure 2 6 shows the distribution of women receiving information on side effects

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[16] *Financing Health Care Lessons from the Indonesian Resource Mobilization Study Executive Summary* RAND April 1995

Table 2 24

Percentage of Current Users of Modern Methods Receiving Information on Side Effects by Type of Method Used

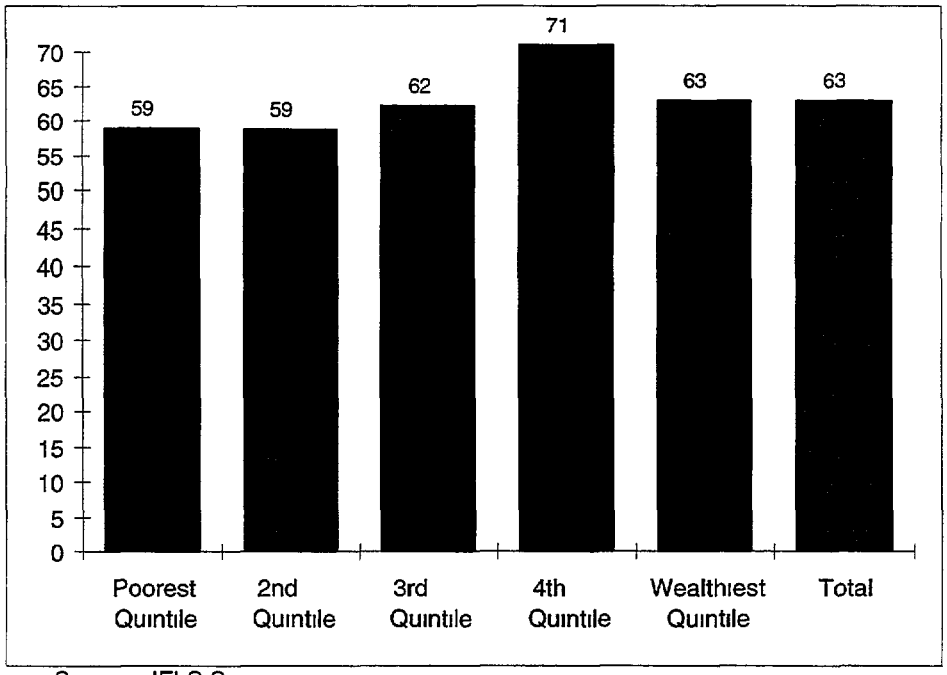
Type of Method Used	Informed About Side Effects
Pills	63 2
IUD	71 9
Injections	62 0
Implants	54 1
Female sterilization	60 3
All modern methods	62 9

by their per capita expenditure quintile Although there is some indication that higher income women are more likely to receive this information, the preliminary evidence does not suggest a large disparity between the poor and nonpoor However, it is important to point out that the tabulation presented here does not control for the numerous factors that could affect the relationship between income and quality of care for example, availability of alternative providers, prices, choice of method, level of education, and residence

Figure 2 7 provides some insights as to how education and income may influence who is likely to receive information on side effects First, controlling for the level of household expenditures, higher educational attainment is associated with a modestly increasing proportion of women receiving information on potential side effects of the contraceptive methods they are using For example, for women from the lower 40 percent of the expenditure distribution, the percentage receiving information on side effects increases from 53 9 percent for women with no formal education to 68 6 percent for women with at least some secondary education A similar pattern exists for women from the upper 60 percent of the income distribution Second, holding the level of education constant, women who have graduated from elementary school appear to receive more information on side effects as their incomes increase For example, among graduates who are in the lower 40 percent of the expenditure distribution, 59 8 percent have received information on possible side effects, compared to the 66 percent of the graduates in the upper 60 percent of the expenditure distribution Interestingly, the positive association between level of expenditure and more information does not appear for women with at least some secondary education From this analysis it is not possible to determine whether these observed patterns reflect conscious choices made by more educated and higher-income women, the distribution of available providers, or other factors A multivariate analysis including both individual and provider data is needed

Figure 2 6

Percentage of Current Users of Modern Methods Receiving Information on Side Effects by Current Per Capita Expenditure Quintile



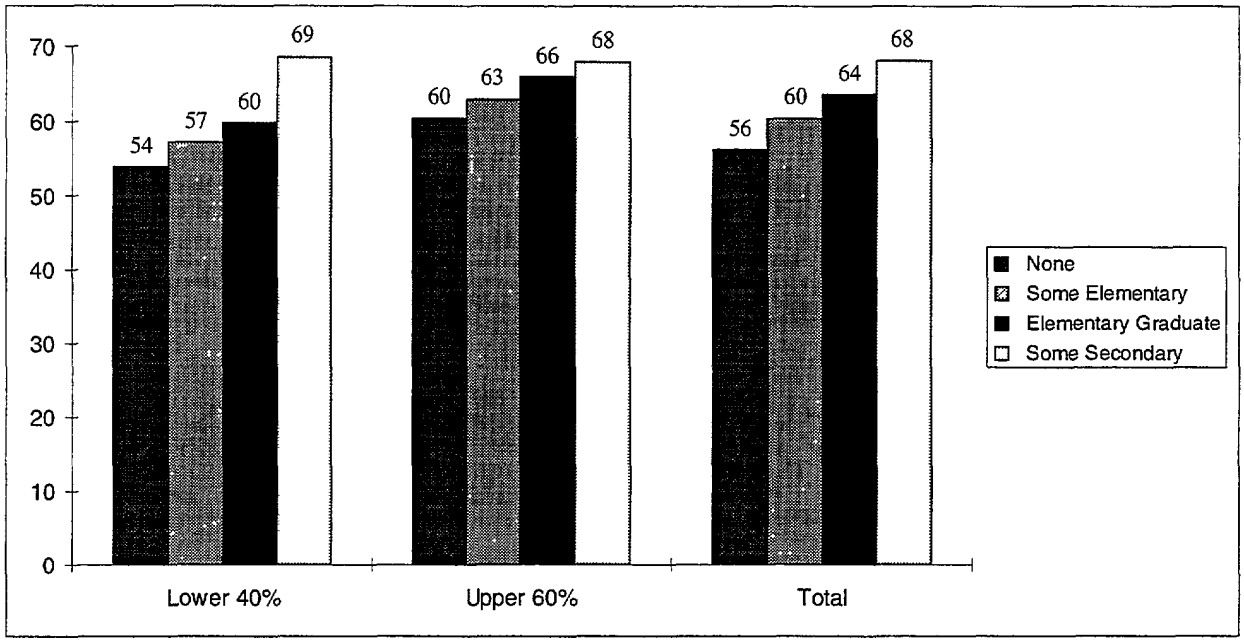
Source IFLS Survey

G. Conclusion

In this chapter we have used the IFLS data to examine several aspects of the Indonesian family planning program Although using only descriptive analysis, this chapter highlights many of the successes of the Indonesian family planning program, indicates areas in need of additional efforts, and provides insights into some of the factors underlying the existing patterns However, descriptive analysis such as that presented here only scratches the surface of the IFLS's potential to inform family planning policies First, the analysis presented here is based only on data from the household surveys and does not include the data on family planning and providers' prices, quality and access that were collected by the CFS Second, the IFLS was specifically designed to support multivariate analyses combining household and community data The data, which are at once both detailed and comprehensive, will support a broad range of analyses, including examinations of (1) the behavioral motivations underlying families' fertility decisions, (2) the influences on fertility of proximate determinants such as contraceptive use, marital status, breastfeeding, and post-partum abstinence, (3) the influence of cultural, social and economic factors on the proximate determinants of fertility, and (4) the important role played by Indonesia's health and family planning programs In addition, the IFLS is well suited to look at the impacts of family planning on other aspects of family welfare, such as household income and children's health and nutritional status

Figure 2 7

Percentage of Current Users of Modern Methods Receiving Information on Side Effects by Per Capita Expenditure and Education



Source IFLS Survey

In sum, the potential of the IFLS can best be achieved by bringing together policy analysts and government officials to design and implement in-depth, multivariate analyses of the household and community data

Chapter 3

Health

The Indonesian government is currently pursuing a wide range of activities to improve the country's health care system One goal of the Ministry of Health is to increase the level of resources available to the system The ministry is seeking to accomplish this, in part, by expanding health insurance coverage It is hoped that expansion of health insurance from both public and private sources will help Indonesia reach a stated goal that 5 percent of the country's GDP should be spent on health care by the year 2000 By expanding the resources available to the health care system, policy makers hope to improve both the quality and effectiveness of the system

Another area that has received increasing emphasis is maternal and child health, and in particular on the role of prenatal care in improving the health status of both children and mothers In this chapter, we provide descriptive analyses relating to these two concerns, resource mobilization, and maternal and child health We first turn to the health of mothers and children, examining trends in prenatal care and patterns of utilization for deliveries We then focus on health insurance coverage and analyze the potential implications of expanded coverage on health care utilization and expenditures

A Maternal Health Care Services Utilization

In this section we present data on trends in the utilization of prenatal care and on patterns of utilization of formal health care services at childbirth Three covariates are hypothesized to explain differences in utilization patterns age of the mother utilizing prenatal care and giving birth, urban versus rural location, and mother's educational attainment The data presented in this section highlight a unique feature of the IFLS methodology the use of retrospective survey research techniques to construct data series covering an extended period of time

Table 3 1, which presents source of prenatal care by age of mother, shows that approximately 21 percent of all mothers received no prenatal care Of the mothers in the 35-49 year-old age group, 28 8 percent received no prenatal care, compared to approximately 20 percent of the mothers in the younger age groups This finding reflects an important challenge for the Indonesian health care system, since it is likely that mothers 35-49 years old represent a disproportionate share of the high-risk births It is exactly this population that one hopes would have extensive prenatal care, and yet this is the group at greatest risk of receiving none

Table 3 1

Source of Prenatal Care, by Age of Mother (1988-1993)

Age of Mother	None	Public Hospital	Private Hospital	Puskesmas / Puskesmas Pembantu	Private Doctor Office/Clinic	Private Midwife Office/Clinic	Traditional Birth Attendant Office	Other
15 24	19 6%	2 0%	2 1%	41 5%	3 1%	20 0%	3 2%	8 1%
25 34	19 7%	3 5%	2 5%	37 1%	5 4%	22 4%	2 9%	5 6%
35 49	28 8%	4 8%	2 2%	31 6%	3 2%	21 1%	2 9%	2 6%
Overall	21 1%	3 1%	2 2%	37 2%	4 2%	20 9%	3 1%	6 3%

Source IFLS Survey

As shown in Table 3 2, the majority of births (72 8 percent) still occur at home in Indonesia The most popular location outside of the home is the private midwife office and clinic, where an estimated 11 7 percent of the births occurred Again, we see a significant difference in the pattern between the age groups, particularly for mothers 35-49 years old—75 percent of these mothers deliver at home and, further, they are the least likely to give birth at either public or private hospitals, with only 2 4 to 3 4 percent of these older mothers delivering at these facilities This finding raises some concern regarding the efficacy of the referral system, since one would expect that mothers in this age group represent those at highest risk and therefore would be better served by delivering their children in a more formal, better-staffed setting

Table 3 3 provides data on the type of health care provider attending the birth The most popular is the traditional birth attendant, who delivered approximately 58 percent of all babies during the time period studied The second most popular provider was the midwife, delivering 30 3 percent of all babies Again we see in this table a recurring pattern with respect to the oldest age group, age 35-49 The mothers in this category had lower utilization of formal care sources (nurses, midwives, and physicians) Again, this raises concern about the efficacy of the prenatal care and delivery process with respect to high-risk mothers It will be important to know, for future planning, the total number of mothers and the number of births occurring in this age group If, for example, very few mothers give birth in this age group, then the problem and resources required to address it are not as significant as if the data reveal that there are a high number of births in this category

Table 3 2

Location of Births, by Age of Mother (1988-1993)

Age of Mother	Own Home	Public Hospital	Private Hospital	Puskesmas / Puskesmas Pembantu	Private Doctor Office/Clinic	Private Midwife Office/Clinic	Traditional Birth Attendant Office	Other
15 24	74 9%	4 1%	3 2%	2 7%	0 6%	10 8%	0 8%	2 6%
25 34	70 5%	5 7%	4 0%	2 7%	1 9%	12 6%	0 7%	1 5%
35 49[1]	75 2%	3 4%	2 4%	1 4%	2 5%	11 3%	0 4%	1 2%
Overall	72 8%	4 8%	3 5%	2 5%	1 5%	11 7%	0 7%	1 9%

Source IFLS Survey

[1]Approximately two percent of 35 49 year old respondents could not recall the location

Table 3 3

Health Care Provider Attending Birth, by Age of Mother (1988-1993)

Age of Mother	Physician	Midwife	Nurse	Traditional Birth Attendant	Other
15 24	4 1%	27 6%	1 2%	60 3%	6 5%
25 34	5 9%	33 3%	0 6%	55 4%	4 3%
35 -49	3 7%	27 3%	0 4%	60 3%	6 0%
Overall	4 9%	30 3%	0 8%	57 9%	5 4%

Source IFLS Survey

We now turn to our descriptive analysis of the source of prenatal care as a function of urban versus rural location As shown in Table 3 4, approximately 21 percent of mothers received no prenatal care during pregnancy With respect to urban versus rural location, there are a number of significant differences For example, only 10 percent of the women in urban areas received no prenatal care, while nearly 26 percent of the women in rural areas went without care This significant difference suggests that one of the remaining challenges for health care planners in Indonesia is to ensure that all women, regardless of location, have adequate access to prenatal care services Other important differences shown in the table are that women in rural areas are much more dependent on puskesmas and puskesmas pembantu services for their

prenatal care, while women in urban areas rely more on more modern services, as indicated by the higher utilization of public and private hospitals, private doctors and private midwives

Table 3 4

Source of Prenatal Care, by Urban-Rural Location (1988-1993)

	None	Public Hospital	Private Hospital	Puskesmas / Puskesmas Pembantu	Private Doctor Office/Clinic	Private Midwife Office/Clinic	Traditional Birth Attendant Office	Other
Urban	9 9%	6 3%	6 0%	30 7%	9 8%	30 4%	0 7%	4 9%
Rural	25 7%	1 8%	0 7%	39 8%	1 9%	17 1%	4 1%	6 9%
Overall	21 1%	3 1%	2 2%	37 2%	4 2%	20 9%	3 1%	6 3%

Source IFLS Survey

As seen in Table 3 5, there are significant differences between urban and rural areas with respect to location of birth The most striking difference is whether or not the birth occurred in the home or in a formal health setting Nearly 85 percent of all births in rural areas still occur in the woman's home, compared to 44 4 percent in urban areas The most frequent location outside of the home in urban areas are private midwife offices and clinics, where 26 2 percent of the births occurred The second most popular site was the hospital setting, both private and public In general, we see that in urban areas there is greater utilization of all formal sources of modern health care, while in rural areas the majority of births are still occurring in the home

Table 3 5

Location of Birth, by Urban-Rural Location (1988-1993)

	Own Home	Public Hospital	Private Hospital	Puskesmas / Puskesmas Pembantu	Private Doctor Office/Clinic	Private Midwife Office/Clinic	Traditional Birth Attendant Office	Other
Urban	44 4%	9 0%	9 0%	4 3%	3 8%	26 2%	0 9%	1 7%
Rural	84 2%	3 1%	1 2%	1 8%	0 5%	5 9%	0 6%	2 0%
Overall	72 9%	4 8%	3 5%	2 5%	1 5%	11 7%	0 7%	1 9%

Source IFLS Survey

Table 3 6 presents data on the type of health care provider attending the birth Again, we can see significant differences between urban and rural areas In rural areas, traditional birth

attendants were present at 70 6 percent of the births, while in urban areas they were utilized only 26 6 percent of the time The largest difference among the other providers occurs for nurse midwives, who attended 56 5 percent of the births in urban areas but only 20 percent of those in rural areas Finally, there is a very significant difference in the utilization of physicians, who are five times more likely to be the birth attendant in urban versus rural locations

In addition to mother's age and location, her level of education is also a significant determinant of her use of health care providers during the perinatal period Table 3 7 presents data on the source of prenatal care for mothers by level of education The most significant and striking difference with respect to levels of education is whether or not the mother received prenatal care As a group, mothers with no education had the least prenatal care—a full 45 percent of these mothers received no prenatal care services Mothers with some primary education had considerably higher levels of utilization, with some 25 percent of these mothers receiving prenatal care services Thus, the difference between no education and some primary education is quite significant in determining whether or not prenatal care is received By scanning the data in the first column, we can see that the percentage of mothers receiving no prenatal care drops continuously and significantly as the level of educational attainment increases Mothers who completed middle school were the most likely to receive care, with only 7 7 percent of this group receiving no prenatal care As with the urban and rural data, we also see significant differences with respect to private hospital and private doctor utilization Those women with higher levels of educational attainment tended to utilize private hospitals and private doctors and midwives more than women with lower levels of education, who tended to rely more heavily on the puskesmas and the puskesmas pembantu

Table 3 6

Health Care Provider Attending Birth, by Urban-Rural Location (1988-1993)

	Physician	Midwife	Nurse	Traditional Birth Attendant	Other
Urban	11 4%	56 5%	1 0%	26 6%	3 9%
Rural	2 3%	19 8%	0 7%	70 6%	6 0%
Overall	4 9%	30 3%	0 8%	58 0%	5 4%

Source IFLS Survey

Table 3 7

Source of Prenatal Care by Mother's Education (1988-1993)

	None	Public Hospital	Private Hospital	Puskesmas / Puskesmas Pembantu	Private Doctor Office/Clinic	Private Midwife Office/Clinic	Traditional Birth Attendant Office	Other
None	45 4%	2 5%	0 2%	25 7%	0 5%	11 4%	7 5%	4 6%
Some Primary	25 2%	2 7%	1 2%	41 9%	1 2%	18 5%	3 5%	5 1%
Complete Primary	11 6%	2 7%	1 5%	45 6%	3 7%	21 7%	1 9%	7 5%
Some Middle	9 5%	5 2%	4 7%	22 6%	9 0%	33 0%	1 8%	13 6%
Complete Middle	7 7%	4 6%	6 2%	31 0%	12 4%	29 3%	0 6%	7 2%
Overall	21 1%	3 1%	2 2%	37 2%	4 2%	20 9%	3 1%	6 3%

Source IFLS Household Survey

Table 3 8 presents data on location of birth by education The most significant effect is with respect to whether or not women undertake childbirth at home Women with no formal education delivered 9 out of 10 babies in their own homes, while women who had completed middle school delivered at home less then half the time In general one can see from this table that as education level of the mother increases, the reliance on more modern types of health care providers also increases

Table 3 8

Location of Birth by Mother's Education (1988-1993)

	Own Home	Public Hospital	Private Hospital	Puskesmas / Puskesmas Pembantu	Private Doctor Office/Clinic	Private Midwife Office/Clinic	Traditional Birth Attendant Office	Other
None	89 0%	1 7%	0 3%	0 9%	0 8%	3 2%	1 0%	1 5%
Some Primary	85 3%	2 1%	1 5%	1 5%	0 6%	5 9%	0 7%	2 2%
Complete Primary	72 9%	2 8%	2 9%	3 0%	1 4%	14 2%	0 7%	1 8%
Some Middle	51 1%	15 2%	5 9%	5 0%	2 5%	16 8%	1 2%	2 4%
Complete Middle	41 3%	13 1%	9 9%	4 6%	3 6%	24 6%	0 5%	1 9%
Overall	7 3%	4 8%	3 4%	2 5%	1 5%	11 6%	0 7%	1 9%

Source IFLS Household Survey

Table 3 9 presents data on the type of health care provider attending the birth In general, the traditional birth attendant is the most commonly used provider, attending 58 percent of all

births One can see significant differences, however, by mother's level of educational attainment Women with higher education tended to rely much more on physicians and midwives, while women with less education tended to rely much more heavily on traditional birth attendants

We have constructed a final table, Table 3 10, to gain some insight into the staffing patterns for births at different locations The most common combination is the traditional birth attendant in the woman's home, where 74 percent of the births were attended by the traditional birth attendant Overall, we see that physicians and midwives are used much more extensively in hospitals, puskesmas and physicians' offices However, it is interesting to note that in the physician's office, the physician is the attending provider in only slightly more than half of the cases, while a nurse midwife is used 42 percent of the time The same pattern applies to public and private hospitals, where the physician is the attendant about 35 to 40 percent of the time and midwives (and nurses to a much lesser extent) are used the remainder of the time These findings suggest that women going to the hospital or physician's office don't necessarily demand that the physician be the primary attender to the birth but that they feel more secure in those locations, knowing that the physician is available if needed Finally, we can see in slightly more than 10 percent of the cases the physician is the attendant in the puskesmas, while over 80 percent of the time deliveries in the puskesmas are attended by nurse midwives

Table 3 9

Health Provider Attending Birth by Mother's Education (1988-1993)

	Physician	Midwife	Nurse	Traditional Birth Attendant	Other
None	0 7%	8 1%	0 4%	84 9%	4 2%
Some Primary	1 3%	20 0%	1 4%	72 6%	4 4%
Complete Primary	4 0%	35 5%	0 3%	54 2%	5 8%
Some Middle	16 1%	45 4%	1 4%	34 3%	2 9%
Complete Middle	13 9%	58 1%	0 8%	18 4%	8 2%
Overall	4 9%	30 3%	0 8%	58 1%	5 4%

Source IFLS Survey

B Health Insurance Coverage

In this section we summarize patterns of health insurance coverage and health services utilization in Indonesia The primary objective of this section is to provide detailed empirical

documentation on the level and patterns of health insurance coverage in the population In addition, we examine demographic, socioeconomic and health status characteristics of the insured population and the effects of health insurance coverage on health care utilization and expenditures Finally, we present some statistics which help to clarify the implications of health insurance for government policy

Many health policymakers are looking forward to the expansion of both public and private sector health insurance as an important source of revenue and resources for ongoing development, expansion, and improvement of the health sector in Indonesia For these reasons, the data presented in this section of the report, which are drawn from the IFLS, represent an important area for future policy analysis

Table 3 10

Health Provider Attending Birth by Location of Birth (1988-1993)

Location	Health Providers				
	Physician	Midwife	Nurse	Traditional Birth Attendant	Other
Home	0 1%	18 5%	0 7%	74 1%	6 6%
Public Hospital	40 5%	54 3%	3 3%	0 0%	1 9%
Private Hospital	34 4%	60 2%	2 7%	0 5%	2 2%
Puskesmas	13 6%	80 8%	3 2%	0 0%	2 4%
Physician Office	53 0%	42 4%	1 5%	0 0%	3 0%
Midwife Office	2 4%	96 2%	0 8%	0 0%	0 6%
Traditional Practice	0 0%	2 5%	0 0%	97 5%	0 0%
Other	1 1%	36 4%	1 1%	53 4%	8 0%
Overall	6 4%	37 4%	1 1%	49 4%	4 9%

Source IFLS Survey

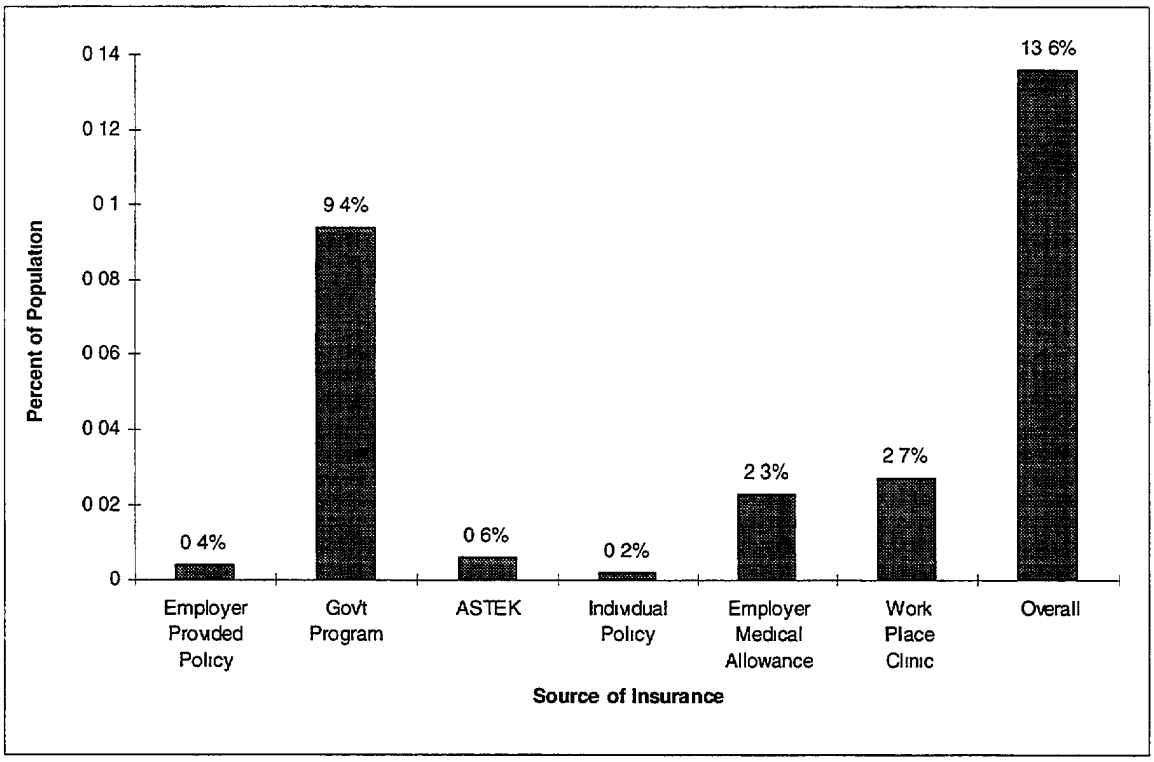
Figure 3 1 provides summary statistics on the distribution of health insurance coverage by source of coverage Overall, 13 6 percent of the population was covered by health insurance during the IFLS study period The largest provider of health insurance coverage is the ASKES program for government workers, which covers 9 4 percent of the population [17] The second

[17] The ASKES program covers a total of 14 million Indonesians or between 7-8 percent of the total population The estimate of 9 8 percent reported above reflects an oversampling of ASKES members The IFLS sampling

largest source of health insurance coverage is workplace clinics, which are often on-site facilities for employees Another important source of health insurance, which covers 2 3 percent of the population, is employer medical allowance payments These often represent reimbursement to employees (either full or partial payment) for incurred medical expenses ASTEK, the government-mandated social insurance program, covers only 0 6 percent of the population Finally, private employer-provided and individual policies together cover less than 1 percent of the population

Figure 3 1

Health Insurance Coverage by Source



IFLS Survey

Table 3 11 provides data on health insurance coverage by source and residence As can be seen in this table, urban residents have much higher rates of coverage than do rural residents A full 25 2 percent of the population in urban areas have some kind of health insurance coverage For rural areas the coverage rate is 7 1 percent, indicating a significant gap in health insurance coverage between urban and rural areas The urban/rural difference trend holds regardless of source of coverage Table 3 12 presents data on health insurance coverage by source and gender In this case we see very little difference by source when comparing males and females, indicating that both men and women are apparently provided similar types of coverage regardless

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frame excludes the more sparsely populated provinces which contain a disproportionately small share of civil servants

of their work status Future analysis could be designed to look at this issue more directly by investigating employment patterns by gender in relation to health insurance coverage

Table 3 13 provides data on adult health insurance coverage by source and level of educational attainment One can note by looking at the last column of this table that as educational attainment increases, the level of health insurance coverage also increases For example, the population with no formal education has only 3 6 percent coverage rate while those with the highest level of educational attainment, more then middle school, have a health insurance coverage rate of almost 40 percent This same pattern prevails regardless of the source or employment status those with higher levels of education tend to have much higher levels of insurance coverage Table 3 14 provides data on health insurance coverage by source and age In the case of age we see the overall coverage rate is 13 6 percent, but if we look across the different age categories the lowest rate is 10 9 percent (for the 0-4 age group) while the maximum is only 18 2 percent (for those 30-49 years old) This finding is consistent with expectations that the working-age population would have much higher coverage rates because of their higher employment status

Table 3 11

Health Insurance Coverage by Source and Residence

Region	Employer Provided Policy			Individual Policy	Employer-Provided Medical Allowance	Employer Provided / Workplace Clinic	Overall
	Private	Gov't	ASTEK				
Urban	0 7%	15 9%	1 4%	0 4%	5 1%	6 3%	25 2%
Rural	0 2%	5 7%	0 1%	0 1%	0 7%	0 6%	7 1%
Overall	0 4%	9 4%	0 6%	0 2%	2 3%	2 7%	13 6%

Source IFLS Survey

Table 3 12

Health Insurance Coverage by Source and Gender

Gender	Employer Provided Policy			Individual Policy	Employer-Provided Medical Allowance	Employer Provided / Workplace Clinic	Overall
	Private	Gov t	ASTEK				
Male	0 5%	9 6%	0 6%	0 2%	2 5%	2 8%	14 2%
Female	0 3%	9 2%	0 6%	0 1%	2 1%	2 5%	13 1%
Overall	0 4%	9 4%	0 6%	0 2%	2 3%	2 7%	13 6%

Source IFLS Survey

Table 3 13

Health Insurance Coverage by Source and Education

	Employer Provided Policy			Employer Provided	Employer Provided /	
	Private	Gov t*	Individual Policy	Medical Allowance	Workplace Clinic	Overall
None	0 1%	2 8%	0 1%	0 6%	0 4%	3 6%
Some Primary	0 1%	4 3%	0 0%	1 3%	1 1%	5 8%
Completed Primary	0 1%	8 2%	0 3%	1 6%	2 3%	11 2%
Some Middle School	3 0%	11 8%	0 0%	3 3%	4 4%	19 8%
More than Middle School	0 6%	29 5%	0 6%	6 1%	9 5%	38 9%
Overall	0 4%	10 0%	0 2%	2 3%	2 7%	13 6%

* Government includes ASTEK

Source IFLS Survey

Table 3 15 provides data on health insurance coverage for adults by health status We see that with respect to overall insurance coverage there are small differences between those reporting themselves as healthy compared to those reporting themselves as not healthy For example, those reporting themselves as healthy had coverage rates of 17 percent while those reporting themselves as not healthy had coverage rates of 12 4 percent An even smaller difference is exhibited in those reporting themselves ill in the previous four weeks This finding does not support an expectation that those people who are less healthy are more prone to illness and would therefore be more likely to purchase health insurance Such behavior, which is quite prominent in the developed world, appears to be a non-significant factor at this time in Indonesia One possible explanation is that the major source of insurance is from public and private employers, where employees are generally not given an option to exclude themselves Under such a system, the insured population would not be expected to be sicker than the overall population

Table 3 16 provides data on health insurance coverage by source and per capita expenditure quintiles of the household By observing the data in the last column we can see the overall relationship between the household expenditure level and the level of health insurance coverage For the poorest quintile, those in the lowest 20 percent, we see that only 4 2 percent of the population is covered by health insurance, as compared to the wealthiest 20 percent, where a full 32 7 percent of that population is covered If we examine the remainder of the table we see that this pattern tends to hold, that regardless of source of employment or source of health insurance coverage, people with higher household expenditures (or incomes) tend to have higher levels of insurance coverage [18]

[18] The expenditure quintiles are defined by the following Rupiah cutoffs

Poorest Quintile	> 0 and < 22,858
Second Quintile	≥ 22,858 and < 34 477

Table 3 14

Health Insurance Coverage by Source and Age

Age	Employer Provided Policy		Individual Policy	Employer Provided Medical Allowance	Employer Provided / Workplace Clinic	Overall
	Private	Gov t*				
0 4	0 5%	7 0%	0 1%	1 9%	2 0%	10 9%
5 14	0 3%	8 4%	0 2%	1 7%	2 2%	11 8%
15 29	0 3%	9 1%	0 2%	2 9%	3 0%	13 8%
30 49	0 4%	14 5%	0 4%	3 0%	4 2%	18 2%
50+	0 3%	9 4%	0 1%	1 5%	1 2%	11 4%
Overall	0 4%	10 0%	0 2%	2 3%	2 7%	13 6%

Government includes ASTEK

Source IFLS Survey

Table 3 15

Adult Health Insurance Coverage by Health Status

	Employer Provided Policy		Individual Policy	Employer Provided Medical Allowance	Employer-Provided / Workplace Clinic	Overall
	Private	Gov t*				
General Health Status						
Healthy	0 4%	12 5%	0 3%	2 7%	3 9%	17 0%
Not Healthy	10 2%	10 2%	0 0%	1 8%	1 8%	12 4%
Illness in Previous 4 weeks						
Ill	0 3%	12 3%	0 2%	2 8%	4 0%	16 9%
Not Ill	0 7%	12 0%	0 3%	2 4%	3 2%	15 7%
Overall	0 4%	10 0%	0 2%	2 3%	2 7%	13 6%

* Government includes ASTEK

Source IFLS Survey

Third Quintile $\geq$ 34,477 and < 49 965
Fourth Quintile $\geq$ 49 965 and < 79 120
Wealthiest Quintile $\geq$ 79,120

Table 3 16

Health Insurance Coverage by Source and Per Capita Expenditure Quintiles

Per Capita Expenditure Quintile	Employer Provided Policy		Individual Policy	Employer Provided Medical Allowance	Employer-Provided / Workplace Clinic	Overall
	Private	Gov't*				
Poorest Quintile	0 0%	3 1%	0 0%	0 4%	0 8%	4 2%
2nd Quintile	0 1%	4 3%	0 0%	1 1%	0 8%	6 0%
3rd Quintile	0 1%	7 2%	0 1%	1 9%	2 0%	10 0%
4th Quintile	0 4%	14 2%	0 2%	3 3%	3 0%	18 9%
Wealthiest Quintile	1 3%	23 9%	0 6%	5 5%	7 6%	32 7%
Overall	0 4%	10 0%	0 2%	2 3%	2 7%	13 6%

* Government includes ASTEK

Source IFLS Survey

C Health Services Utilization

Figure 3 2 presents data on monthly outpatient visit rates by gender and age The visit rate with respect to age is approximated by a "u-shaped" curve, with the population at the lower end of the age scale having a much higher visit rate (in the range of 5 visits per person per month) while those in the middle years, ages 5 to 49, have a much lower rate (ranging from 17 to 35 visits per person per month) As age increases, one can observe that the visit rates also go up, although still remaining below the level of the youngest age group There are only small differences in male versus female rates, except for the age group 20-49, where females have almost twice the visit rates of males

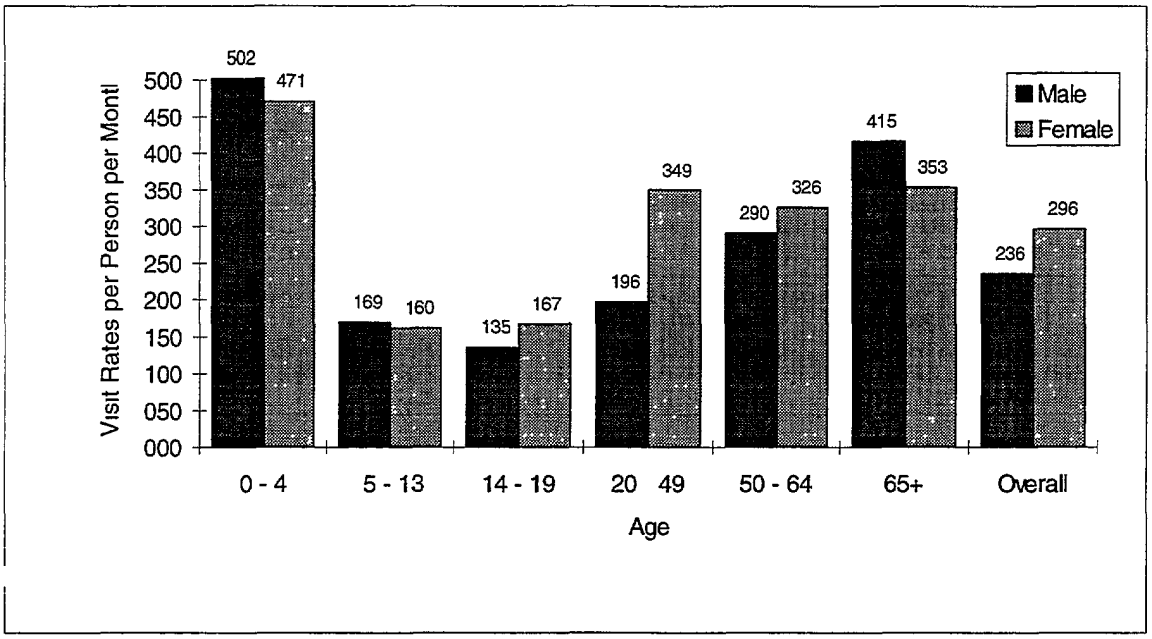
Figure 3 3 presents data on outpatient visit rates by expenditure quintile and gender As one can see from this figure, outpatient visit rates increase with expenditure levels of the household The poorest households exhibit the lowest rate of outpatient visits, while the wealthiest quintiles exhibit the highest Again, there is not much significant difference between males and females, although females do have slightly higher visit rates across all expenditure quintiles

Figure 3 4 presents data on the relationship between outpatient visit rates, gender and health insurance status What is striking about this figure is the significant relationship between health insurance status and monthly outpatient visit rates For both males and females, the presence of health insurance leads to a much greater outpatient visit rate than for males or females without health insurance It is clear that the presence of health insurance significantly increases utilization and access to health services Figure 3 5 examines the relationship between outpatient visit rates, health insurance status and utilization of different providers The overall effect of

health insurance is to raise the utilization of all different types of providers, public, private and traditional The most significant effect is in the private sector

Figure 3 2

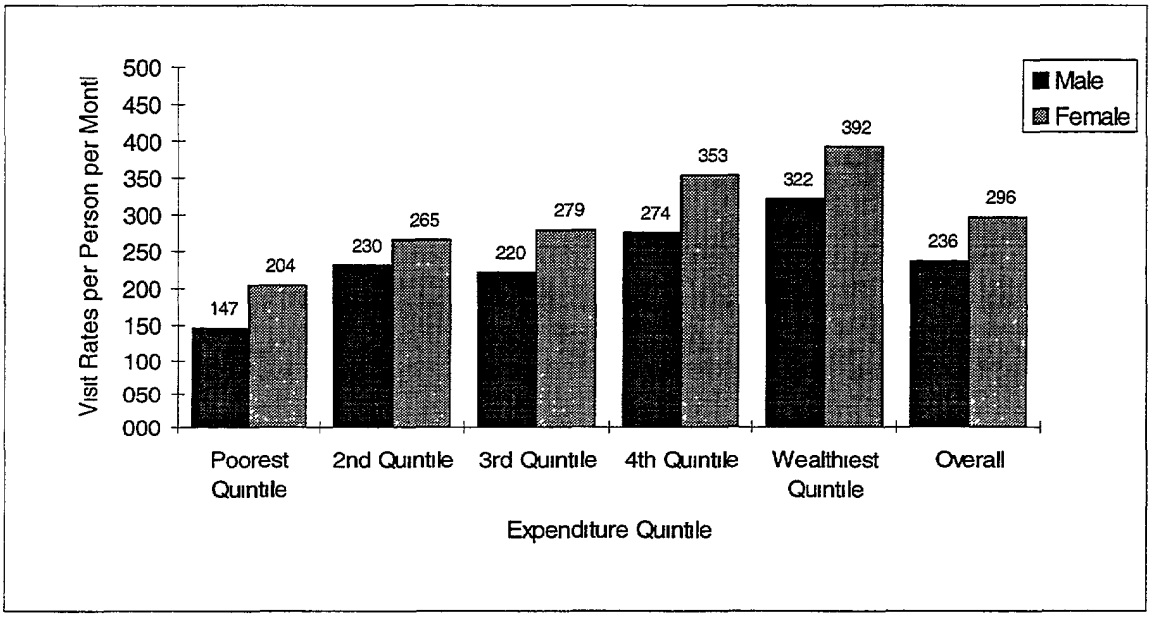
Outpatient Visit Rates by Gender and Age



Source IFLS Survey

Figure 3 3

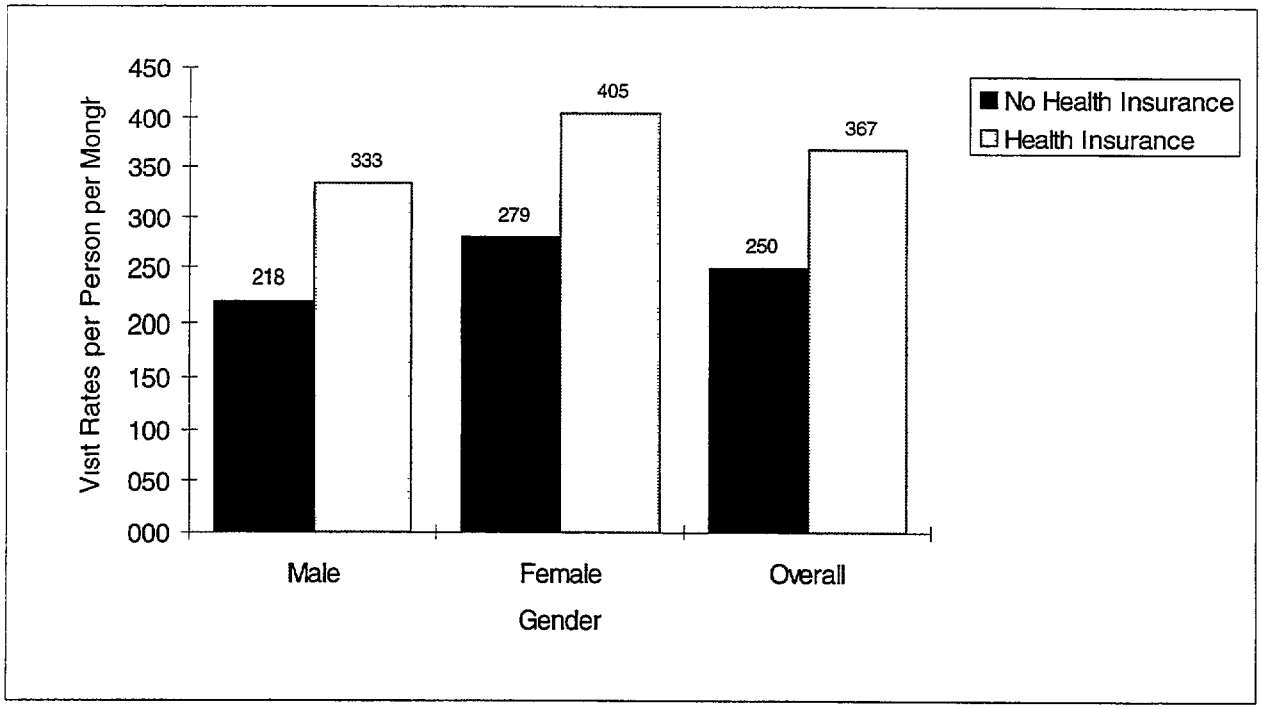
Outpatient Visit Rates by Per Capita Expenditure Quintile and Gender



Source IFLS Survey

Figure 3 4

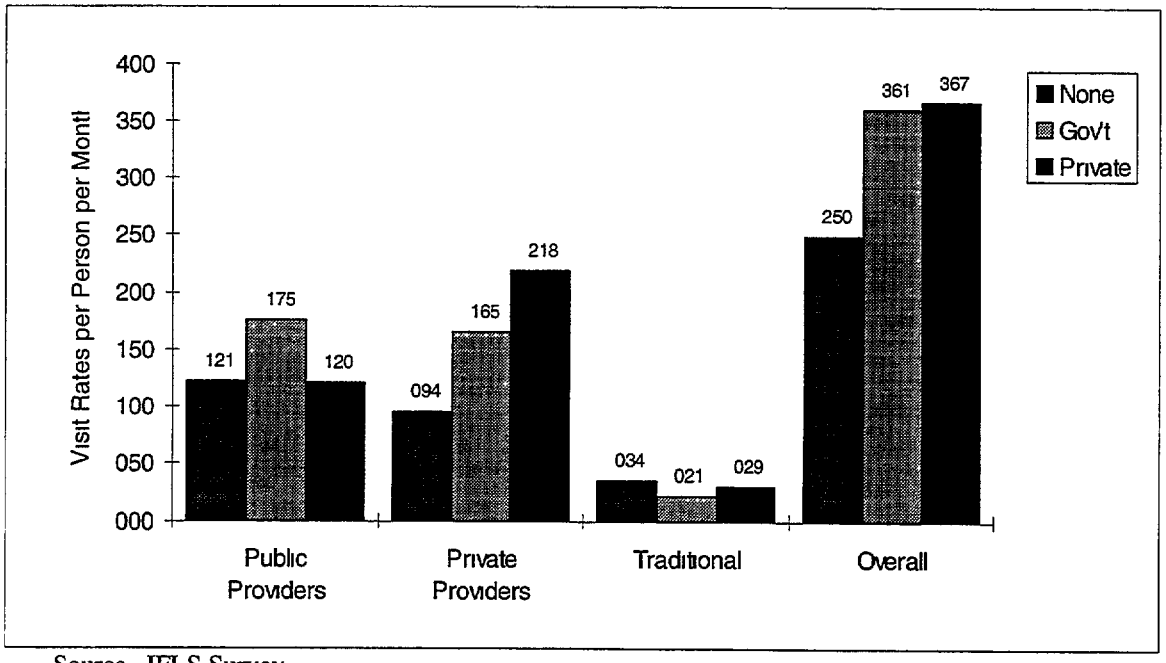
Outpatient Visit Rates by Gender and Health Insurance Status



Source IFLS Survey

Figure 3 5

Outpatient Visit Rates by Insurance Status

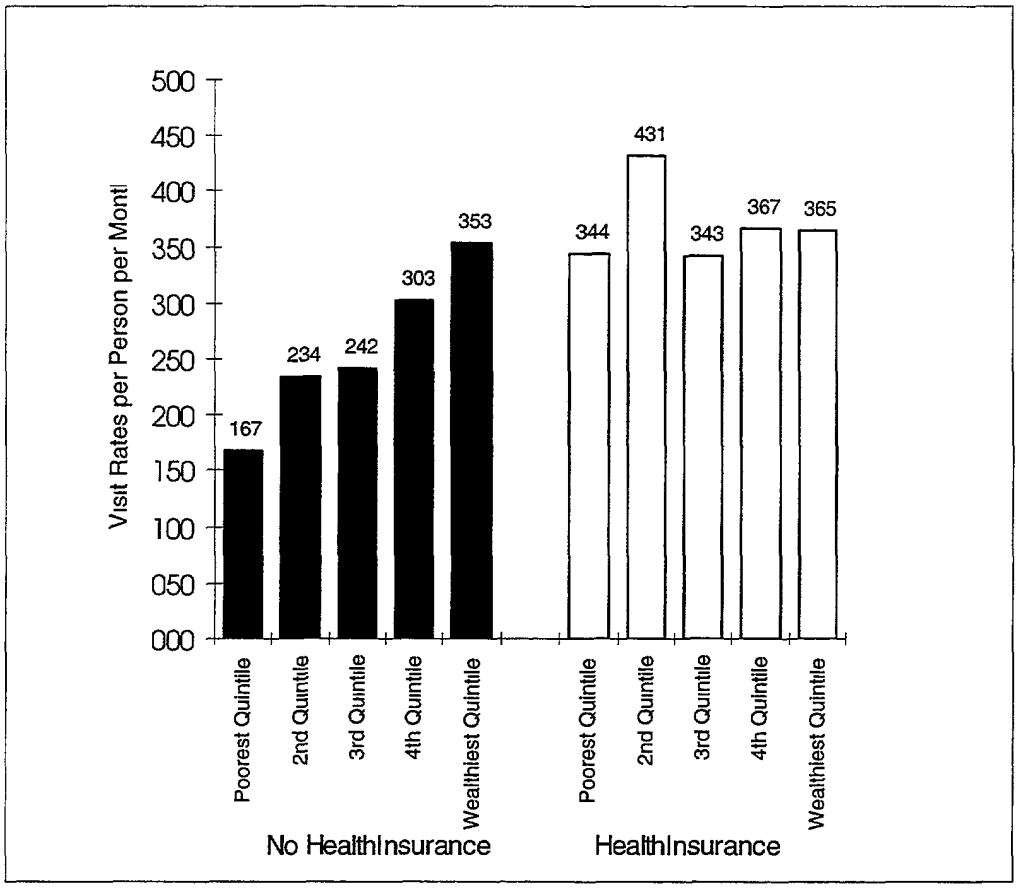


Source IFLS Survey

Figure 3 6 presents data on outpatient visit rates by household expenditure quintile and health insurance status When focusing on the left hand portion of this figure, we can observe the data for different households without health insurance by level of household monthly expenditure (income) We can see a significant linear trend, where the poorest households exhibit the lowest levels of outpatient visits and the wealthiest households exhibit the highest By focusing on the right hand portion of this figure, which presents data by expenditure level for households with insurance coverage, we see that utilization is more or less equalized That is, the poorest households have the same level of utilization as the wealthiest households This finding is potentially very important for Indonesia's policymakers because it suggests that expansion of health insurance could be a significant mechanism for improving and equalizing access and utilization to health services across different income groups

Figure 3 6

Outpatient Visit Rates by Per Capita Expenditure Quintile and Health Insurance Status



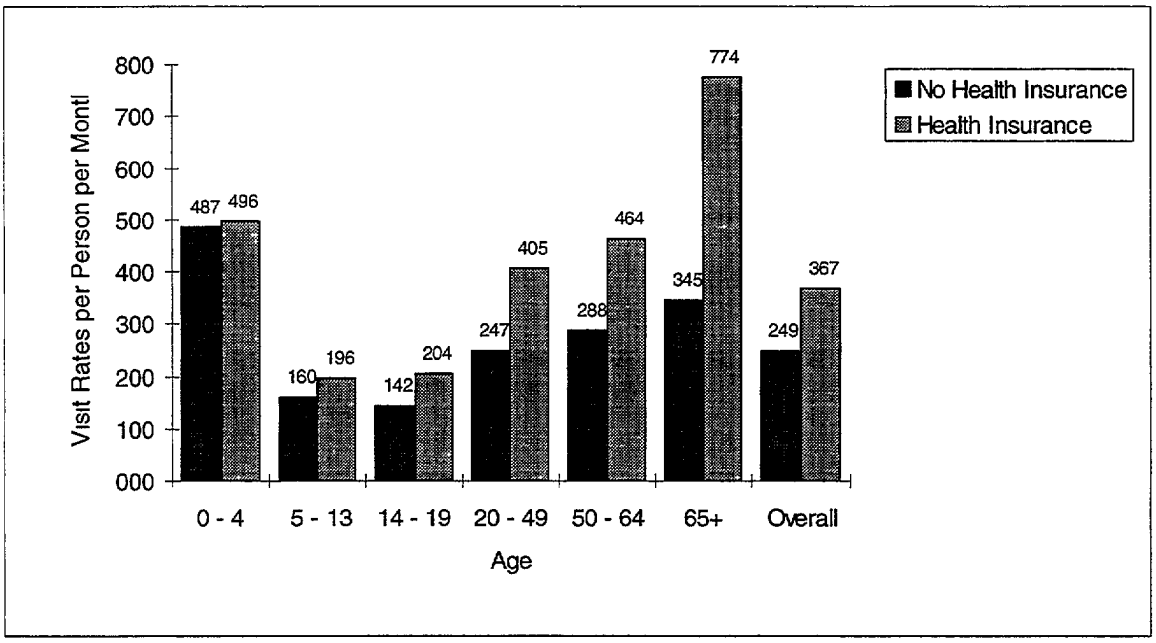
Source IFLS Survey

Figure 3 7 presents outpatient visit rates by age and health insurance status As with the previous figure relating outpatient visit rates to age, one can see that the highest use rates occur for children and the oldest populations The figure also shows that the presence of health insurance raises utilization for all of the age groups An important finding here is the significant

difference in the age-65 and above group where the presence of health insurance more than doubles the utilization of outpatient services Again this suggests an important implication for social policy in Indonesia where the expansion of health insurance to senior citizens could ensure greater access to needed health services as the population ages

Figure 3 7

Outpatient Visit Rates by Age and Health Insurance Status

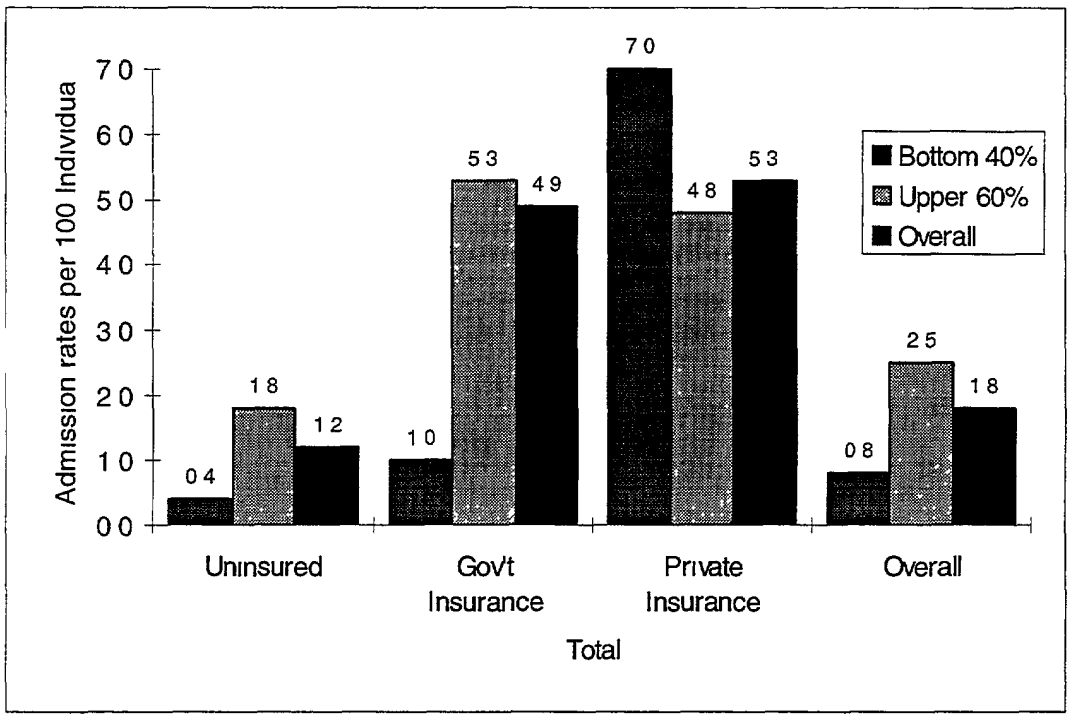


Source IFLS Survey

Figure 3 8 presents data on annual inpatient admission rates per 100 people to hospitals (both public and private) by health insurance status and per capita household expenditure quintile In this figure one can see that the presence of health insurance increases inpatient utilization rates at hospitals dramatically The columns in the right hand portion of this figure summarize the overall utilization rates for different income groups The average overall annual inpatient admission rate is 1 8 admissions per hundred individuals or about 18 per thousand population The annual inpatient admission rate for populations in the upper 60th percentile of the income group is more than 3 times as great as that in the bottom 40 percent income group Focusing on the effects of insurance, one can see the overall inpatient admission rate for the uninsured is 1 2 per 100 or 12 per thousand population The middle set of columns in this figure shows the effects of government insurance and private insurance Those populations covered by government insurance exhibit much higher inpatient admission rates than do the uninsured Those with private insurance have even higher admission rates The effect of insurance is that it increases inpatient admission rates relative to those without insurance These findings suggest a significant contribution that expansion of health insurance could play in terms of increasing access to health services and equalizing access

Figure 3 8

Inpatient Admission Rates at Public and Private Hospitals by Health Insurance Status and Per Capita Expenditure Quintile



Source IFLS Survey

Table 3 17 presents data on annual inpatient admission rates separately for public and private The patterns in this table are similar to those in the previous figure in that the presence of insurance significantly increases utilization of both public and private hospitals The effect, however, is much more significant in public hospitals For example, the overall annual inpatient admission rate for the uninsured population in public hospitals is 1 1 per 100 people However, for the insured population the rate increases to 4 8 per 100 for government insurance and 5 1 per hundred for private insurance This represents almost a 500 percent difference in the inpatient admission rate in public hospitals between the uninsured and insured populations With respect to the different expenditure quintiles, one can see that the most significant effect of private insurance occurs among those with lower incomes admission rates in public hospitals for insured low-income groups are higher than the admission rates for the higher-income groups (6 9 versus 4 5) This is in contrast to government insurance which, while increasing the utilization rate relative to the uninsured, still leaves the bottom 40 percentile of the income group below the upper 60 percentile in terms of admissions (0 1 versus 5 1) Finally, the other interesting fact to note is the relatively low inpatient admission rates for private hospitals compared to public hospitals These low rates suggest that while the private hospital sector has been growing rapidly in recent years, it still occupies a relatively small portion of the total hospital sector in Indonesia, and thus the utilization of these facilities remains a small portion of the total

Table 3 17

Inpatient Admission Rates at Public and Private Hospitals by Health Insurance Status and Per Capita Expenditure Quintile (Per 100 Individuals)

Per Capita Expenditure Quintile	Public Hospital			Private Hospital			Total			
	Insured		Uninsured	Insured		Uninsured	Insured		Uninsured	Overall
	Gov't Insurance	Private Insurance		Gov't Insurance	Private Insurance		Gov't Insurance	Private Insurance		
Bottom 40%	0 1	6 9	0 4	0 0	0 1	0 0	0 1	6 9	0 4	0 8
Upper 60%	5 1	4 5	1 6	0 1	0 3	0.2	5.2	4 8	0 6	2.5
Overall	4 8	5 1	1 1	0 1	0 3	0 1	4 9	5 3	1.2	1 8

Source IFLS Survey

Finally, Table 3 18 provides data on average inpatient health expenditures at public and private facilities by health insurance status and per capita expenditure quintile levels This table presents data on the actual rupiah expenditures for inpatient services It is interesting to note that the average highest inpatient expenditures occur in public hospitals for the upper income insured population It is also interesting to note the significant difference between the average expenditures for the privately insured populations who utilize public providers The lower-income group spent slightly below 400 rupiah per person while the upper income group spent nearly 18,000 rupiah per person for inpatient services at public providers Again it is interesting to note the small level of expenditure for private inpatient hospitals regardless of insurance status As expected, the uninsured population tended to spend much less for inpatient care for private facilities However, we can see that for the insured population, expenditures for private facilities are also quite low, averaging between 300 to 600 rupiah per person for the privately insured and far less for those with government insurance

D Conclusions

In this chapter, we have looked at two aspects of Indonesia's health care system (1) prenatal care and delivery, and (2) health insurance and its implications for health care utilization and expenditures

Several of our findings surrounding prenatal care point to important areas of consideration for the Indonesian health care system For example, mothers in the 35 to 49 year-old age group—who represent the majority of high-risk births—are the very group at greatest risk of not receiving prenatal care Further, women in this age group are the least likely to give birth at a hospital 75 percent deliver at home

In addition to mother's age, we looked at other determinants of perinatal care, including urban versus rural location and mother's education The data showed significant variations in prenatal care and delivery patterns, depending upon the mother's level of education and where she

lived For instance, 45 percent of mothers with no education received no prenatal care, while 25 percent of mothers with some primary education received care In terms of location, nearly 85 percent of all births in rural areas occurred in the woman's home, compared to 44 percent in urban areas

Table 3 18

Average Inpatient Health Expenditure at Public and Private Facilities by Health Insurance Status and Per Capita Expenditure Quintile (Rp)

Per Capita Expenditure Quintile	Public Providers			Private Providers			Total			
	Insured		Uninsured	Insured		Uninsured	Insured		Uninsured	Overall
	Gov t Insurance	Private Insurance		Gov t Insurance	Private Insurance		Gov t Insurance	Private Insurance		
Bottom 40 /	1 294	389	1 056	0	337	22	1,294	725	1 078	**1 065**
Upper 60 %	11 496	17 983	8 086	158	609	373	11 654	18 592	8 459	**9,987**
Overall	10 565	13 900	4 867	143	546	212	10 708	14 446	5 080	**6,277**

Source IFLS Survey

As noted in the preceding chapter, these descriptive analyses provide many interesting insights, but they also point to the need for more analytical multivariate research In the case of mother's education, for example, it is important to bear in mind that there is often a high correlation between education and income Thus it is possible that some of the educational effect observed in this chapter may be related to income Policy analysts in Indonesia and elsewhere need to conduct multivariate studies to separate the effects of education and income, so that they can determine the relative contribution of each to differences in utilization

In the second part of this chapter, we examined health insurance The data showed that coverage is currently quite narrow in Indonesia, with only 13 6 percent of the population reporting health insurance coverage However, the data also reveal significant positive effects on utilization and access, suggesting that expansion of health insurance is an important area of potential policy development for Indonesia Over half of those reporting insurance currently have government-sponsored insurance, and it is expected that with the passage of recent legislation in Indonesia mandating health insurance for employees of large companies, the number of people with private insurance will increase dramatically

In terms of the characteristics of people covered by health insurance at this time, it is clear that prime-age adults are more likely to be insured than children or the elderly A surprising finding is that men and women are almost equally likely to have insurance As expected there are large differences in health insurance coverage between urban and rural areas, with urban areas exhibiting much higher levels of coverage The characteristics of individuals with health insurance coverage vary across several dimensions For example, health insurance coverage tends to increase dramatically with level of education Insurance coverage also increases sharply with household expenditure or income levels It is important to note that these two covariates,

education and income, are likely to be related to job status and thus are likely to be related to provision of health insurance benefits as well Finally, it is interesting to note that the insured population tends to be healthier than the uninsured population, which is the opposite of what one would expect if there were significant selection effects and moral hazard under a health insurance program

In terms of the effects of insurance on utilization, we have arrived at several important findings that have significant policy implications Individuals with government-provided health insurance visit public providers much more than do individuals with private insurance or no insurance Individuals with private insurance use both public and private providers more than the uninsured population, and those with private insurance tend to use private providers more then those who have government insurance

Chapter 4

Education

A central component of the Government of Indonesia's (GOI) human resource development policy has been the implementation of compulsory elementary school education Between 1968 and the late 1980's, the net elementary school enrollment rate increased from roughly 50 percent to over 90 percent These gains led to greater equality in elementary school education—that is, greater equality between boys and girls, and between children of different income levels Furthermore, during this same time period, there was a fourfold increase in the net junior secondary school enrollment, which increased from 10 percent to 41 percent [19]

Despite these successes, substantial inequities exist in the enrollment rates at the junior secondary and higher levels, and the general quality of education needs to be improved Therefore, the government is committed to achieving compulsory junior secondary education during the next 15 years This ambitious plan will require innovative policies and programs, which in turn will require innovative policy analyses and new data sources

The IFLS was specifically designed to examine how individuals and families respond to government programs and policies, and, in turn, how government programs affect family and individual welfare The matched household, individual, community and school-level data permit a unique opportunity to examine how demographic and socioeconomic factors interact with education programs to determine enrollment rates, graduation rates, and expenditures for education services In addition, the multipurpose design of the IFLS will also permit looking at interactions between education and other social welfare areas, such as health, labor and family planning

The timing, scope and content of the IFLS make it a valuable data source for helping to reshape Indonesia's education policy The IFLS can serve both as a baseline survey, documenting circumstances prior to the implementation of compulsory junior secondary education, and as a data source for policy analyses that will help the government meet the challenges of expanding junior secondary enrollment and graduation, reducing inequities, and improving the curriculum and quality of schools The descriptive analysis presented in this chapter highlights the potential of the IFLS, while pointing to some important policy issues

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[19] Boediono Walter W McMahon and Don Adams 25-Year Education Goals for Economic and Social Development in Indonesia—Executive Summary in W Boediono W McMahon and D Adams eds *Education Economic and Social Development 25-Year Education Goals and Background Papers for the Second 25-Year Development Plan 1994-2018* Jakarta, Indonesia Center for Information Office of Education and Cultural Research and Development Ministry of Education and Culture

In this chapter we first describe the characteristics of school-aged children in the IFLS sample We then examine patterns of enrollment, including grade failure (which may be an indicator of inequities) and graduation rates This is followed by a discussion of two factors that may relate to enrollment rates, school expenditures, and travel time to school We then conclude with an analysis of indicators of quality within the educational system

A Characteristics of the IFLS Sample

Education information for school-aged children and young adults comes from three separate sections of the IFLS questionnaire

- *Household Roster (Book 1)* Information on the highest school and grade level completed, as well as current enrollment status, is collected in the Household Roster for all household members This roster is also where the names and addresses of all schools which are currently attended by household members are recorded

- *General Adult Questionnaire (Book 3)* Administered to all sampled, adult household members, this questionnaire contains information about each school level ever attended by the respondent The questionnaire inquires about the highest grade completed, grade failures, work while attending school, and school administration In addition, for the current or most recent school attended, respondents were asked about sources of financial assistance, travel time to school, type of flooring in the classroom, approximate number of students in the school and the classroom, average number of hours per day at school, graduation or drop out, school fees and school-related expenditures

- *Child Questionnaire (Book 5)* Each sampled, ever-married, female household member was interviewed about her children less than 15 years of age The questionnaire included the same set of education questions as included in Book 3 [20]

In the analysis that follows, we use the Household Roster data to calculate enrollment rates when we wish to compare enrollment rates across individual or household characteristics We use Book 3/5 data to calculate enrollment rates when we wish to compare enrollment rates of public and private schools Similarly, we use Book 3/5 data for analysis of grade failure, travel times, school expenditures, and other schooling information not available in the Household Roster [21]

Table 4 1 describes the composition of the IFLS sample of school-aged children and young adults by age, gender, residence and per capita expenditure level The table presents both the weighted number of observations for each category, as well as the percentage distribution

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[20] Each sampled, ever-married women was administered up to two Book 5's If a respondent had more than two children less than 15 years old, two children were randomly selected These selection probabilities are incorporated into the children s sample weights

[21] We use the Household Roster data whenever possible because its larger sample size results in smaller standard errors of the sample means

These are provided separately for all household members (i e , from the Household Roster) and for Book 3/5 respondents

Table 4 1

Distribution of School-Aged Children In IFLS Sample

	Household Sample		Book 3/5 Sample	
	Weighted N's	Percentage	Weighted N's	Percentage
Age				
7-12	4873 7	37 3	4574 5	39 6
13-15	2328 7	17 8	2044 6	17 7
16-18	2031 8	15 6	1846 2	16 0
19-25	3814 6	29 2	3096 9	26 8
Total	13048 8	100 0	11562 2	100 0
Gender				
Female	6643 8	50 9	5955 8	51 5
Male	6405 0	49 1	5606 4	48 5
Total	13048 8	100 0	11562 2	100 0
Residence				
Urban	4935 0	37 8	4231 8	36 6
Rural	8113 8	62 2	7330 4	63 4
Total	13048 8	100 0	11562 2	100 0
Per Capita Expenditure Quintile				
Poorest Quintile	2887 2	22 1	2416 5	20 9
Second Quintile	2677 5	20 5	2239 2	19 4
Third Quintile	2632 9	20 2	2367 2	20 5
Fourth Quintile	2501 7	19 2	2286 4	19 8
Wealthiest Quintile	2317 8	17 8	2249 1	19 5
Total	13048 8	100 0	11562 2	100 0

The total weighted-sample size from the Household Roster is 13,049 individuals Of these, 37 3 percent are 7 to 12 years old, 17 8 percent are 13 to 15 years old, and 15 6 percent are 16 to 18 years old The sample contains nearly equal numbers of males and females Sixty-two percent of the study population resides in rural areas Roughly 43 percent of the sample are from the two poorest quintiles of the expenditure distribution, while 18 percent are from the wealthiest quintile [22] This distribution of per capita expenditures is consistent with recent findings from the

[22] The monthly expenditure quintiles are defined by the following Rupiah cutoffs

Poorest Quintile	> 0 and < 22 858
Second Quintile	≥ 22 858 and < 34 477
Third Quintile	≥ 34 477 and < 49 965
Fourth Quintile	≥ 49,965 and < 79 120

1992 SUSENAS that children are disproportionately represented in the poor and near-poor populations, indicating that poorer households have on average more children [23]

The total weighted sample from Books 3 and 5 is 11,562, or 89 percent of the Household Roster sample size The distribution of school-aged children in Books 3 and 5, however, is not different from that of the Household Roster

B Definition of Enrollment Rates

In this report, we use two definitions of enrollment rates age-specific and net An age-specific enrollment rate is defined as the proportion of children in a certain age-group who are enrolled in school at any level We have calculated age-specific enrollments for four different age groups *elementary* school ages, 7 to 12 years old, *junior secondary* school ages, 13 to 15 years old, *senior secondary* school ages, 16 to 18 years old, and *post secondary* school ages, 19 to 25 years old

A net enrollment rate is defined as the proportion of children in a certain age group who are enrolled in school at a level appropriate for that age group For example, the net enrollment rate for elementary school aged children (7 to 12 years old) is the proportion of children age 7 to 12 years who are enrolled in elementary school We have calculated net enrollment rates for the same four age groups used for age-specific enrollment rates

By definition, the age-specific enrollment rates are always larger than net enrollment rates There are several behavioral reasons why net rates are lower than age-specific rates (1) delays in entering elementary school, (2) grade repetition, (3) temporary withdrawal from school, and (4) skipping grades and graduating early In summary, age-specific enrollment rates are an indication of how many children are receiving an education, but unlike net enrollment rates, they are not sensitive to whether children are progressing through school at the expected pace

C Patterns of School Enrollment Rates

In this section, we examine the pattern of school enrollment rates by gender, residence, per capita expenditure and school administration This analysis documents many of the accomplishments of the government's education policies, especially for elementary school, and highlights some of the existing disparities between subpopulations

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Wealthiest Quintile $\geq$ 79,120

[23] " Poverty Analysis and Policy Formulation Targeting Poverty with Economic and Nonmonetary Measures from the 1992 SUSENAS ' Santa Monica Calif RAND, 1994

The government's policy of compulsory elementary school education has successfully elevated the enrollment rates of children 7 to 12 years old, but enrollment rates at higher levels of schooling are still lagging behind The higher the level of schooling the smaller the proportion of children enrolled Table 4 2 shows the age-specific enrollment rate for elementary school aged children is 0 92, which is 27 percent higher than the 0 67 rate for junior secondary aged children and 55 percent higher than the 0 412 rate for senior secondary aged children

Table 4 2

Age-Specific and Net Enrollment Rates by Level

Age Groups	Age Specific	Net Enrollment
7-12	0 922	0 877
13-15	0 670	0 453
16-18	0 412	0 308
19-25	0 082	0 046

Source IFLS Survey - Roster Data

These enrollment rates indicate that at each higher level of schooling, the students become a more and more select group Numerous factors are likely to influence this selection process, such as school accessibility, cost and quality, family incomes and preferences for education, and children's innate abilities These same factors also influence the gap between age-specific and net enrollment rates As Table 4 2 shows, the net enrollment rate for children 7 to 12 years old is 0 877, only about 5 percent lower than the age-specific enrollment rate For children aged 13 to 15 years, the net enrollment is about 32 percent lower than the age-specific rate, but for children 16 to 18 years old, this gap declines to 25 percent

1 Enrollment Rates and Per Capita Expenditures

Families' incomes are an important determinant of whether children are enrolled in school Higher-income families can more easily afford to pay school fees and other school-related costs Further, poor families may rely more on the work and earnings of their children, resulting in higher opportunity costs associated with school attendance Figure 4 1, which presents the relationship between per capita household expenditures (as a measure of income) and age-specific school enrollment rates, shows an increasingly strong income effect with each higher level of schooling

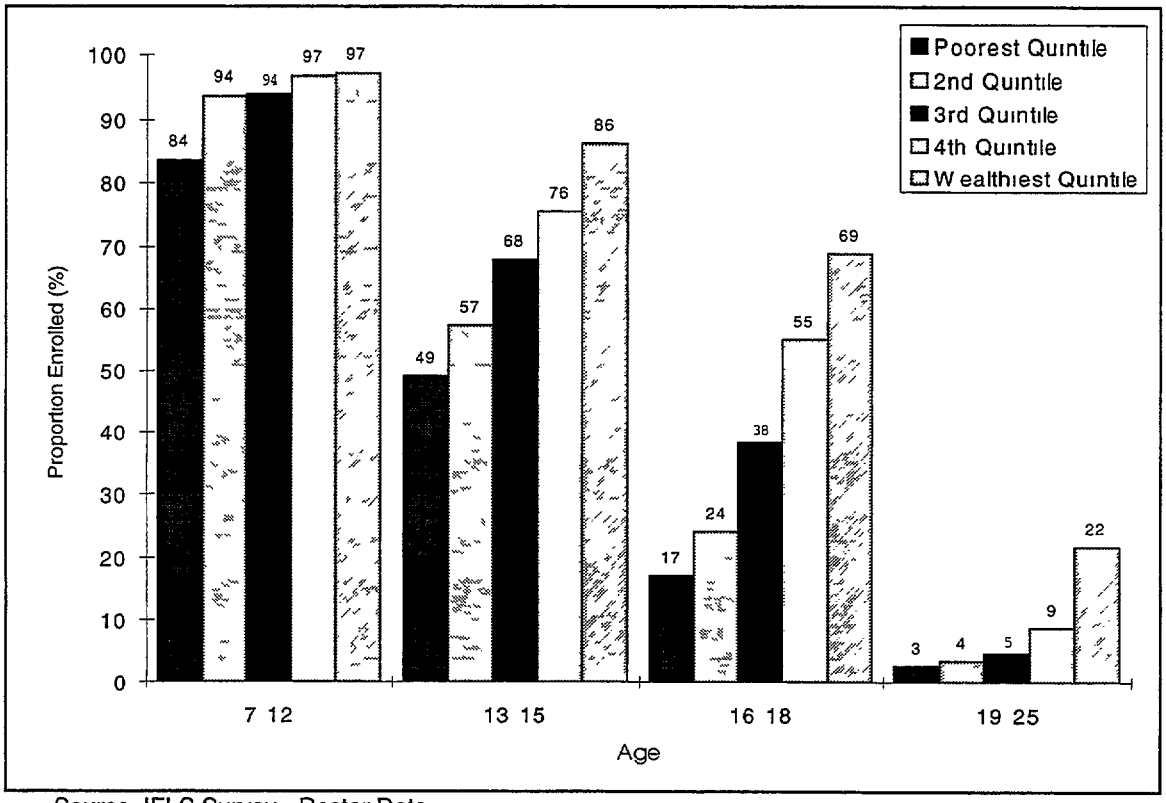
For elementary school aged children, the effect of income on enrollment rates appears to be significant only for the poorest 20 percent of the population [24] For children 13 to 15 years old,

[24] Although there is only a small income effect on elementary school enrollment rates these bi-variate tables do not adjust for quality There may be a much stronger income effect for enrollment in higher quality schools

age-specific enrollment rates rise sharply throughout the income distribution For example, the enrollment rate of children from the wealthiest quintile is 0 863, which is 76 percent higher than the 0 491 enrollment rate of the poorest quintile For children 16 to 18 years old, the enrollment gap between the poorest and wealthiest quintiles is even larger—a four fold difference These differences suggest that the expense and accessibility of secondary schools may adversely affect lower-income populations' enrollment in school This issue is explored in greater detail later in this chapter

Figure 4 1

Age-Specific Enrollment Rates by Per Capita Expenditure Quintile



Source IFLS Survey - Roster Data

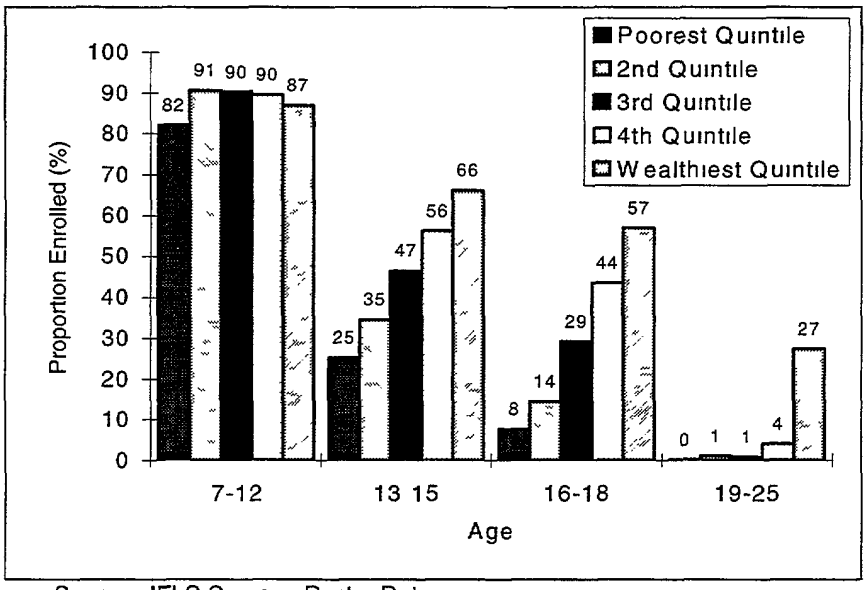
Figure 4 2 indicates that the income effects persist for net enrollment rates and, in fact, are even stronger among children in the three higher age groups For example, for 13 to 15 years olds, the net enrollment rate among the wealthiest quintile is 0 662, which is 160 percent higher than the net enrollment rate of children from the poorest quintile, 0 252 This same gap increases to almost 700 percent for children 16 to 18 years old Further, only 1 percent of young adults from the bottom 40 percent of the expenditure distribution are enrolled in post secondary education These findings indicate that not only are poor and low-income children less likely to be enrolled in school, but that they progress through school at a slower pace than higher-income children This slower progression through school may result from starting school at an older age, failing and repeating grades, or temporarily withdrawing from school

2 Enrollment Rates, Per Capita Expenditure and Residence

Urban enrollment rates are higher than rural enrollment rates, and this difference increases with the level of schooling For example, urban and rural age-specific enrollment rates for 7 to 12 year old children are 0 962 and 0 901, and urban and rural rates for children 13 to 15 years old are 0 803 and 0 593

Figure 4 2

Net Enrollment Rates by Per Capita Expenditure Quintile



Source IFLS Survey - Roster Data

Differences in the direct and indirect costs of children's education may partially explain the urban and rural difference in enrollment rates Children in rural areas have less access to schools (i e , higher travel times and travel costs), and rural families rely more on their children's labor [25] On the other hand, families' preferences for education and the rate of return to education may vary between urban and rural communities Further, school quality may differ between urban and rural areas, affecting the rates of return to education, as well as overall perceptions of the value of education For each of these possible explanations, it seems likely that the rural poor may be more severely affected than the rural nonpoor For example, if the poor families are more price sensitive to the schooling costs, then higher transportation costs would cause them to enroll proportionally fewer of their children than the nonpoor

To better understand the urban-rural enrollment rate differences, we plotted urban and rural age-specific enrollment rates by per capita expenditure quintiles (see Figure 4 3) In this figure, we have connected the quintiles' enrollment rates by a line to more easily see existing trends The top two lines are the urban and rural enrollment rates for children 7 to 12 years old

[25] Data documenting these points are presented later in this chapter

These lines illustrates three important points First, there is essentially no difference in the urban enrollment rates across expenditure quintiles, poor, urban children attend school at nearly the same rate as nonpoor, urban children Second, rural children from the top four quintiles attend school at nearly identical rates as their urban counterparts Finally, only poor, rural children have lower enrollment rates Therefore, almost all of the difference in enrollment rates for poor children 7 to 12 years old is due to lower enrollment rates of poor, rural children This finding has important equity and targeting implications

The middle two lines of Figure 4 3, which represent urban and rural age-specific enrollment rates for children 13 to 15 years old, reveal several important findings First, 13 to 15 year old urban children from the poorest 40 percent of the expenditure distribution have substantially lower enrollment rates than urban children from the three top quintiles Second, enrollment rates do not increase with expenditure level for urban children from the top three quintiles, all are approximately 0 86 Third, enrollment rates among rural children from the two poorest quintiles are much lower than their urban counterparts Finally, rural enrollment rates for the three top quintiles increase with higher per capita expenditures, so that rural children from the wealthiest quintile have enrollment rates nearly equal to their urban counterparts These findings indicate that the government's program mandating compulsory junior secondary education will have to make special efforts to increase enrollment rates among (1) poor and near-poor urban children, (2) poor and near-poor rural children, and (3) middle income rural children

Finally, although lower, the pattern in age-specific enrollment rates for 16 to 18 year-old children is quite similar to that of 13 to 15 year-old children, with one exception Enrollment rates for urban children from the middle income groups increase sharply with income

3 Enrollment Rates and Gender

There is much concern in developing countries about gender disparities in educational attainment Indeed, in many low-income countries families are investing less in the education of their daughters than their sons, resulting in much higher enrollment and graduation rates for boys than girls Furthermore, these disparities often increase sharply in the higher school levels At the same time, many developing countries have made substantial progress in narrowing or eliminating these gender differences [26]

In Indonesia, gender differences have declined sharply in recent years, especially for junior- and secondary-aged children In 1978, for example, 13 to 15-year-old boys from the poorest 40 percent of the income distribution were 33 percent more likely to be enrolled in school than 13 to 15 year-old girls from the same income distribution By 1987, these boys were only 8 percent more likely to be enrolled in school than their female counterparts [27]

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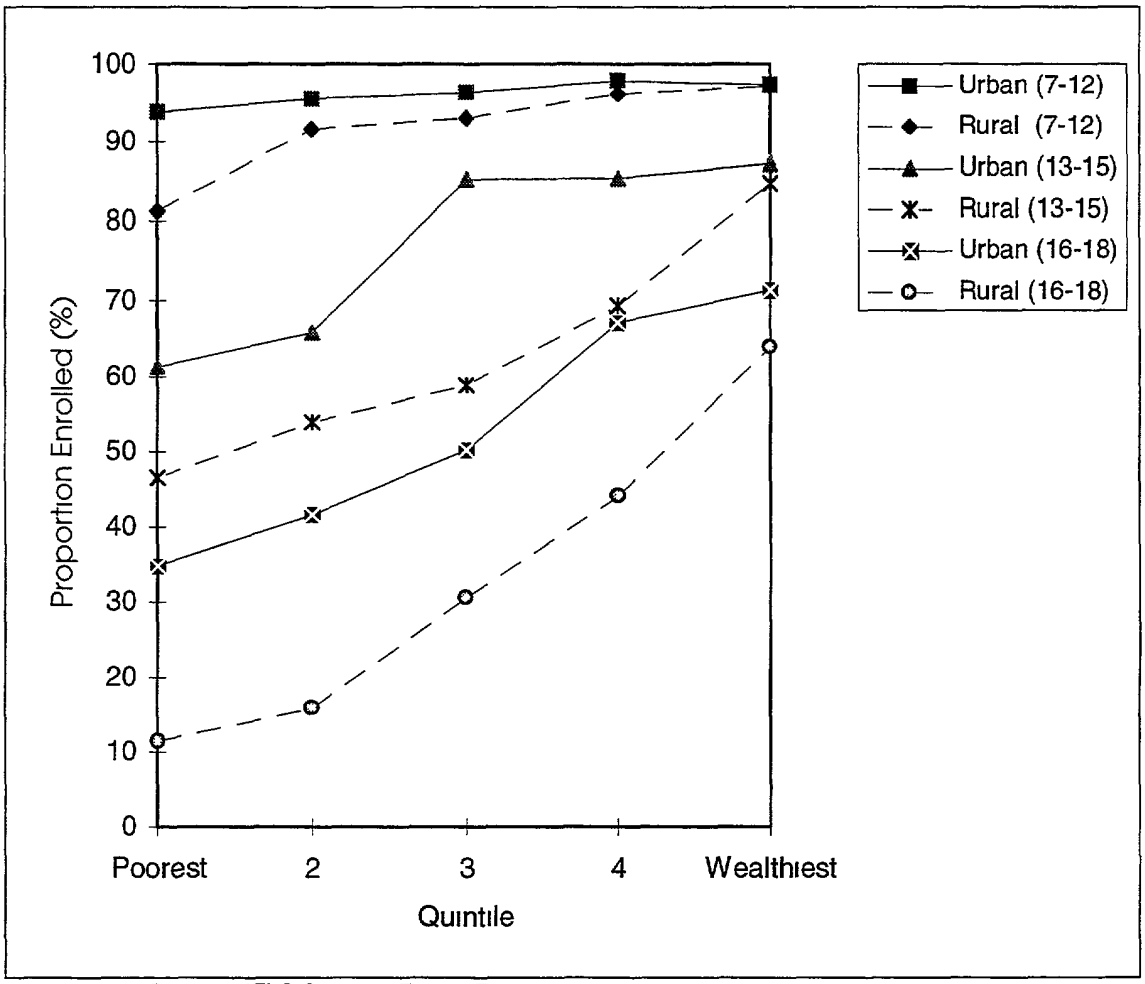
[26] World Bank, *World Development Report 1994* New York Oxford University Press 1994

[27] World Bank *Indonesia Public Expenditures Prices and the Poor* Washington, D C 1993

Figure 4 3

Age-Specific Enrollment Rates by Residence and Per Capita Expenditure Quintile



Source IFLS Survey - Roster Data

In this section, we look at enrollment rates by gender and per capita expenditures, which represent one set of indicators for identifying possible gender differences (In later sections we will examine other indicators) Controlling for expenditure levels is important because one expects the likelihood of gender bias to be higher among lower-income families Such families are more likely to face resource constraints that may force them to choose which of their children are to be educated Whether these decisions are based on cultural beliefs or real returns to education, lower-income families are more likely to demonstrate gender bias than are higher-income families

Table 4 3 indicates that for children 7 to 12 years old, male and female enrollment rates are essentially equal, 0 927 versus 0 917 Further, there are no significant gender differences across the expenditure quintiles, even for the poorest quintile Yet gender differences do exist for children 13 to 15 and 16 to 18 years old The 13 to 15 year-old age-specific rate for males is 0 694, while for females it is 0 645 The gender differences across the expenditure quintiles display an interesting pattern The largest gap is for the poorest quintile, for whom the male rate is about 35 percent higher than the female rate The gap disappears for the middle-income

groups, and then re-emerges for the highest income group For the wealthiest quintile, the male rate is 17 percent higher than the female rate 28 A similar pattern exist in the 16 to 18 year-old enrollment rates, except a large gap also appears in the fourth quintile as well as the wealthiest Thus, the gender patterns for secondary schools do not conform to expectations that gender differences are more likely to occur when families' resources are more limited Multivariate analysis might help explain this pattern

Table 4 3

Age-Specific Enrollment Rates by Gender and Per Capita Expenditure Quintile

	Poorest	2	3	4	Wealthiest	Total
7-12 years old						
Male	0 848	0 926	0 946	0 974	0 982	0 927
Female	0 826	0 926	0 936	0 963	0 962	0 917
Total	0 837	0 926	0 941	0 968	0 972	0 922
13-15 years old						
Male	0 562	0 581	0 674	0 757	0 935	0 694
Female	0 415	0 564	0 682	0 758	0 801	0 645
Total	0 491	0 573	0 678	0 757	0 863	0 670
16-18 years old						
Male	0 249	0 269	0 420	0 601	0 758	0 465
Female	0 096	0 216	0 352	0 496	0 625	0 361
Total	0 171	0 242	0 384	0 550	0 690	0 412

Source IFLS Survey - Roster Data

For comparison, Figure 4 4 displays the net enrollment rates by gender and per capita expenditure The same basic patterns exists for net enrollment rates as for age-specific rates First, there are no significant differences in male-female enrollment rates for 7 to 12 year-old children Second, 13 to 15 year-old boys from poorer families have net enrollments that are 21 percent higher than the enrollment rates of girls This indicates that not only are 13 to 15 year-old girls from poor and low-income families less likely to be enrolled in school than their male counterparts, but that these girls are also less likely to progress through junior secondary school at the expected pace A similar pattern also appears for the 16 to 18 year-old group

In summary, these data indicate that families equally enroll their 7 to 12 year-old girls and boys, regardless of income level However, boys from the junior and senior secondary school age groups are more likely to be enrolled than girls, with the greatest disparity occurring among the poorest families This gender differential appears to disappear for children from the middle-income groups, but to return for the higher-income groups Further, girls from poor and low-income families who are enrolled in junior secondary school progress through school at a slower

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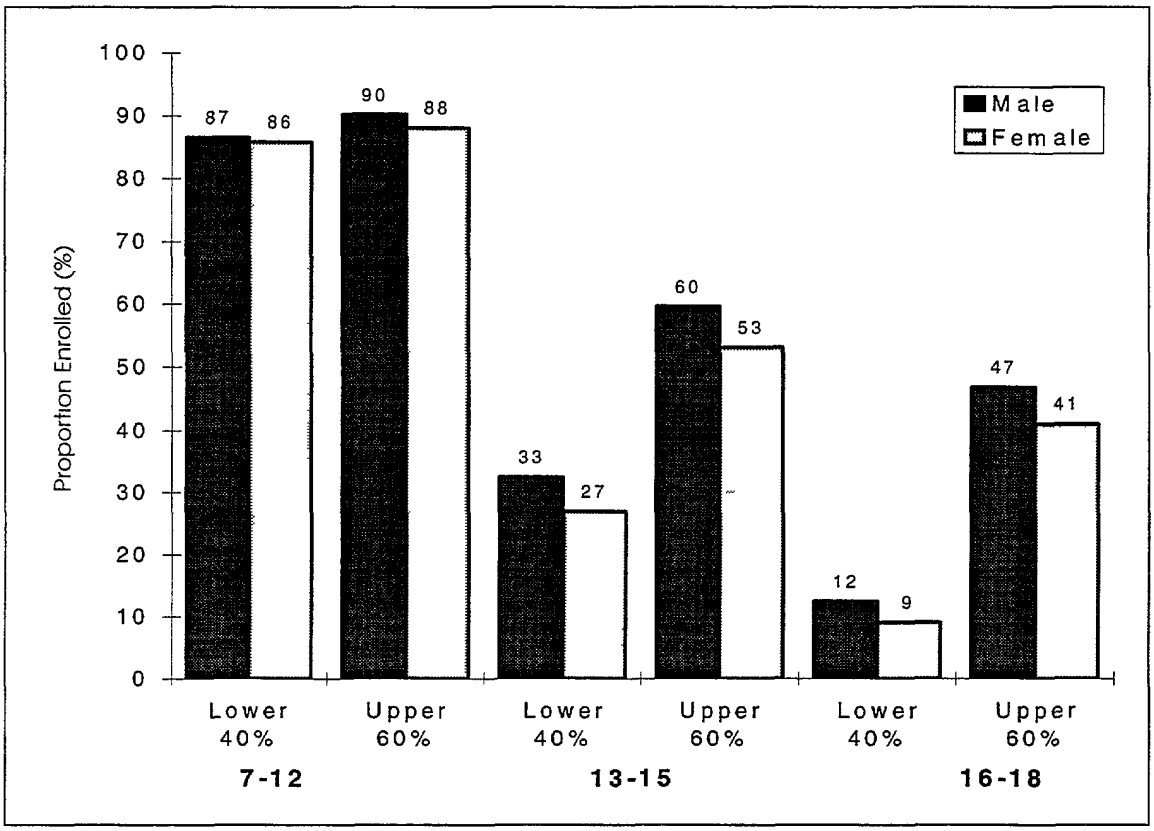
28 This pattern was confirmed in an analysis of the 1993 SUSENAS

pace than their male counterparts From this descriptive analysis, we cannot determine the extent to which these patterns reflect family decisions in response to such factors as accessibility and costs of schools, opportunity costs of children's time, expected returns to education, or culture

Figure 4 4

Net Enrollment Rates by Gender and Per Capita Expenditure Quintile



Source IFLS Survey Roster Data

4 Enrollment Rates in Public and Private Schools

A recent study of the distribution of the government's education subsidies found that subsidies for elementary school education are strongly pro-poor, but that subsidies for secondary education are regressive The principal determinants behind the distribution of the education subsidies are the enrollment rates and the total number of children across income groups [29] The nearly equal elementary school enrollment rates across income groups, along with the fact that poor families have larger numbers of children, result in progressive subsidies for elementary

[29] World Bank *Indonesia Public Expenditures Prices and the Poor*, Washington, D C 1993 Other important factors in the distribution of these subsidies include the distribution across income groups of school quality and school fees paid

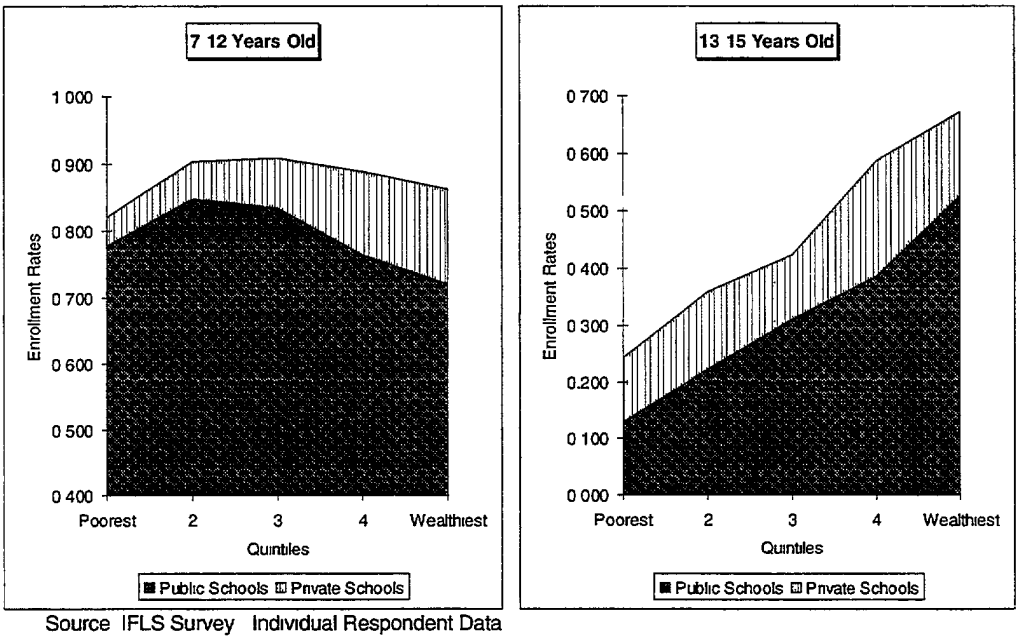
education However, the large differences between poor and nonpoor secondary enrollment rates result in regressive subsidies

An examination of enrollment rates by school administration (i e , public versus private) provides additional insights into the distribution of school subsidies The left panel of Figure 4 5 shows how elementary school net enrollment rates are divided between public and private schools according to per capita expenditure quintile First, note that nearly all of the increase in enrollment between the poorest and second quintile is due to increased enrollment at public schools Second, private schools are a much smaller percentage of total net enrollment for the poorest quintile than for the wealthiest quintile (5 2 percent versus 16 4 percent) Third, the increasing enrollment at private elementary schools for the two upper quintiles does not result in higher total enrollment, rather, the increasing private school enrollment is a substitute for public school enrollment This latter observation suggests that the choice of private schools by higher-income families represents a choice for higher school quality, as opposed to improved access

The right panel of Figure 4 5 shows a very different pattern for junior secondary school enrollment First, the lion's share of the increase in enrollment throughout the expenditure distribution is due to increased enrollment in public schools This is true even for the wealthiest quintile Second, private school enrollment represents 47 percent of the total net enrollment for the poorest quintile, which is higher than for any other quintile These findings suggest that enrollment in private junior secondary schools is motivated more by limited access to public schools than by a choice for a higher-quality school This seems to be especially likely for the poorest quintile

Figure 4 5

Net Enrollment Rates by School Administration and Per Capita Expenditure Quintile



Source IFLS Survey Individual Respondent Data

Not surprisingly, private school enrollment rates are higher in urban areas than rural areas Private school enrollment comprises approximately 16 percent of the enrollment in urban areas but only 6 percent of the enrollment in rural areas The higher average incomes and greater population density of urban areas would be expected to lead to a greater demand for private schools, either as a source of higher-quality education or an alternative to over-crowded public schools

Finally, there is no substantial gender difference in private school enrollment Private school enrollment constitutes approximately 11 percent of male enrollment and 9 percent of female enrollment

5 Characteristics of Children Never Attending School

The enrollment rates indicate that at any point in time nearly 92 percent of children 7 to 12 years old are attending school This raises the questions of what proportion of children *never* attend school, and what are their characteristics? Table 4 4 lists the distribution of children, currently 7 to 12 years old who have never attended school by age, gender, residence and per capita expenditure This table also shows the share (i e , proportion) of the total children never attending school by these same characteristics

In total, 4 2 percent of children aged 7 to 12 years have never attended school However, this overstates the percentage of children who *will* never attend school To see this, we need to examine the distribution of children never attending school by age Table 4 4 shows that 15 1 percent of children 7 years old have never attended school This percentage drops to 4 1 percent by age 8, and continues to decline to 1 percent by age 12 Therefore, by age 12 almost all children have attended school for at least one year These data indicate that enrolling in school late, temporarily withdrawing from school or permanently dropping out are the primary reasons that the age-specific enrollment rate is only 92 percent

A closer examination of the age distribution will help us to better understand the extent to which children enroll late in school Again, the table indicates that 15 1 percent of children 7 years old have not yet enrolled However, this overstates the true percentage of children who should be enrolled, but are not The elementary school year typically starts in the last week of July, and all children who are 7 years old by November 1 of the school year should enroll Many of the children who were 7 years old at the time of the interview turned 7 years old after November 1, and they were not eligible to enroll in the current school year [30] Therefore, the actual percentage of children 7 years old who should be attending school but are not is between 4 1 percent and 15 1 percent By 8 years old, all children should be enrolled in school, but 4 1 are not Furthermore, by ages 9 and 10, 2 4 percent of children are still not enrolled These latter figures of 4 1 and 2 4 represent the percent of children at ages 8, 9, and 10 who will enroll late in school or never at all

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[30] The IFLS household interviews were conducted between September 1993 and early February 1994

Table 4 4

Characteristics of Children 7-12 Years Old Who Have Never Attended School

	Distribution (Percentage)	Share (Proportion of Total)
All Children 7-12	4 2	1 000
Age		
7	15 1	0 559
8	4 1	0 153
9	2 3	0 081
10	2 4	0 081
11	1 3	0 054
12	1 0	0 072
Total	-	1 000
Gender		
Male	3 7	0 432
Female	4 6	0 568
Total	-	1 000
Residence		
Urban	1 4	0 207
Rural	5 5	0 793
Total	-	1 000
Per Capita Expenditure Quintile		
Poorest Quintile	9 6	0 450
Second Quintile	4 3	0 243
Third Quintile	3 5	0 189
Fourth Quintile	1 3	0 108
Wealthiest Quintile	0 2	0 009
Total	-	1 000

Source IFLS Survey - Roster Data

An examination of the distribution of never having attended school by gender, residence and expenditure quintile suggests the following (1) Girls are more likely than boys to be enrolled late in school, (2) children living in rural areas are roughly four times more likely to be enrolled late than children from urban areas, most likely due to lower average incomes of the rural population, and (3) there is a strong income effect on the probability of being enrolled late—more than a tenfold difference between the poorest quintile and the two wealthiest quintiles

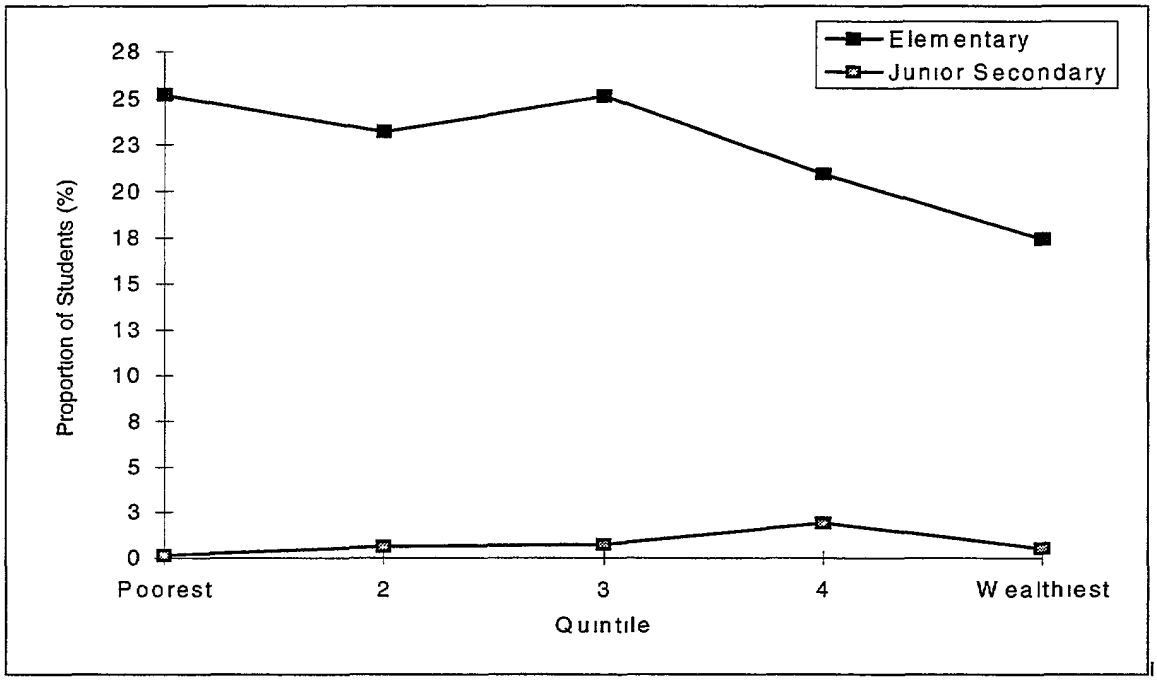
D Grade Failure

Grade failure is another major reason why children do not progress through school at the expected pace Furthermore, grade failure may be an indicator of inequities For example, if low-income families invest less in their children's education, either by sending them to lower quality schools or providing them with fewer educational materials, then one might expect their children to more often fail grades [31] On the other hand, the government's expenditure pattern for schools may favor higher-income children and communities In addition, children from the poorest families are more likely to be undernourished, and poor nutrition has been associated with lower school performance

Grade failure is quite common in elementary school, regardless of the expenditure quintile of the students, but grade failure is higher for children from the three lowest quintiles In contrast, less than one percent of children ever attending junior secondary school report having failed a grade Figure 4 6 indicates that approximately 25 percent of children from the three lowest quintiles who have ever attended elementary school have failed at least one grade This percentage declines to about 17 percent for the wealthiest quintile

Figure 4 6

Proportion of Students Ever Failing A Grade by Level of Education and Per Capita Expenditure Quintile



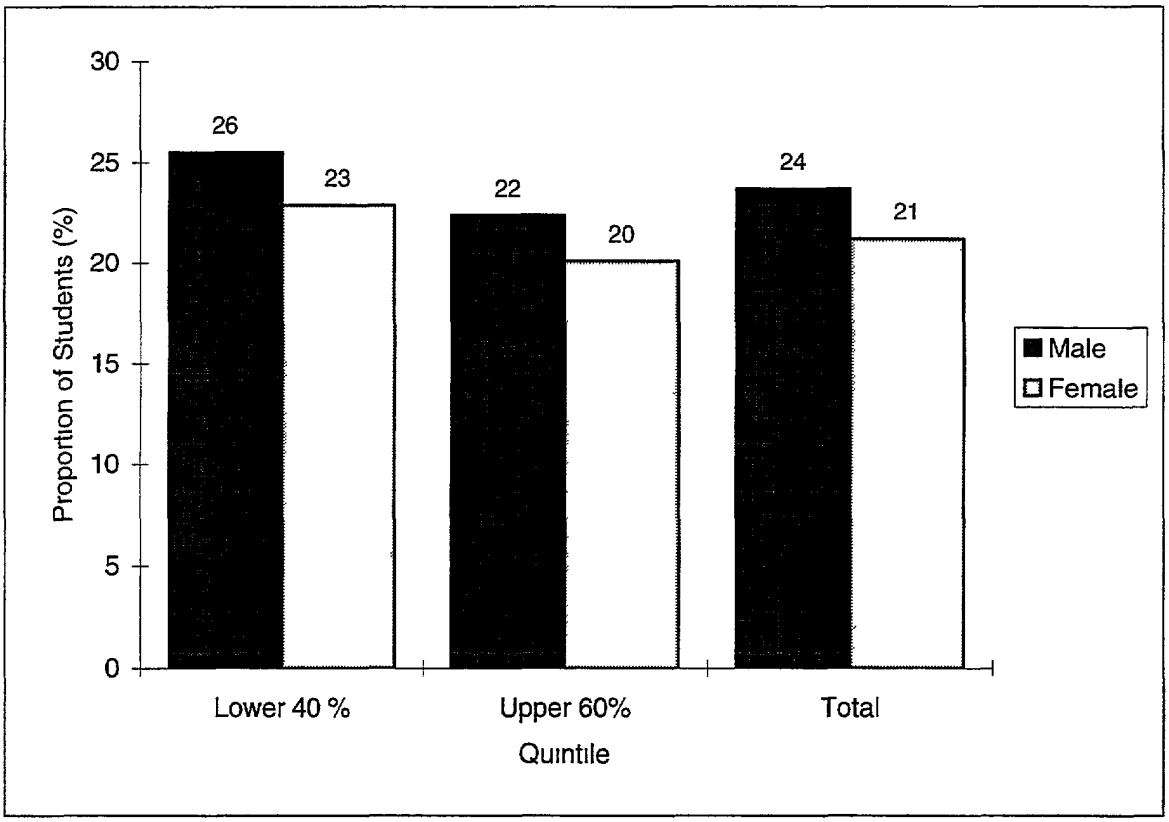
FLS Survey Individual Respondent Data

[31] The effect of school quality differences on grade failure may be diminished if schools grade on a curve

Turning to the question of gender and equity in education, if parents under-invested in their daughters' education, one might expect to see higher failure rates for girls than for boys, especially among the poorest families, where discretionary resources for education would be most constrained Figure 4 7 displays the distribution of grade failures by per capita expenditures and gender Interestingly, girls' failure rates are 11 percent below that of boys in both the lowest 40 percent and upper 60 percent at the expenditure distribution

Figure 4 7

Proportion of Students Ever Failing Grade in Elementary School by Gender and Per Capita Expenditure Quintile

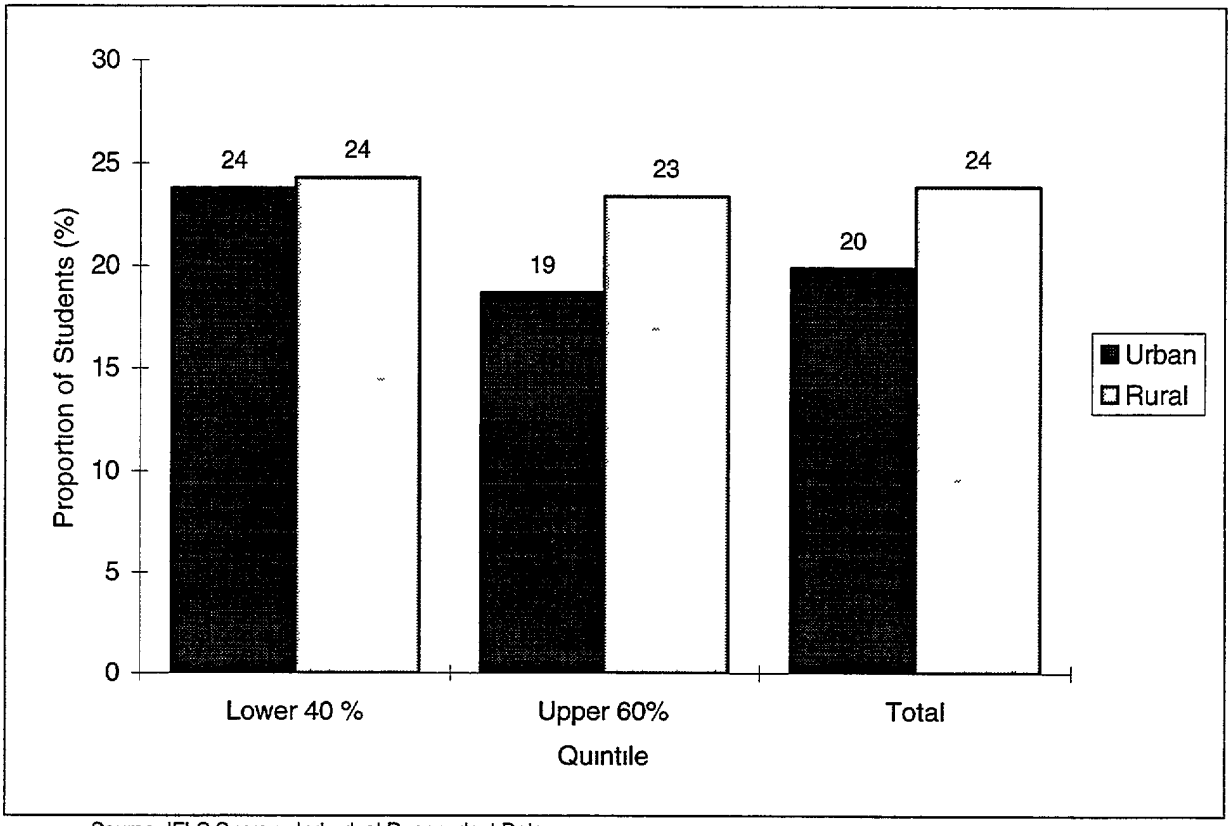


Source IFLS Survey Individual Respondent Data

An examination of urban-rural differences indicates that rural students are more likely to have failed a grade than urban students, 23 9 percent versus 19 9 percent However, Figure 4 8 shows that the urban-rural discrepancies exist only among the upper 60 percent of the expenditure distribution

Figure 4 8

Proportion of Students Ever Failing Grade in Elementary School by Residence and Per Capita Expenditure Quintile



Source IFLS Survey Individual Respondent Data

E Graduation Rates

In the previous sections, we noted that although 5 to 10 percent of children are one or two years later in starting elementary school, over 97 percent of children enter school by ages 9 and 10, and these delays are negatively associated with per capita expenditures Furthermore, we learned that elementary-grade failure rates are high for all expenditure quintiles, but especially the poorest quintile These findings raise the question of what percentage of children eventually graduate from elementary school, and to what extent is graduation delayed?

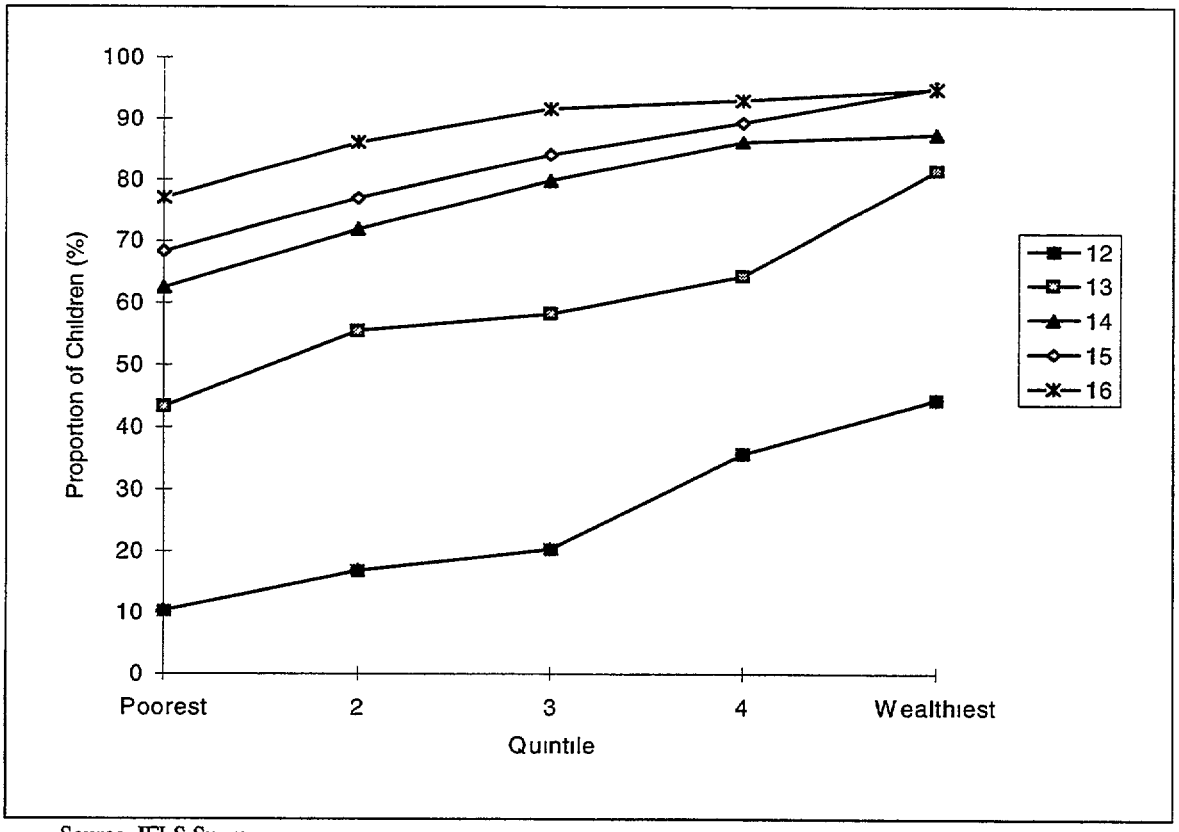
Figure 4 9 graphs the cumulative graduation rates by age and per capita expenditure quintile, demonstrateing that there are both significant delays in graduation and strong income effects First between the ages of 12 and 13, there is more than a 35 point increase in the percent of children who have graduated from elementary school In total, only 24 3 percent of children 12 years old are elementary school graduates, but 59 4 percent of 13 year-old children are graduates There is also a substantial increase in the percent of children who have graduated by age 14, but between the ages of 14 and 16 there is only a 14 percent increase By age 16, 88 4 percent of children have graduated from elementary school, and almost all of the remaining 11 6 percent are

no longer attending school Thus, the cumulative percentage of children who drop out before graduating from elementary school is approximately 12 percent

Figure 4 9 also documents that for each age there is a strong positive relationship between per capita expenditure and the percentage of children who have graduated However, the size of the income effect diminishes with age, reflecting that income influences the pace and level of educational attainment in several ways First, the likelihood that families delay the enrollment of their children in school decreases with increasing income Second, children from lower income families are more likely to fail and repeat grades, and perhaps to temporarily withdraw from school Finally, the likelihood of dropping out decreases with increasing income Understanding the nature and magnitude of these different effects is important, since they call for different policy and programmatic responses from the government However, sorting out these different influences of income and quantifying their magnitude requires multivariate modeling of the children's education path

Figure 4 9

Cumulative Graduation Rates by Age and Per Capita Expenditure Quintile



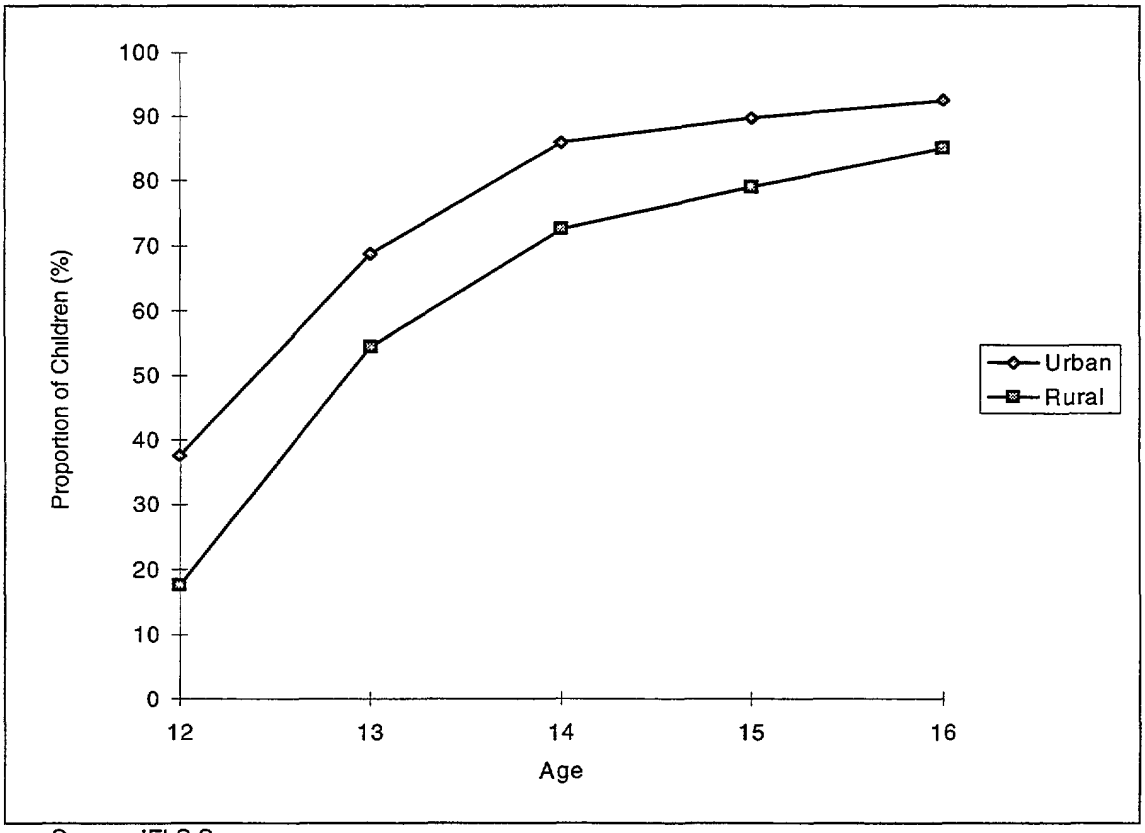
Source IFLS Survey

In addition to graduation rates by income, we also examined graduation rates by gender and residence First, nearly identical percentages of boys and girls have graduated from elementary school at each age from 14 years to 16 years For example, by age 16, 86 7 percent of girls and 90 percent of boys have graduated from elementary school However, there is a

substantial variation in the percentage of graduates in urban and rural areas Figure 4 10 indicates that the urban percentages are much larger than the rural percentages, especially at the younger age groups At age 12, 37 6 percent of urban children have graduated from elementary school versus only 17 6 percent of rural children By age 16 this urban-rural gap narrows to 92 6 percent versus 85 1 percent Once again, these urban-rural differences reflect partially differences in urban and rural income levels

Figure 4 10

Cumulative Graduation Rates by Residence and Age



Source IFLS Survey

F School Expenditures

In the previous sections, we documented the government's success in promoting elementary and junior secondary enrollment However, we also noted disparities in enrollment across income groups and gender, as well as certain priorities that need to be targeted to achieve compulsory junior secondary education We now turn to an examination of some of the programmatic factors that underlie the existing gaps in elementary and junior secondary enrollment rates In this section, we focus on school expenditures and how they differ by income and gender In the following section, we examine travel times

Families' school expenditures may take the form of fees paid directly to the school, fees paid to parents' associations, and other school-related costs (not paid to the school) Fees paid directly to the school include entrance fees, regular fees, and special or irregular fees Entrance fees are one time fees paid when a student begins a school level (e g , elementary or junior secondary) or when a student changes schools Regular fees may be charged on a monthly or annual basis (e g , uniform fees and book fees), and irregular fees are charged for special activities or events (e g , special courses and end of the year exams) Although official school fees were abolished for public elementary schools, many of these schools apparently charge "unofficial fees " The fees paid through parents' associations are generally considered mandatory and are used to finance a variety of vital school activities The amounts of these fees are typically determined jointly by the parents' associations and the school principal, and they vary substantially across schools In poorer communities, schools may receive little or no revenue from the parent association fees, while in wealthier communities schools may receive much more from these associations than from the government Finally, expenditures for school-related costs include transportation, books, school supplies and tutors

The fees reported in this section are based on the reports of parents whose children are enrolled in school, and therefore must be interpreted carefully First, these fees do not represent the full cost to families of their children's education, since they do not incorporate children's opportunity cost of time Second, these fees are not adjusted for quality differences, and higher fees are likely correlated with higher quality schools Third, these reported fees will understate the fees faced by families, since families whose children have dropped out of school are likely to have faced school expenditures greater than they could afford to pay In contrast, poor children who are enrolled in school are likely to be enrolled because their parents had access to schools with affordable fees This "self-selection" bias is much larger for junior secondary schools than elementary schools, since a much smaller percentage of eligible children attend junior secondary schools than elementary schools

1 Entrance Fees

Table 4 5 displays the entrance fees reported by parents by per capita household expenditure quintile and school type The overall average elementary school entrance fee is Rp 11,400 However, private school fees are three times higher than public school fees, Rp 28,200 versus Rp 9,400 Families from the poorest 40 percent of the expenditure distribution report paying on average only Rp 5,900, as compared to Rp 17,000 paid by families from the upper 60 percent As a reference, note that the per capita household expenditure cut-off point for the poorest quintile is Rp 22,858 These data indicate that entrance fees to public elementary schools are affordable even for the poor

By contrast, parents report paying much higher entrance fees for junior secondary schools The overall average of the junior secondary entrance fee is Rp 47,500, with higher fees being reported for public schools (Rp 48,200) than for private schools (Rp 47,000) The families in the lowest 40 percent of the expenditure distribution report paying an average of Rp 29,800, almost *five* times more than the amount paid to elementary schools by families from the two lower quintiles Thus, entrance fees to junior secondary school are far less affordable than are entrance fees to elementary schools

Table 4 5

Average Entry Fee by School Level, Per Capita Household Expenditure Quintile, and School Type (In Rp 1,000's)

	Quintile		School Type		
	Lower 40%	Upper 60%	Public School	Private School	Overall Average
Elementary School	5 9	17 0	9 4	28 2	11 4
Junior Secondary School	29 8	52 5	48 2	47 0	47 5

Source IFLS Survey - Individual Respondent Data

2 Annual School Expenditures

Both the amount and mix of annual school expenditures varies across school levels Table 4 6 shows that the total annual school expenditure increases from an average of Rp 79,600 for elementary school to Rp 210,300 for junior secondary school and to Rp 459,200 for senior secondary school While total school fees represent 55 to 63 percent of total annual expenditures for elementary and junior secondary school, total school fees are nearly three-quarters of school expenditures for senior secondary school

Table 4 6

Annual School Expenditures per Student by School Level (In Rp 1,000's)

	School Level		
	Elementary	Junior Secondary	Senior Secondary
Total Annual School Fees*	44 0	132 5	326 3
Other School-Related Costs	35 6	77 8	132 9
Total School Expenditures **	79 6	210 3	459 2

Source IFLS Survey - Individual Respondent Data

* Average school fees excluding entry fees

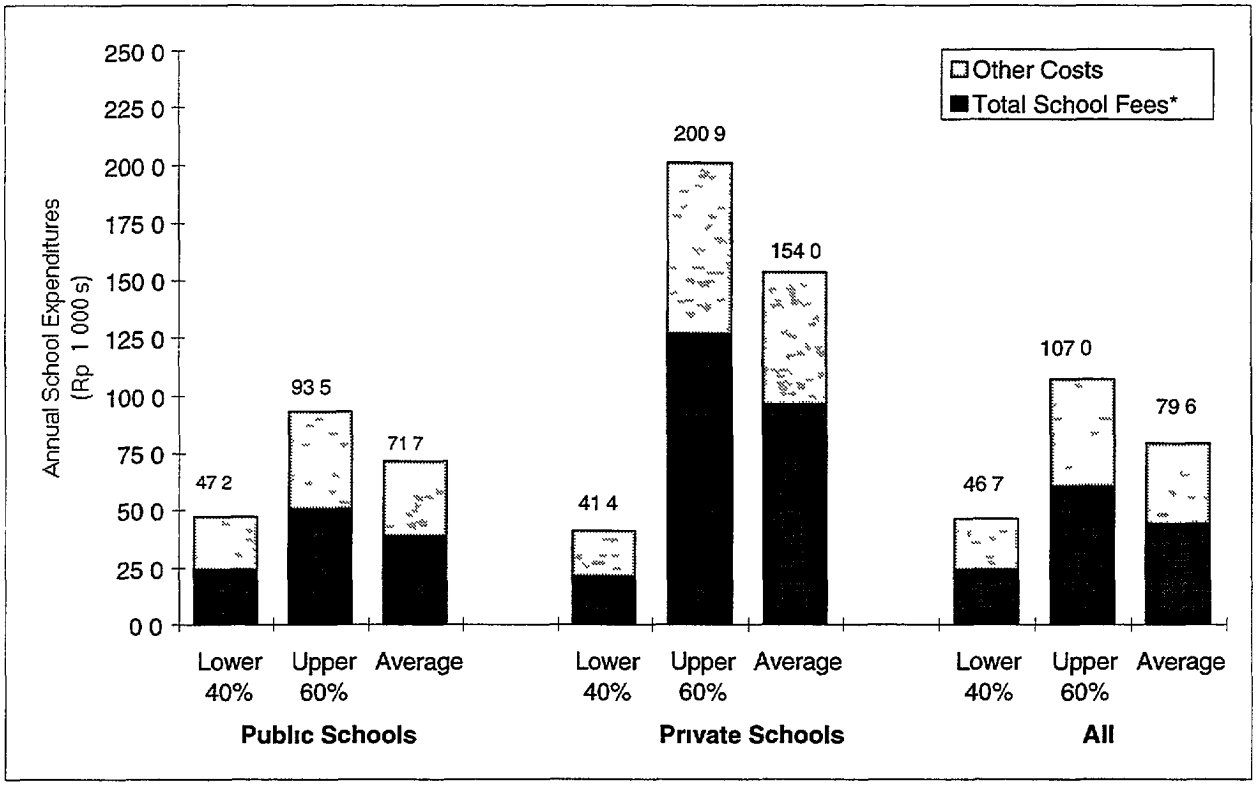
** Total annual school fees + other school-related costs

To better understand the financial burden that school expenditures place on poor and low-income populations, Figures 4 11 and 4 12 graph annual school expenditures by school type and per capita household expenditure quantiles for elementary and junior secondary schools The

average annual expenditure for public elementary schools is Rp 71,700, less than half of the average annual expenditures for private elementary schools For children in the lowest 40 percent of the expenditure distribution, the average expenditures for public schools are slightly higher than for private schools, Rp 47,200 versus Rp 41,400 In contrast, for children in the upper 60 percent of the distribution, the average private school expenditures are more than double the public school expenditures, Rp 200,900 versus Rp 93,500 This suggest that for the wealthiest 60 percent, quality differences may be an important determinant in families' decisions to send children to private schools In addition, public and private elementary school expenditures would seem to be affordable for the vast majority of the poorest 40 percent These annual fees translate to about Rp 4,000 per month, well below the average monthly per capita expenditure of even the poorest 20 percent

Figure 4 11

Annual School Expenditures per Elementary Student by School Type and Per Capita Household Expenditure Quintile (In Rp 1,000's)



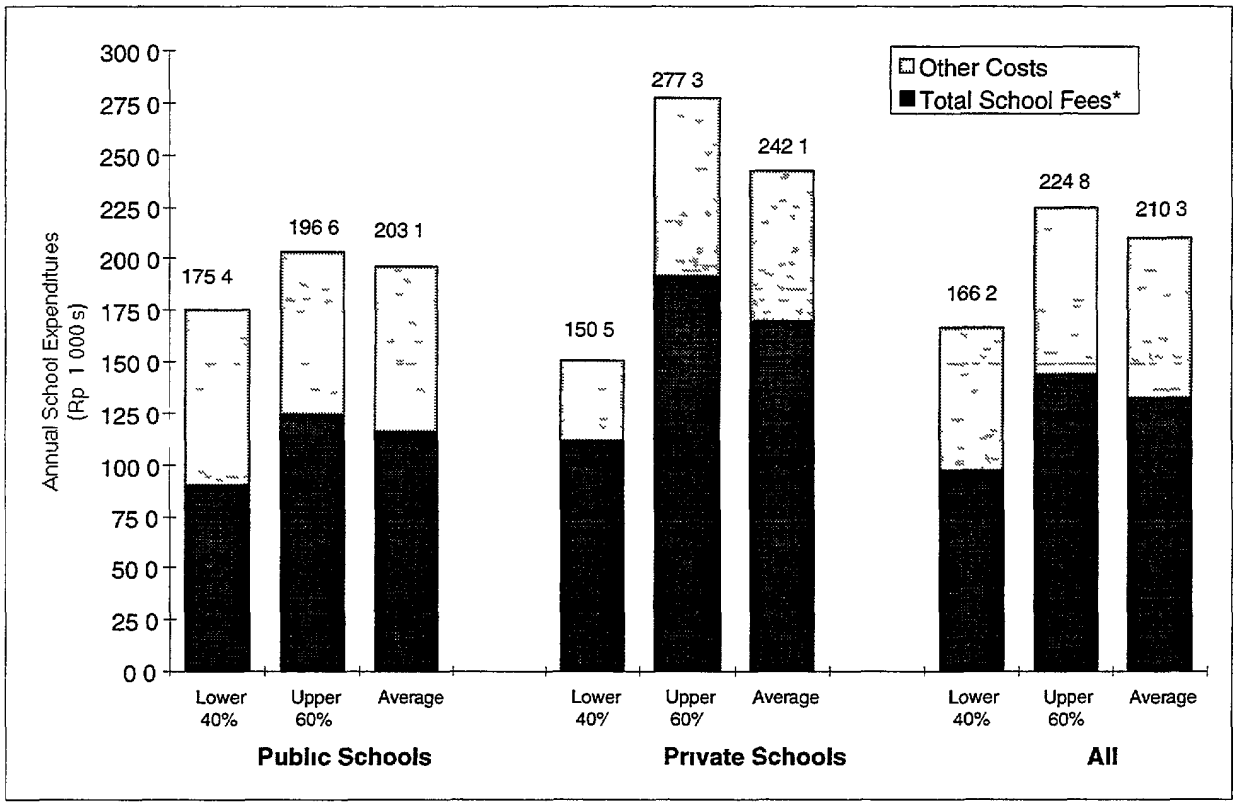
Source IFLS Survey - Individual Respondent Data
* Total annual school fees plus other school-related costs

Figure 4 12 indicates that the pattern of junior secondary school expenditures is similar to the pattern for elementary schools, although the expenditures are much higher The average expenditure for private schools is Rp 242,100 versus Rp 196,600 for public schools The poorest 40 percent pay more for public school than for private school education, Rp 175,400

versus Rp 150,500 These translate to roughly Rp 14,600 and Rp 12,500 per month for each child in junior secondary school Recall that per capita household expenditures for individuals in the second quintile range from Rp 22,858 to Rp 34,477 per month Furthermore, the average per capita expenditure of individuals in the first and second quintiles are Rp 16,928 and Rp 30,722 Thus, the level of "required" expenditures for junior secondary education is likely to be a primary factor in explaining low junior secondary enrollment rates among the poor and near-poor, and the level of school expenditures is likely to influence their choice of school (i e , quality of education) [32]

Figure 4 12

Annual School Expenditures* per Junior Secondary Student by School Type and Per Capita Household Expenditure Quintile (In Rp 1,000's)



Source IFLS Survey Individual Respondent Data
* Total annual school fees plus other school related costs

[32] A more definitive answer to this issue requires estimating the demand for junior secondary education using an empirical model that permits price elasticities to vary by income level

3 Annual School Expenditures by Gender

Table 4 7 shows that elementary school entry fees are the same for boys and girls Similarly for annual school fees and other school-related costs, parents report paying the same amount for boys and girls In other words, parents do not appear to selectively spend more on their sons' than their daughters' elementary education The same is true for junior secondary school Total school expenditures for boys enrolled in junior secondary school is Rp 214,300, versus Rp 205,900 for girls Although there appears to be a modest difference between the average expenditures for boys and girls, the difference is not significant, and the majority of the difference is in the reported annual school fees at private schools

Table 4 7

Entry Fee and School Expenditures by School Level and Gender
(In Rp 1,000's)

	Male	Female	Total
Average Entry Fee			
Elementary Schools	11 3	11 4	11 4
Junior Secondary Schools	47 1	48 1	47 5
Total Annual School Fees			
Elementary Schools	44 6	43 7	44 1
Junior Secondary Schools	137 3	125 9	132 5
Other Annual School-Related Costs			
Elementary Schools	35 7	36 2	35 9
Junior Secondary Schools	77 0	80 0	78 3
Total Annual School Expenditures*			
Elementary Schools	80 3	79 9	80 0
Junior Secondary Schools	214 3	205 9	210 8

Source IFLS Survey - Individual Respondent Data

* Total annual school fees + other annual school-related costs

4 Assistance with School Expenditures

Receipt of financial assistance is one way that parents may compensate for required school expenditures which may be beyond their ability to pay by themselves However, as shown in Table 4 8, only a small percentage of parents report receiving assistance with the school expenses of their children The school expenses for 95 percent of school children are paid by parents, while the expenses of nearly 5 percent of the children are paid by other family members Scholarships are rarely available to children, with approximately one percent of children receiving scholarships

Interestingly, there is no significant difference in source of payment between the poorest 40 percent and the wealthiest 60 percent of the population

G Travel Time to Schools

In addition to school expenditures, another factor that may underlie the existing gaps in elementary and junior secondary enrollment rates is travel time Long travel time places burdens on both the children and their parents The longer the travel time, the higher the opportunity cost of schooling Parents may rely on children to work for the family enterprise, to work outside the home, or to help with household chores Parents may also be more concerned for their children's safety, the longer the travel time and distance In addition, long travel times and distances may tire children and affect their performance in school

Table 4 8

School-Related Costs of Elementary and Lower Secondary Students by Source of Payment

Source	Per Capita Expenditure Quintiles		
	Lower 40%	Upper 60%	Total
Self	0 003	0 003	0 003
Parents	0 954	0 950	0 952
Sibblings	0 021	0 008	0 014
Other Family	0 031	0 043	0 037
Employer	0 000	0 001	0 001
Scholarship	0 010	0 017	0 014
Other	0 003	0 006	0 004

Source IFLS Survey - Individual Respondent Data

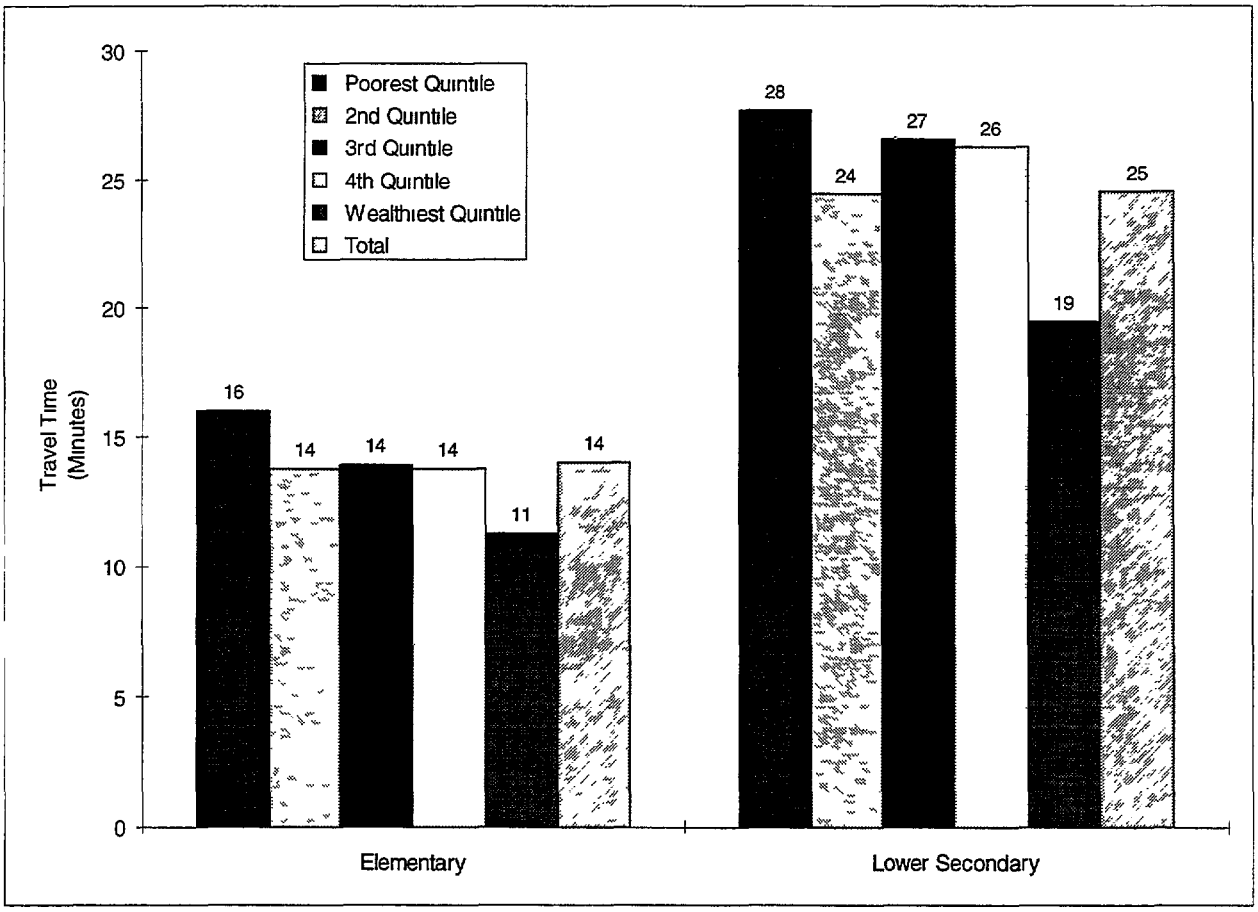
Due to these negative consequences of long travel times, proximity of schools to children's homes may be an important determinant of whether children enroll in school, especially in rural areas Furthermore, parents may be willing to pay more to send their children to schools closer to home The willingness and ability to pay to reduce travel time is likely to be positively associated with income

Figure 4 13 graphs the relationship between average travel time and per capita expenditures for elementary and lower secondary schools As with the expenditure data discussed above, travel times are reported by parents whose children are enrolled in school As such, these travel times are subject to a negative self-selection bias, especially the travel times for junior secondary school Therefore, the travel times reported here are likely to understate the travel times faced by families when making their decisions of whether and where to enroll their children

The most striking feature of Figure 4 13 is the large difference in average travel times between elementary and junior secondary schools Students travel nearly twice as long to get to junior secondary schools, 24 5 minutes versus 14 minutes For both elementary and junior secondary schools, there appears to be a weak negative relationship between travel times and per capita expenditures Children from the poorest quintile travel an average of 16 minutes to elementary school, while children from the wealthiest quintile travel an average of only 11 3 minutes Although this negative relationship between time and per capita expenditure is consistent with our expectations of parents' willingness to pay for shorter travel times, it is possible that the government's policies are partly responsible for this negative relationship If the government more often builds schools in higher income communities than in lower income communities, then the average distance and average travel times to schools would be less for the residents of higher income communities than for the general population

Figure 4 13

Average Travel Time to School by Education Level and Per Capita Expenditure Quintile



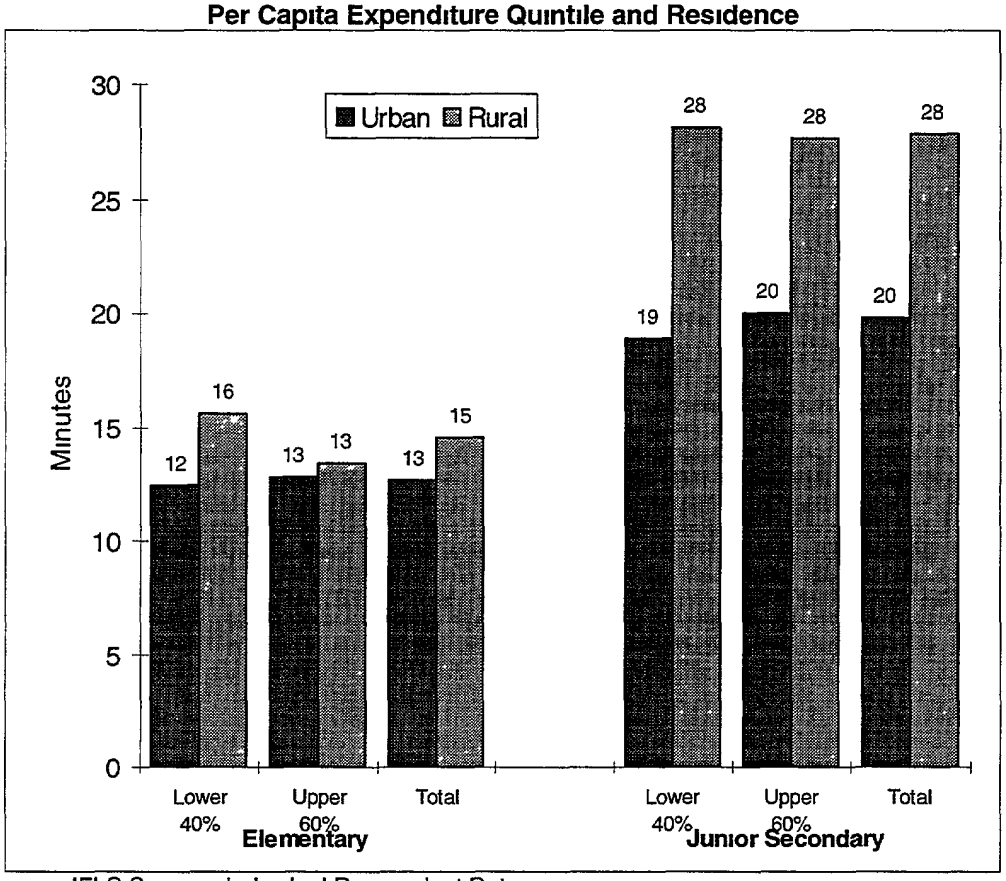
Source IFLS Survey - Individual Respondent Data

Another way to look at it is that due to the remoteness of many rural areas, social infrastructure is often more widely available in urban areas than rural areas Therefore, rural

residents, especially poor rural residents, must often travel much farther and much longer to access public services [33] Figure 4 14 reveals distinctive patterns in travel time to elementary and junior secondary schools First, the government's long-term commitment to compulsory elementary school education has nearly equalized average travel times to elementary schools in urban and rural areas The only disadvantaged group is poor and low-income families in rural areas, but the magnitude of the disadvantage is small—an average difference of only 3 1 minutes between the lower 40 percent and the upper 60 percent However, for junior secondary schools there are substantial differences between urban and rural areas The average urban travel time is 19 8 minutes, versus 27 9 minutes for rural residents Finally, within both urban and rural areas, there is initially no difference in the travel times reported for children from high- and low-income families

Figure 4 14

Average Travel Time to School by Education Level, Per Capita Expenditure Quintile and Residence



Source IFLS Survey - Individual Respondent Data

Turning to possible gender differences, Figure 4 15 indicates that there are no apparent male-female differences in travel times to elementary school However, the average travel times to junior secondary schools are longer for males than females, especially among the lowest 40

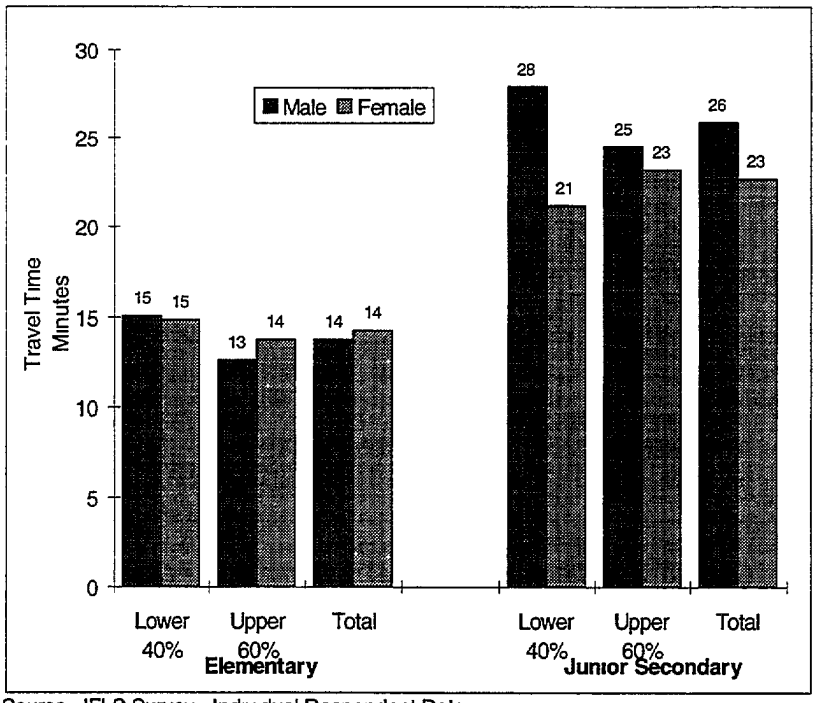
[33] *Poverty Analysis and Policy Formulation Targeting Poverty with Economic and Nonmonetary Measures from the 1992 SUSENAS* Santa Monica Calif RAND, 1994

percent of the expenditure distribution This pattern may reflect parents' willingness to allow their sons to travel further to school than their daughters This finding is also consistent with the lower female enrollment rates among the poor

In sum, average travel times to junior secondary schools are almost twice as long as the average travel times to elementary schools Although there are also some differences by income level and across urban and rural areas (for junior secondary), these differences are small relative to the gap between junior and secondary schools

Figure 4 15

Average Travel Time to School by Education Level, Per Capita Expenditure Quintile and Gender



Source IFLS Survey - Individual Respondent Data

H Quality Indicators

Quality is an important consideration in education policies and programs Quality can affect the value of returns-to-education, the decision of parents to enroll their children in school, the choice of school, children's progress through school, and parents' willingness to supplement their children's education Yet quality can be difficult to define, and definitions may vary across cultures and even across individual families At a broad level, quality can be divided into three categories structure, process and outcomes Structure consists of the schooling inputs, including the physical structure and environment of the schools, teachers' qualifications and experience, availability of educational materials, curriculum and teacher-student ratios Process is how these inputs are combined to educate children, and the resulting interactions between teachers and students Finally, the outcome, which is the ultimate benchmark of quality, is concerned with what children accomplish in school, or broadly speaking, how well the education received prepares them for life in their society and culture

In the IFLS, we collected information on school quality from two sources (1) parents of children enrolled in school, and (2) interviews with school principals and teachers, as part of the school surveys In both cases, our focus was on collecting information about the structural dimensions of quality This focus was dictated by the need to collect standardized, comparable and reliable measures of quality across more than 2,300 schools in an efficient and timely manner In addition, questions for parents needed to be designed to inquire only about information that they would be likely to know In this section we report information collected from parents on quality indicators of their children's school

The average number of hours students spend in school per day is one indicator of the level of school inputs Although the government has established regulations on the number hours per day that students in each grade level are to attend, there is some question whether schools may dismiss children early, so that teachers may work at second jobs [34] However, parents generally indicate that their children attend school for the officially required hours per day For example, nearly 94 percent of junior secondary students are reported to attend school for five to six hours per day There is no difference in the average number of hours reported for boys and girls, or for urban and rural residence Furthermore, Figure 4 16 indicates that on average parents report that there children attend school for the official number of hours regardless of the families' level of per capita expenditure

The building materials used to construct schools can be a useful indicator of the level of resources available to a school In particular, schools whose buildings are constructed from more expensive materials may also be able to allocate more resources to the education process (e g , more and better educational tools) Thus, parents were asked about the materials used in the floor construction at their children's schools In descending order of expense, the floor construction materials are tile/ceramic, brick/cement, or wood/bamboo/dirt Table 4 9 indicates that for elementary schools, there is no gender difference in the distribution of flooring materials, but there are differences by urban-rural status and per capita household expenditure Children from rural areas and from lower-income families are more likely to attend schools with floors constructed of brick or cement, while children from urban areas and from higher-income families are more likely to attend schools with tile or ceramic floors Table 4 9 indicates that the same pattern is true for junior secondary school students, but the differentials are larger

In addition to the information on school quality collected from parents in the household survey, we linked household and school-level data so that we could examine the quality of schools in greater detail

Recall that in each enumeration area (EA), the IFLS Community and Facility Survey (CFS) teams interviewed teachers and principals from three elementary schools, three junior

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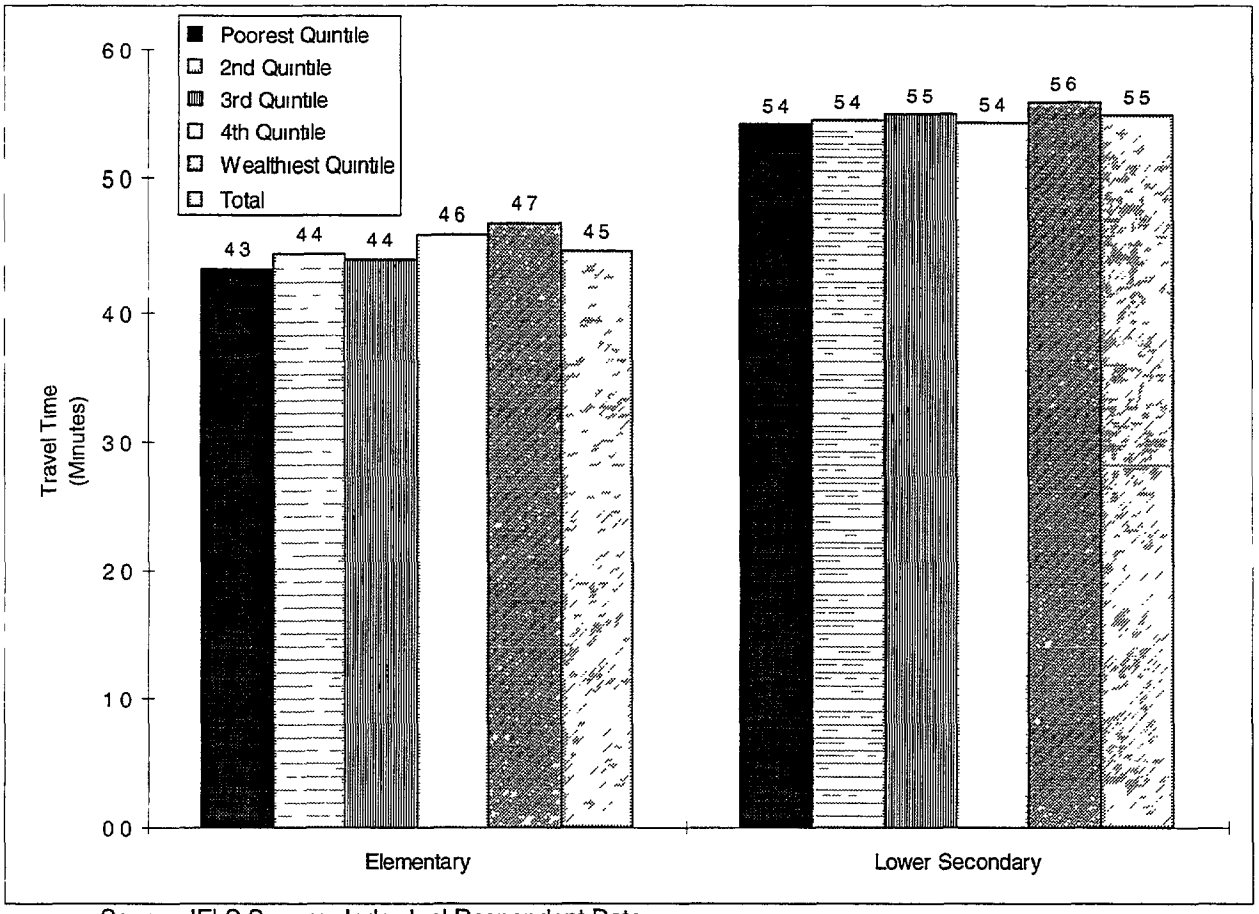
[34] From the school survey roughly 30 percent of elementary school teachers and 40 percent of junior secondary teachers report having second jobs Similarly about 30 percent of principals in elementary and junior secondary schools report having second jobs Teachers and principals with second jobs typically report working 15 to 20 hours per week at these jobs

Figure 4 16

Average Hours Per Day at School by Education Level and Per Capita Expenditure Quintile



Source IFLS Survey - Individual Respondent Data

secondary schools and two senior secondary schools The interviewed schools were selected by a random probability sample of the schools attended by children in the interviewed households in each EA First, IFLS household respondents in each EA were the name and address of the schools attended by children in the household The schools listed included public and private religious and non-religious schools Next, the answers of all households in each of the 321 EAs were aggregated to construct a sample frame of schools in each EA Finally, the schools to be interviewed were randomly selected from these sample frames [35]

Within each selected school, the CFS interviewed the principal and two randomly selected teachers one Bahasa Indonesia teacher and one mathematics teacher For elementary schools, the randomly selected teachers were selected from grade six teachers, for junior and senior secondary

[35] This sample design possesses two key advantages over using official school service areas to define the list of schools First the household-derived sample frames easily facilitate the inclusion of private schools Second the sample design accounts for enrollment in schools outside the official service areas thus negating difficulties from students crossing over official boundaries

Table 4 9

Characteristics of School Flooring By Gender, Residence and Per Capita Expenditure Quintile

	Elementary			Lower Secondary		
	Tile/ Ceramic	Brick/ Cement	Wood/ Bamboo/Dirt	Tile/ Ceramic	Brick/ Cement	Wood/ Bamboo/Dirt
Gender						
Male	0 446	0 521	0 032	0 580	0 406	0 013
Female	0 499	0 459	0 041	0 617	0 362	0 011
Residence						
Urban	0 592	0 382	0 024	0 646	0 321	0 021
Rural	0 426	0 531	0 041	0 559	0 435	0 007
P C Expenditure Quintile						
Poorest	0 361	0 601	0 036	0 571	0 422	0 008
2	0 455	0 502	0 043	0 603	0 389	0 008
3	0 502	0 460	0 036	0 510	0 446	0 037
4	0 545	0 425	0 030	0 610	0 371	0 005
Wealthiest	0 586	0 376	0 036	0 655	0 338	0 007
Total	0 475	0 488	0 036	0 595	0 388	0 013

schools the randomly selected teachers were selected from grade three teachers This strategy allowed us to collect more-detailed information at the classroom level than was possible from an interview of principals alone (e g , use of textbooks and teachers' qualifications) Bahasa Indonesia and mathematics classrooms were selected because of the importance of these subjects to Indonesia's human resource development and labor force productivity

The following tables are constructed using merged data from the household and school surveys Using the list of schools provided by all the households in each EA, we constructed lists of schools that define each individual child's "choice set" of schools These choice sets are the schools that each child has available to choose among To construct the choice sets, we merged to each child's record, information from all the interviewed schools that were mentioned by households in their EA Therefore, even if a child was not currently enrolled in school, that child would still have a choice set—i e , schools that child could choose from if he/she were to attend school Note, that each individual's choice set is constructed independent of whether a family would choose to (or could afford to) send their children to the schools in the choice set [36] Finally, separate choice sets were constructed for children 7 to 12 years old (elementary schools) and 13 to 15 years old (junior secondary schools) The tables and charts in this section display the

[36] Constructing the choice sets independent of this information allows analysts to determine the important factors that affect families choices of schools among the schools available to them These types of analyses require multivariate demand/enrollment models

average school quality in each child's choice set by different characteristics of the children (e g , age, per capita expenditure quintiles, and urban/rural residence), as well as by type of school (public/private)

1 Textbooks

Textbooks are a fundamental component of the education process They guide the students' course of study, they enable the students' education to conform to the accepted curriculum, and they provide the material which forms the basis of classroom instruction and self-study at home Therefore, a basic objective of school programs should be to provide each student with his or her own set of required textbooks When required textbooks are not available to every student, then students must either share textbooks or go without textbooks altogether In either case, the quality of students' education is likely to suffer, and the amount of new material that they are able to learn and retain is likely to be reduced

Figure 4 17 indicates that in the average child's choice set of elementary schools (listed under "All Schools"), 40 5 percent of the students do *not* have Bahasa Indonesia textbooks and 44 6 percent do *not* have mathematics textbooks The availability of Bahasa Indonesia and mathematics textbooks is lower in public schools than in private schools For example, about 42 percent of students do not have Bahasa Indonesia textbooks in the average child's choice set of public schools, as compared to only 33 percent for private schools

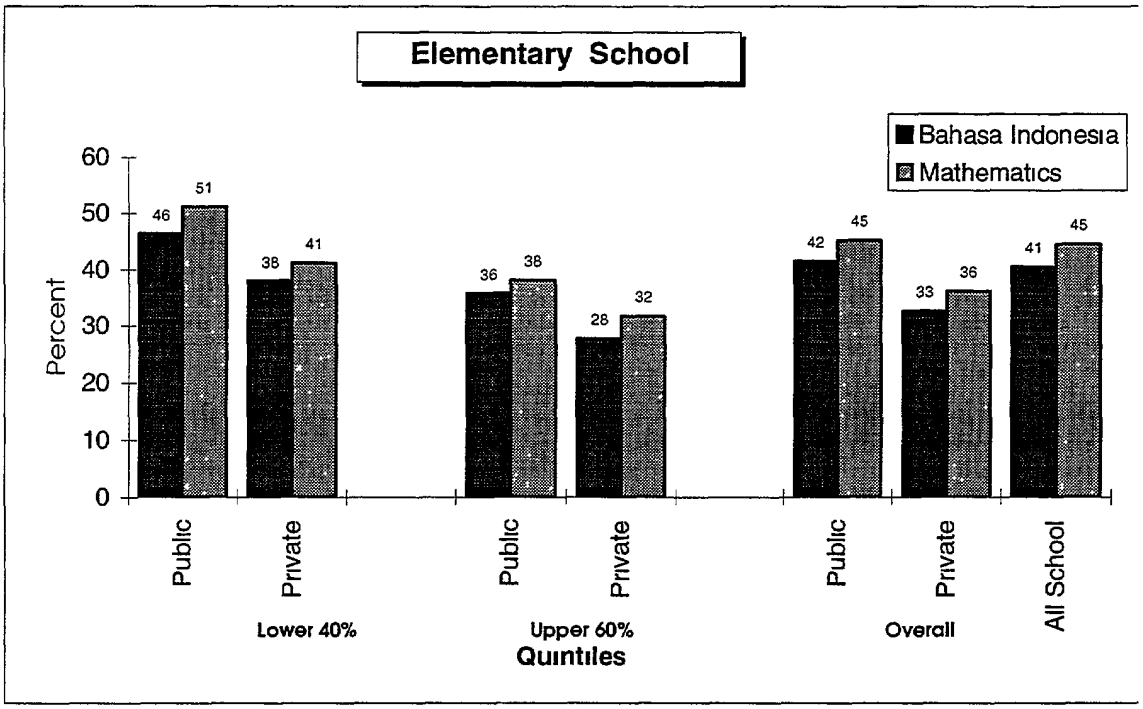
Figure 4 17 also shows how availability of textbooks in elementary schools varies by children's level of per capita expenditure Elementary school children in the lowest 40 percent of the expenditure distribution face schools with less availability of books than do children from the top 60 percent of the income distribution For example, in lowest 40 percent of the expenditure distribution, 51 2 percent of the students do not have mathematics textbooks in the public schools available to them, while the same is true for only 38 2 percent of the students in the upper 60 percent of the expenditure distribution A similar pattern exists for private schools and for the Bahasa Indonesia textbooks as well

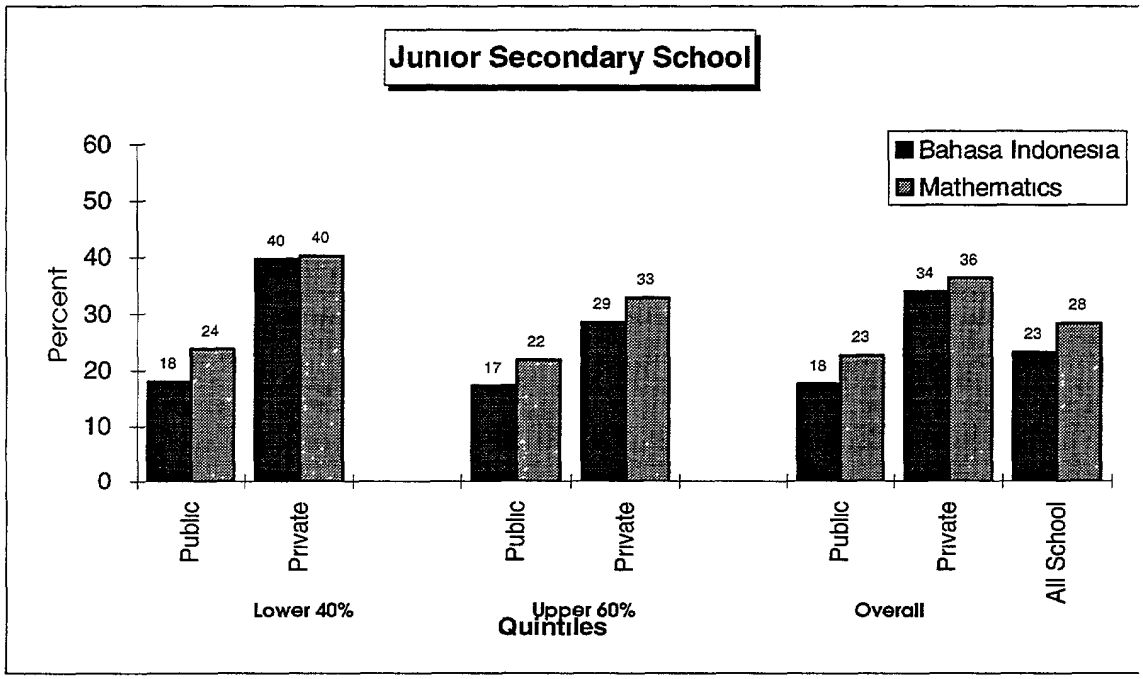
On average, textbooks are more available in junior secondary schools than they are in elementary schools The bottom panel of Figure 4 17 indicates that in the average child's choice set of junior secondary schools (listed under "All Schools"), 23 2 percent of the students do *not* have Bahasa Indonesia textbooks and 28 4 percent do *not* have mathematics textbooks However, in contrast to elementary schools, books are much more available in public schools than in private schools For example, about 18 percent of students do not have Bahasa Indonesia textbooks in the average child's choice set of public schools, as compared to 34 percent for private schools

For junior secondary schools, the availability of books by level of children's per capita household expenditures is different for public and private schools As with elementary schools, children in the lowest 40 percent of the expenditure distribution face *private* schools with less availability of books than do children from the top 60 percent of the income distribution However, there is no apparent difference in the availability of books in the choice sets of public

Figure 4 17

Percentage of Students With No Classroom Textbooks Average Quality of Schools in Children's Choice Set By Per Capita Household Expenditure Quintile





Source IFLS Survey Merged Roster and CFS Data

schools available to children from the lower and upper expenditure groups In fact, the availability of books is better at the public schools in the choice sets of the lower income children than it is at the private schools in the choice sets of the upper income children

It is interesting to note that these findings on the quality of the choice sets of elementary and secondary schools are consistent with the explanations offered in Section C 4 regarding the different mix of public and private enrollment rates by level of per capita expenditures First, the elementary school enrollment patterns suggest that the choice of private schools by higher income families represents a choice for higher quality schools, as opposed to improved access Second, the public-private enrollment mix suggests that enrollment in private junior secondary schools is motivated more by limited access to public schools than by a choice for a higher quality school Although the enrollment and school quality findings tell a consistent story, a formal test of the influence of quality and access on public-private mix will require multivariate analysis

Table 4 10 describes from which sources students obtain their textbooks These data provide some additional insights on the differences of book availability across income levels and by school type Often it is not possible for students to obtain/borrow "free" textbooks from schools, and so they must look to other sources The main difference between public and private elementary schools is in the percentage of students who borrow or buy textbooks from schools At the public schools in the average child's choice set ("Total" column under Public Schools), 43 3 percent of students obtain Bahasa Indonesia textbooks by borrowing them from school, only 11 7 percent buy them from school In contrast, at the private schools in the average child's choice set, 27 5 percent of the students are able to buy their textbooks from school Furthermore, the purchase of textbooks from schools is an important source of books at private schools in the choice sets of children from the lowest 40 percent as well as the upper 60 percent of the per capita expenditure quintiles Thus, it appears that the reason a larger percentage of students at private elementary schools have books, compared to students at public elementary schools is that students at private schools can more readily purchase books from school

For junior secondary schools, it appears that a larger percentage of students at public schools have books, compared to students at private schools, because students at public schools can more readily borrow and purchase books from school For example, at the public schools in the average child's choice set ("Total" column under Public Schools), 46 4 percent of students obtain Bahasa Indonesia textbooks by borrowing them from school, and 27 5 percent buy them from school In contrast, at the private schools, only 31 6 percent of students borrow Bahasa Indonesia textbooks from school, and only 16 4 percent buy them

Finally, only a small percentage of students obtain free books from elementary schools However, a substantial share of students at public and private junior secondary schools, in the choice sets of both upper and lower income children, receive free mathematics books, but not Bahasa Indonesia textbooks In the average choice set of public schools, about 38 percent of students receive free mathematics books, while in the average choice set of private schools, 22 percent receive them free

Table 4 10

Source of Textbooks in Public and Private Schools Average Quality of Schools in Children's Choice Set By Per Capita Expenditure Quintile

	Public Schools			Private Schools		
	Lower 40%	Upper 60%	Total	Lower 40%	Upper 60%	Total
Elementary School						
Bahasa Indonesia						
Receive free textbook	1 5	0 9	1 2	2 5	4 6	3 7
Borrow from school	43 2	43 4	43 3	28 5	32 4	30 6
Buy from school	7 7	16 5	11 7	20 4	33 9	27 5
Buy from other place	22 6	27 9	25 0	21 7	20 5	21 0
Borrow from other place	5 2	5 2	5 2	5 4	4 6	5 0
Photocopy textbook	2 4	2 8	2 6	0 4	1 5	0 9
Mathematics						
Receive free textbook	1 1	1 2	1 1	2 1	3 7	3 0
Borrow from school	36 1	35 7	35 9	30 3	28 9	29 5
Buy from school	7 5	16 5	11 6	19 7	35 2	27 9
Buy from other place	22 4	28 3	25 1	24 0	25 1	24 6
Borrow from other place	5 3	5 3	5 3	3 6	3 5	3 6
Photocopy textbook	2 8	3 0	2 9	6 5	3 7	5 0
Junior Secondary School						
Bahasa Indonesia						
Receive free textbook	0 9	1 0	0 9	0 1	0 2	0 1
Borrow from school	46 8	46 1	46 4	28 1	34 7	31 6
Buy from school	26 8	28 2	27 5	11 0	21 3	16 4
Buy from other place	31 1	32 1	31 6	31 5	32 1	31 8
Borrow from other place	7 7	9 0	8 4	11 1	9 6	10 3
Photocopy textbook	2 8	2 7	2 7	2 5	4 4	3 5
Mathematics						
Receive free textbook	37 6	37 6	37 6	21 9	22 9	22 5
Borrow from school	26 9	30 7	28 9	9 7	18 5	14 4
Buy from school	28 4	28 6	28 5	31 3	35 5	33 5
Buy from other place	10 6	9 1	9 8	10 9	9 2	10 0
Borrow from other place	4 3	2 0	3 1	3 0	4 0	3 5
Photocopy textbook						

Source IFLS Survey Merged Roster and CFS Data

2 Principal and Teacher Education

Principals and teachers play a pivotal role in the education process Their knowledge of the subject material and of effective teaching methods are important determinants of education quality Therefore, the level and source of principals' and teachers' education are considered important indicators of an education system's quality [37] In general, more education is considered better than less education, and education from a teaching program is considered preferable to a general or non-teaching program

In the CFS, school principals, mathematics teachers and Bahasa Indonesia teachers were asked about the source of their education and the highest level completed The range of possible responses included elementary school through post-secondary teaching programs (e g , two year credential, bachelor of arts, or master of arts) However, very few teachers or principals (less than 1 percent) indicated that they had less than some senior secondary education Therefore, in the figures presented below, their education sources and levels have been collapsed into one of four categories

- SMA (senior secondary) teaching program
- SMA (senior secondary) non-teaching program
- post-secondary teaching education
- post-secondary non-teaching education

Figure 4 18 shows the source and education level of teachers and principals at the schools in the choice sets of children, according to the children's level of per capita household expenditure The top panel indicates that there is very little difference in the education background of elementary school principals and teachers in the choice sets of children from the lower 40 percent and upper 60 percent of the expenditure distribution

The bottom panel of Figure 4 18 shows that, just as with elementary schools, there is essentially no difference in teachers' and principals' educational background, between lower and higher income children The most striking difference between elementary and secondary schools is the higher level of education obtained by junior secondary teachers and principals roughly 90 percent have finished post-secondary teaching or non-teaching programs In contrast, only about 20 percent of elementary school faculty have a post-secondary education This difference between junior secondary teachers and elementary school teachers suggests two policy issues for the Ministry of Education and Culture First, there is substantial room for upgrading and improving the skills of elementary school faculty Second, expanding the supply of secondary school teachers to meet the needs of the new compulsory junior education program, while

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[37] Clearly the curriculum and quality of principals' and teachers' education are also vital components of the education sector s overall quality However this information was beyond the scope of the CFS

maintaining current levels of teacher qualifications, will require providing new faculty with post-secondary education [38]

Figure 4 19 shows the source and education level of teachers and principals at public and private schools in the average choice sets of children In general, the education background of elementary school faculty at public and private schools is quite similar, but public schools have slightly higher percentages of faculty who are educated at senior secondary teaching programs However, there are some substantial differences between public and private junior secondary schools The average faculty education in the choice sets of private schools is less than that in the choice sets of public schools On average, at the public schools more than 90 percent of the teachers and principals have post-secondary teaching education, while at the private schools, only between 60 and 70 percent of the faculty have post-secondary teaching education Once again, this pattern of quality differences between public and private schools conforms to our earlier-stated hypothesis that enrollment in private junior secondary schools is motivated more by limited access to public schools than by a choice for a higher quality school

Finally, Figure 4 20 shows the source and education level of teachers and principals at schools in the choice sets of urban and rural children The average educational background of faculty available to urban and rural children are quite similar, but, on average, urban children have access to faculty with slightly better training than do rural children

3 Principals and Teachers Employed in Second Jobs

Because of low official salaries, unofficial deductions and delays in payment, many principals and teachers have come to rely on income from supplemental jobs or activities The second (or multiple) job phenomena in the education sector comes with both benefits and risks The benefits include lower government payrolls, a teacher recruitment incentive and higher teacher retention rates As long as the time spent in second jobs does not affect a teacher's performance in the classroom, then second jobs will not adversely affect the education sector However, some evidence suggests that teachers' second jobs/activities do have a negative impact For example, some reports indicate that in-service programs are scheduled during regular school hours and that regular classes are being canceled to accommodate teachers after-school secondary employment activities Second jobs may also affect teacher preparation and classroom performance [39]

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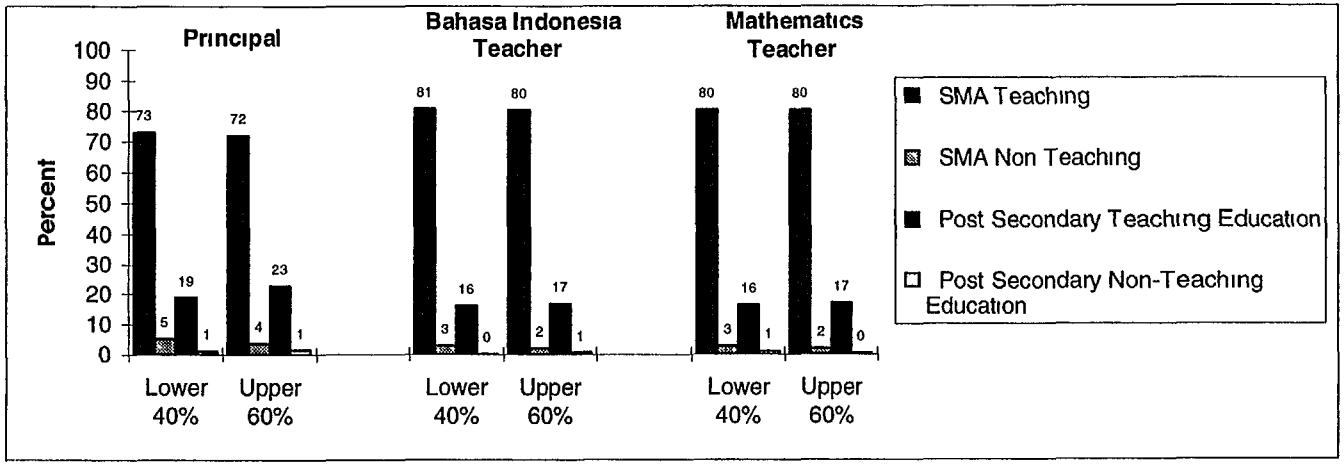
[38] Note both of these policy issues are in line with a current government policy to phase out secondary teacher training institutions

[39] Kemmerer Frances, Dean Nielsen and Patrick Lynch A Review of Teacher Education Issues in Indonesia Jakarta Indonesia Center for Informatics Ministry of Education and Culture, 1990

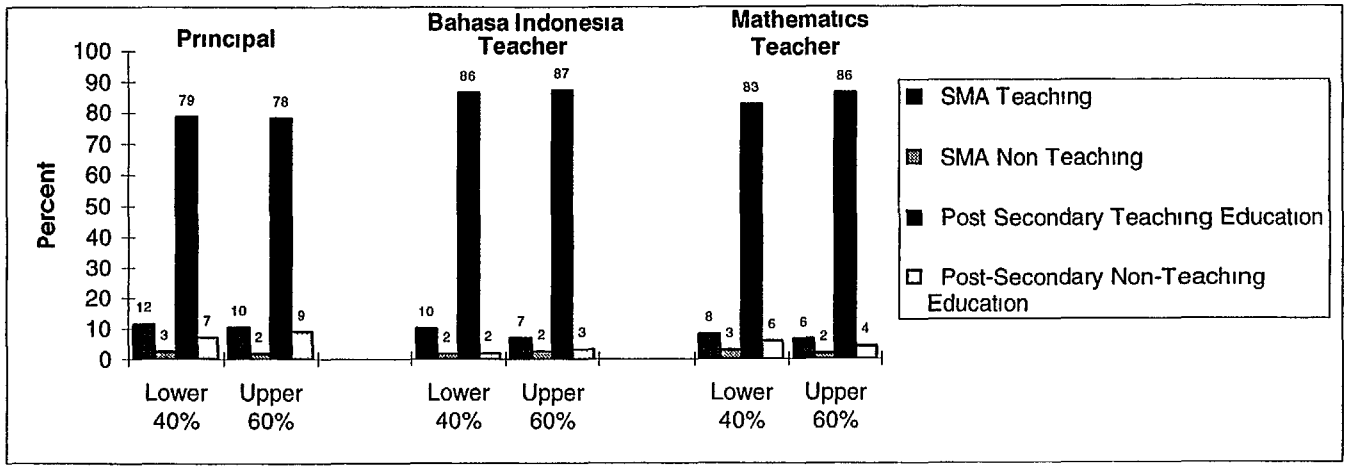
Figure 4 18

Education of Principals and Teachers Average Quality of Schools in Children's Choice Set by Per Capita Household Expenditure Quintile

Elementary Schools



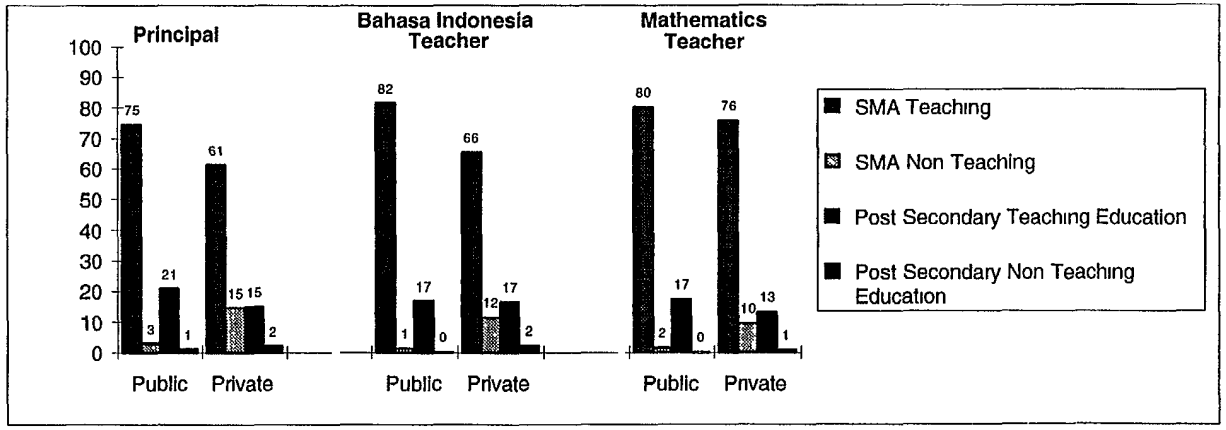
Junior Secondary School

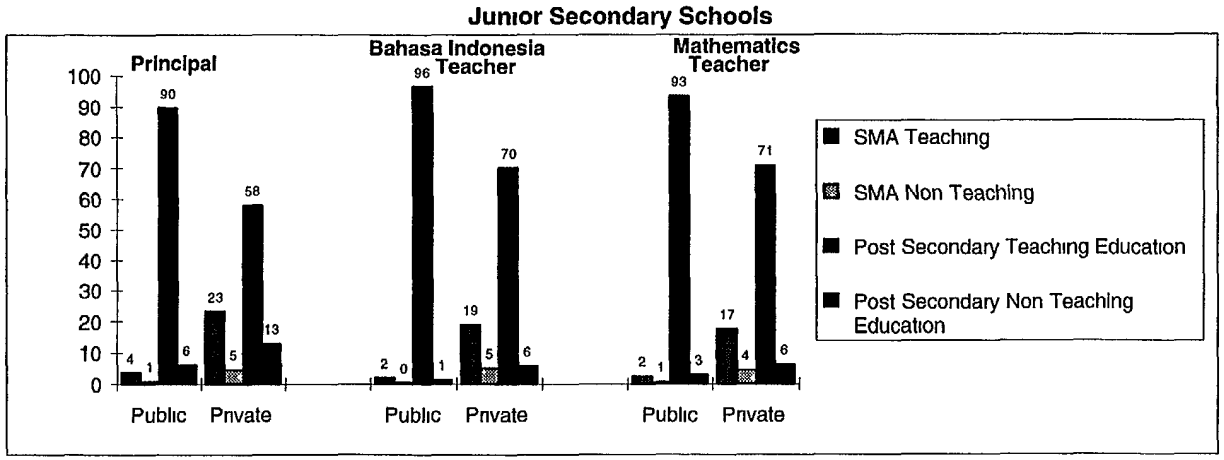


Source IFLS Survey Merged Roster and CFS Data

Figure 4 19

Education of Principals and Teachers in Public and Private Schools Average Quality of Schools in Children's Choice Set

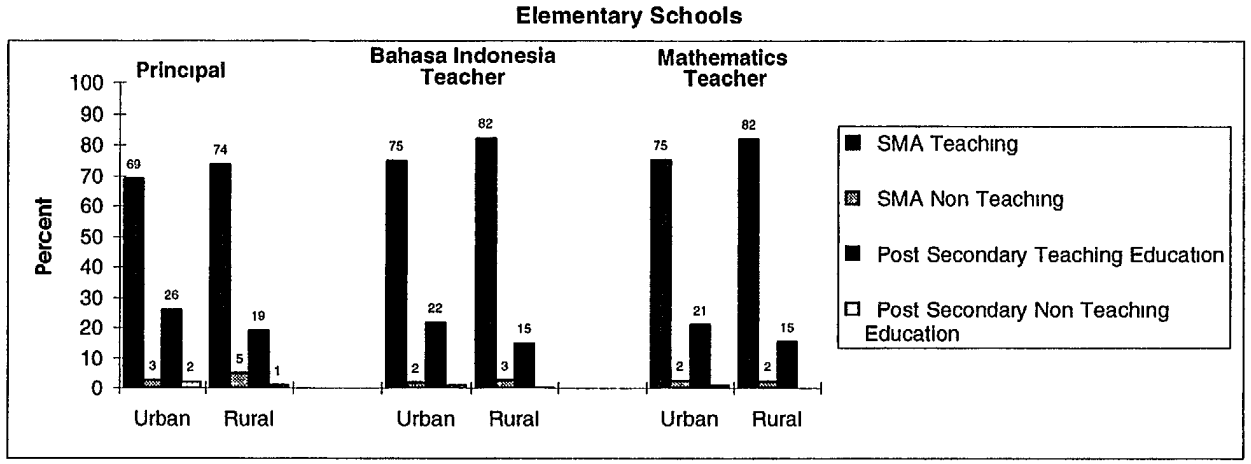


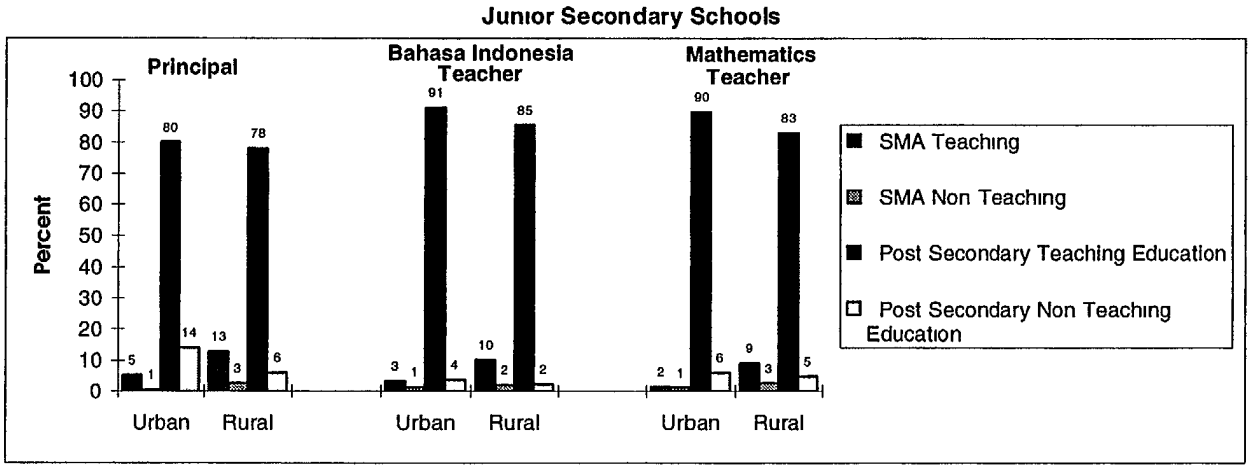


Source IFLS Survey Merged Roster and CFS Data

Figure 4 20

Education of Principals and Teachers Average Quality of Schools in Children's Choice Set by Urban/Rural Residence





Source IFLS Survey Merged Roster and CFS Data

Table 4 11 shows the percent of the sample faculty who hold sescond jobs and the average number of hours per day they work in those jobs For the average choice set of elementary schools (last column), roughly one-third of teachers and principals have one or more additional jobs, where they work for an average of 15 hours per week For the average choice set of junior secondary schools (last column), roughly one-third of principals and one-fifth of teachers have one or more additional jobs, where they work for an average of 18 hours per week One possible reason for the higher percentage of second jobs among elementary teachers is that their salaries are generally lower However, Table 4 11 indicates that despite being more likely to have second jobs, elementary school teachers work at school more hours per week than junior secondary school teachers For example, Bahasa Indonesia teachers in the average choice set of elementary schools (last column) work almost 32 hours per week at the school (where interviewed), whereas Bahasa Indonesia teachers in the average choice set of junior secondary schools work at the school only 21 hours per week

There is no apparent difference in the pattern of second jobs between the average choice sets of schools of lower income children and upper income children This is true for both elementary and secondary schools However, there is a difference in the average choice sets of public and private schools Private school principals and teachers are much more likely to have second jobs and to work fewer hours per week at the school (where interviewed) than public school principals and teachers The two- to three-fold difference in frequency of multiple jobs may indicate large discrepancies in compensation or that a large proportion of private school faculty work at public schools as their main job

4 Classroom Indicators

Table 4 12 shows the average score of several classroom quality indicators at the schools in lower- and upper-income children's choice sets, and also for public and private schools For the average choice set of elementary schools (last column), the average class size is 28 students For the average choice set of junior secondary schools, the average class size is about 39 students One possible reason for this difference may be the greater supply of elementary schools

There is no apparent difference in the class size between the average choice sets of schools of lower income children and upper income children This is true for both elementary and secondary schools However, there is a difference in the average choice sets of public and private secondary schools The average class size in the average choice set of public schools is about 43 students, versus 35 students for private schools

Finally, there is little variation in classroom infrastructure across children from upper and lower income groups between public and private schools, or between elementary and junior secondary schools

Table 4 11

Principals and Teachers Who have a Second Job Average Quality of Schools in Children's Choice Set By Per Capita Expenditure Quintile

	Public Schools	Private Schools	All Schools Lower 40%	All Schools Upper 60%	All Schools Total
Elementary School					
School Principal					
% Has other job	28 8%	51 7%	31 5%	31 9%	31 7%
# Hours/week spends for other job	14 8	18 4	14 9	16 0	15 5
Bahasa Indonesia Teacher					
% Has other job	30 0%	52 8%	32 8%	31 5%	32 2%
# Hours/week work at school	31 9	32 5	31 6	32 1	31 8
# Hours/week spends for other job	14 6	18 0	14 9	15 1	15 0
Mathematics Teacher					
% Has other job	29 4%	53 8%	32 1%	31 3%	31 8%
# Hours/week work at school	31 6	31 0	31 1	31 8	31 4
# Hours/week spends for other job	14 4	16 1	14 3	14 6	14 5
Junior Secondary School					
School Principal					
% Has other job	18 1%	56 0%	34 8%	31 5%	33 1%
# Hours/week spends for other job	13 0	19 4	18 0	16 9	17 4
Bahasa Indonesia Teacher					
% Has other job	20 8%	62 2%	38 3%	36 7%	37 5%
# Hours/week work at school	22 4	17 9	20 6	21 3	20 9
# Hours/week spends for other job	12 9	19 5	17 9	17 4	17 6
Mathematics Teacher					
% Has other job	29 8%	62 1%	41 7%	42 2%	42 0%
# Hours/week work at school	24 0	19 2	21 6	22 8	22 3
# Hours/week spends for other job	15 7	20 2	17 6	18 0	17 8

Source IFLS Survey Merged Roster and CFS Data

Table 4 12

Classroom Indicators in Public and Private Schools Average Quality of Schools in Children's Choice Set by Per Capita Expenditure Quintile

	Public Schools	Private Schools	All Schools		
			Lower 40%	Upper 60%	Total
Elementary School					
Average # students attending Bahasa Indonesia class every day	28 6	29 3	27 3	29 6	28 3
Average # students attending Mathematics class every day	28 6	29 2	27 2	29 5	28 3
Classroom Quality					
Has desk for teacher	1 0	1 0	1 0	1 0	1 0
Has usable blackboard, chalk, etc	1 0	1 0	1 0	1 0	1 0
Has adequate lighting	0 9	0 7	0 9	0 9	0 9
Uses electricity	0 4	0 5	0 3	0 4	0 4
Junior Secondary School					
Average # students attending Bahasa Indonesia class every day	41 8	34 3	38 3	39 5	38 9
Average # students attending Mathematics class every day	43 7	35 0	38 9	40 6	39 8
Classroom Quality					
Has desk for teacher	1 0	1 0	1 0	1 0	1 0
Has usable blackboard, chalk, etc	1 0	1 0	1 0	1 0	1 0
Has adequate lighting	0 9	0 9	0 9	0 9	0 9
Uses electricity	0 8	0 6	0 7	0 8	0 7

Source IFLS Survey - Merged Roster and CFS Data

I Conclusion

In this chapter, we have used the IFLS Survey data to examine several aspects of the government's education policies and programs Although only using descriptive analysis, this chapter highlights many of the successes of Indonesia's education policies and provides insights into several areas of concern The chapter also emphasizes the complex interactions between the government's education programs, family decisionmaking, and the social goals of increased educational attainment, greater equity and improved quality We also noted the importance of controlling for self-selection bias when summarizing the current patterns and trends and when attributing these patterns and trends to specific underlying factors

Finally, this chapter has demonstrated the potential value of the IFLS data to the government's education policies and programs This potential can best be achieved by bringing together policy analysts and government officials, so that they can jointly design and implement comprehensive multivariate analyses of the IFLS household and school data

Chapter 5

Summary of Findings and Policy Questions for Further Analysis

A Introduction

In the preceding three chapters we presented detailed findings from analysis of population, health and education data from the IFLS In this chapter, we synthesize these findings, highlight many of the important policy issues, and suggest future, more in-depth analyses to address policy questions raised by these preliminary findings

Section B presents key findings and future research questions from the analysis of population issues presented in Chapter 2 Similarly, Section C focuses on health policy and Section D on education

B Key Population Findings and Future Research Questions

1 The Indonesian family planning program continues to achieve contraceptive prevalence rates of well over 50 percent among currently-married women

About 57 percent of currently-married and not-pregnant women are using some form of contraceptive, [40] and all but 2 5 percent of these women are using modern methods The two most commonly used methods are pills and injections, followed by IUD, female sterilization and implants

The modern contraceptive prevalence rate is substantially higher in Java-Bali than Outer Java-Bali, 1 57 percent versus 46 percent All of this difference is accounted for by just two methods contraceptive injection and IUD

- **Contraceptive use is substantially higher in urban areas than in rural areas**

The overall contraceptive use rate is 63 percent for urban women and 53 percent for rural women This difference reflects the higher use of long-term methods in urban areas, 22 percent versus 15 percent

Understanding the determinants of these patterns and levels of contraceptive use is an important step in designing effective family planning activities Demand factors that are likely to be important include age, educational attainment, age at first marriage, number and age of children, family income and woman's wage rate Supply factors that should be considered

[40] The contraceptive use rates reported here are for currently-married and not-pregnant women However, for ease of presentation we refer to these women simply as currently-married

include access to family planning providers (e g , availability of public and private providers, travel time and costs), prices of family planning services and contraceptives, and quality of family planning services (e g , availability of alternative methods, provider-client interactions, providers' technical skills) In addition, the family planning program conducts social marketing and other demand creation activities The IFLS household and CFS data provide measures covering most of these factors, which can support analysis of the determinants of contraceptive use rates

2 Women with higher levels of per capita household expenditure (or incomes) have higher contraceptive prevalence rates

Contraceptive prevalence rates increase across per capita household expenditure quintiles from 49 percent for the poorest quintile to 62 percent for the wealthiest quintile The largest increase occurs between the poorest and second quintile, increasing from 49 percent to 56 percent, due to increases in the use of IUD, injection and female sterilization methods

- **There is a dramatic negative association between the percentage of women who have never used family planning and per capita household expenditures**

Over 35 percent of the women in the poorest quintile are never-users, with the number declining to approximately 20 percent in the highest expenditure quintile Thus, the positive association between current use and expenditure levels is <u>not</u> explained by higher discontinuation rates among low-income women Rather, low-income women are more likely to have never used contraceptives

There appears to be an important relationship between income, contraceptive use and mix of methods However, a multivariate analysis of the determinants of contraceptive use is needed to better understand this relationship and its implications for family planning policies For example, to what extent does this positive association reflect the targeting system of the government programs or a demand-driven income effect? Are urban contraceptive prevalence rates higher than rural rates because of higher average incomes of the urban population, or because contraceptives are more available and less costly to obtain in urban areas? To what extent does the positive association between contraceptive use and income reflect different fertility preferences? Are the price elasticities of demand for contraceptives higher for the poor than the nonpoor? How much do these price elasticities differ by contraceptive method?

3 Women who use short-term contraceptive methods have different socioeconomic characteristics than women who use long-term methods

Women who use short-term methods tend to be younger and to have fewer children than women who use long-term methods However, women who use long-term methods are more likely to live in urban areas and to have higher education and incomes than women who use short-term methods

Further analysis of the IFLS household and community data can produce practical and significant information for planning programs, enabling them to motivate more-extensive of long-term methods For example, what factors determine whether married couples who have achieved their desired family size use long-term or short-term contraceptive methods? Do higher use rates of long-term methods by higher income, urban women reflect a greater preference for long-term methods by these women, or better access, especially to female sterilization, which is generally performed in hospitals? How can policies be structured and targeted to encourage couples to use long-term methods (e g , provide subsidies or improve the supply)?

4 There is a very high level of awareness of family planning methods

Nearly 97 percent of all currently married women of reproductive ages have heard of at least one modern contraceptive method This high level of awareness extends across all age groups between 15 and 49 years, across urban and rural areas, and across income levels Furthermore, only 3 percent of women who have stopped using contraceptives indicate lack of knowledge was an important factor in their decision to discontinue family planning

- **Yet, lack of knowledge may be an important factor in why some currently-married women have never used family planning**

There is wide variation in the levels of awareness of specific modern methods The contraceptive pill is the most commonly heard of method (94 percent), closely followed by contraceptive injection (89 percent), and IUD (82 percent) Roughly 60 percent of women have heard of condoms and contraceptive implants While only 48 percent of all currently-married women are aware of female sterilization and 27 percent are aware of male sterilization

While virtually all currently-married women have heard of at least one method, 24 percent of women who have *never* used contraception indicate lack of knowledge as a primary reason This suggests that about 7 percent of all currently-married women do not feel they have enough specific information to make a decision about whether to use family planning

These knowledge patterns may reflect numerous factors, including characteristics of the family planning program, different geographical patterns in the supply of contraceptive methods, differential access to the media, differences in the level of education, or underlying fertility preferences Further analysis of these contributing factors can provide valuable information for the planning and targeting of the family planning program's social marketing activities

5 Almost 75 percent of currently-married women have used family planning, but there is considerable variation across contraceptive methods, indicating that women often switch between methods

The ratio of women ever using a modern method to women currently using a modern method is one-third However, 2 4 times more women report ever having used contraceptive pills than are currently using contraceptive pills Similarly, 2 1 times as many women report ever use of IUDs and contraceptive injections than report current use These differentials indicate that

there is considerable switching among reversible alternative modern methods The one possible exception to this pattern is contraceptive injections, with only 1 4 times more women reporting ever use than current use This lower ratio may reflect (1) the recent expansion in the distribution of implants, so that many women have had the implants inserted for fewer than the implant's life expectancy, and (2) limitations in the availability of trained personnel to remove the implants

The IFLS provides a rich information base for analyzing the patterns of contraceptive discontinuation and switching First, the contraceptive calendar (described in Chapter 1) collects up to 10-year histories of contraceptive practice for each ever-married women, including month and year each method was used With these data it is possible to identify whether women who stop using one particular method switched to another method, how much time passed between stopping one method and starting another, and some of the reasons for stopping or switching methods In addition, the contraceptive calendar data can be combined with the detailed demographic and socioeconomic data on the women and their families, as well as information from the CFS provider survey, and support many analyses examining the dynamics of family planning, including the duration of family planning use, the determinants of discontinuation or switching, the impacts of discontinuation on fertility, and policy options for reducing discontinuation

6 Women who use contraceptives do not receive sufficient information concerning possible side effects

In addition to increasing access to and utilization of family planning services, the Indonesian family planning program is also concerned about continuing to improve the quality of these services One important dimension of quality is the information given by providers to clients on the possible side effects associated with each contraceptive method Only 63 percent of current users of modern methods indicate that they have received information on possible side effects from their provider Further, women with lower educational attainment and lower incomes appear less likely to receive information on side effects

- **Nearly one-quarter of women who are former contraceptive users indicate health concerns were a major reason for discontinuing use**

This finding provides indirect evidence that women are not receiving adequate information on side effects (e g , information that enables women to identify early warning signs of complications, and instructions on steps to follow should a side-effect develop) and possibly on high rates of side effects

Further analysis of the IFLS data can provide the family planning program with information on the incidence of side effects, the extent that side effects contribute to women's decisions to discontinue or switch family planning methods, and the influence of provider quality

7 Quality of care plays an important role in family planning outcomes

This report presents a preliminary analysis of only a portion of the IFLS family planning and population data One important component not included is the CFS provider quality data These data, combined with the household data, are particularly valuable for studying the impacts of quality of care on various family planning outcomes client satisfaction, contraceptive use, contraceptive continuation and, ultimately, fertility

For example, client knowledge, satisfaction and contraceptive use are directly determined by (1) the price and availability of services, (2) the quality of the chosen family planning services, and (3) the socioeconomic and demographic characteristics of women and their families To accurately measure the impact of quality on family planning outcomes, one needs to be able to measure the indirect selection effects (i e , the choice of providers) Ignoring who chooses higher quality services, and why, may lead to either an over-estimate or under-estimate of the role of quality in family planning outcomes For example, if individuals who choose higher quality providers are more committed to controlling child spacing and family size, then ignoring the selection effects will lead to an overestimate of the role of quality on contraceptive use and fertility

Because the IFLS contains comprehensive measures of household and individual characteristics, as well as comprehensive price and quality measures of the available family planning providers, the data are able to support statistical modeling and estimation of the following policy questions

- Are contraceptive acceptance and continuation rates affected by quality of family planning services? What is the magnitude of the overall effect?
- What specific dimensions of quality have the greatest effect on contraceptive acceptance and continuation rates?
- What is the magnitude of the effect of quality on fertility rates?
- How does the influence of quality differ by socioeconomic and demographic subgroups?

8 Pricing policies for family planning services and contraceptives must be carefully considered

Pricing of family planning services and contraceptives can dramatically affect key policy goals contraceptive prevalence rates, cost recovery, and equity The problem is implicated by the fact that these policy goals may be in conflict with each other For example, increasing prices, while holding costs constant, will increase the percentage of cost recovery, but it will reduce prevalence rates (especially among the poor), increase the financial burden of family planning on poor households, and will lead to higher-income groups consuming a larger share of the public subsidies for family planning As the government attempts to expand private sector financing and

participation in family planning ("KB Mandiri"), it will need new information to guide price-setting policies For example, what pricing policies can the government employ to insure that those who cannot pay are not lost to the family planning movement?

Furthermore, as the government strives to improve the quality of family planning services, the cost of these services will increase To what extent can the government depend on private resources to cover these higher costs? How will higher prices for higher quality of care affect access to providers and contraceptive prevalence rates among different socioeconomic groups?

In order to accurately address these questions, knowledge of the price elasticities of demand among different income groups is required The IFLS data can be analyzed to provide these price elasticities for various public and private providers, as well as the cross-price elasticity estimates between providers

C Key Health Findings and Future Research Questions

In this report we focused on two health policy areas maternal health care services utilization and health insurance coverage

1 High-risk mothers are still not receiving adequate prenatal care

The most common site for receiving prenatal care was the puskesmas and puskesmas pembuntu, where approximately 37 percent of the mothers went for prenatal care services The second most popular location was the private midwife office and clinic However, 21 percent of women did not receive any prenatal care With respect to age of mothers, women 35 to 49 years old were the least likely to receive prenatal care Of women in this age group, 28 8 percent received no prenatal care, compared to approximately 20 percent of the mothers aged 34 years or below

This indicates an important challenge for the Indonesian health care system, since it is likely that mothers age 35 to 49 represent the majority of high-risk births In the short-run, government health programs could be targeted more directly to this group Future research based on IFLS data could examine the reasons why women, especially older women, do not receive adequate amounts of prenatal care (e g , low incomes, poor access, low levels of education)

2 Rural areas still lack adequate prenatal care

Women in urban areas were more likely to receive prenatal care than women in rural areas Only 10 percent of the women in urban areas did not receive prenatal care, while nearly 26 percent of the women in the rural areas received no prenatal care In the urban areas, there is also greater utilization of all higher levels of modern health care urban women are much more likely to receive prenatal care from hospitals, private doctors, or private midwives

The challenge for health planners is to ensure that all women, regardless of location, have adequate access to prenatal care services Further analysis of the IFLS data can help the

government improve targeting of future programs, identify those with the lowest access and improve the allocation of resources on that basis Future analyses might focus on the determinants of utilization of prenatal care, the choice of provider and the role that an expanded health insurance system might play

3 Mother's education is an important determinant of prenatal care utilization

Women with higher levels of educational attainment utilize prenatal care services more than women with lower levels of education (especially in the case of hospitals and private doctors and midwives) Roughly 45 percent of mothers with no education, and 25 percent of women with some elementary school education, received no prenatal care Less than 10 percent of women with at least some junior secondary education went without prenatal care

Targeting mechanisms must recognize that low educational attainment is a barrier to utilization and must be designed accordingly (e g , written material may be ineffective) However, education is oftentimes highly correlated with income, and thus it is possible that some of the educational effect may be in fact related to income Health policy analysts in Indonesia can use IFLS household and health provider data to conduct multivariate analyses that will separate the effects of education, income and access and help them determine the relative contribution of each to differences in utilization

4 The majority of births occur at home

Nearly three-quarters of births in Indonesia still occur at home The most popular location of birth outside the home is the private midwife office and clinic, where an estimated 11 percent of births occurred There is no significant difference in the pattern between the age groups However, rural women and women with lower educational attainment are much more likely to give birth at home Roughly 85 percent of rural women deliver at home, versus 45 percent for urban women Similarly, over 85 percent of women with less than a primary school education deliver at home, versus only 41 percent of women who have graduated from junior secondary school

This finding raises some concerns about the efficacy of the referral system, especially in rural communities Analysis of the IFLS household and health provider data can highlight many of the factors leading to the observed disparities, such as maternal income and education, or prices, travel times and quality of care

5 Health insurance from all sources covers only a small percentage of the population

Health insurance coverage is currently quite narrow in Indonesia, with less than 14 percent of the population reporting coverage during the IFLS study period However, the data reveal significant positive effects on utilization and access, suggesting that expansion of health insurance has important implications for policy development in Indonesia The largest provider of health insurance coverage is the ASKES program for government workers, which covers 9 4 percent of the IFLS study population, while less than 1 percent of the study population reported coverage by

the ASTEK, the mandatory program of private employer-provided insurance Another 5 percent of the population reported private employer-provided health insurance coverage in the form of medical allowances or workplace clinics It is expected with the passage of recent legislation in Indonesia mandating health insurance for employees of large companies that the number of people with private insurance coverage will increase dramatically in the future

- **Urban residents have much higher rates of coverage than do rural residents**

A full 25 percent of the urban population have some kind of health insurance coverage, compared to only 7 percent of the rural population While the urban/rural difference holds regardless of the source of coverage, the gap is especially large for employer-provided coverage (ASTEK and private)

- **There is very little difference in terms of male versus female insurance coverage rates**

Roughly 14 percent of males and 13 percent of females report health insurance coverage Furthermore, there is very little gender difference by source, suggesting that both men and women are provided similar types of coverage regardless of their work status Future analysis of IFLS data could be designed to look at this issue more directly by investigating employment patterns by gender in relation to health insurance coverage and the types of benefits offered

- **As the level of educational attainment increases, the level of health insurance coverage also increases**

Less than 6 percent of the population that has not graduated from elementary school reports any form of health insurance coverage However, the rate increases dramatically with educational attainment 11 percent of elementary school graduates, 20 percent of individuals with some junior secondary education, and 40 percent of individuals who have minimally completed junior secondary school This same pattern prevails for all sources of health insurance coverage This indicates that individuals with better education are currently employed in the sectors and with the firms that are more likely to offer health insurance

- **Prime-age adults are more likely to be insured than children or the elderly**

There is very little variation in the coverage rates for children 0 to 14 years old and adults over 49 years, with both groups averaging about 11 percent covered In comparison, 14 percent of young adults aged 15 to 29 years, and 18 percent of adults 30 to 49 years old, report health insurance coverage One possible explanation for this pattern is the employment status of young and prime-age adults

- **People with higher per capita household expenditures (or incomes) tend to have higher insurance coverage levels**

Among the poorest quintile, only 4 percent of individuals are covered by health insurance The percentage of individuals covered increases sharply with income, reaching 33 percent among

individuals in the wealthiest 20 percent of the expenditure distribution This pattern is consistent for all sources of health insurance coverage

6 Expanded health insurance coverage can increase utilization and access to health services, as well as private expenditures for health care

Individuals with insurance coverage have substantially higher utilization rates than individuals without insurance 50 percent higher for outpatient visits and 300 percent higher for inpatient admissions Individuals with government-provided health insurance visit public providers much more than do individuals with private insurance or no insurance Individuals with private insurance use both public and private providers more than the uninsured population, and those with private insurance tend to use private providers more than do those who have government insurance

Insurance coverage increases utilization similarly for both men and women, as well as across most age groups Interestingly, insurance does not increase the relatively high visit rates of children 0 to 4 years old, but insurance more than doubles the visit rates for adults age 65 years or older Since individuals with higher incomes have higher utilization rates and are more likely to have insurance, part of the positive association between insurance and utilization may be due to income effects Yet, in the descriptive analysis presented here, insurance coverage equalizes visit rates across the per capita household expenditure distribution A more complete, multivariate analysis is required to more accurately measure the relationship between income, insurance coverage and utilization

These findings should be of particular interest to the Indonesian government because they suggest a potentially significant contribution that expansion of health insurance could play in terms of increasing access to health services and equalizing access Further analysis of the IFLS data will assist in the understanding of (1) access to health insurance, (2) the influence of health insurance on health care utilization and expenditures, (3) the financial implications of health insurance for the public health sector, and (4) future demand for health resources

For example, a critical issue related to the government financing of health care is how to better target government subsidies to those who are most in need The expansion of the private health insurance industry can benefit not only the middle class employed population covered by insurance plans, but can contribute toward the nation's social financing goals With private resources helping to pay for services delivered to the employed population, it is possible that government resources can be redirected away from the middle class and other less needy groups to the indigent and other vulnerable segments of the population However, to achieve this goal the government needs to better understand the influence of insurance on the demand for health care by different socioeconomic groups and the choice between public and private providers Analysis of the IFLS can address many of the important policy questions For example

- What is the magnitude of the effect of health insurance on overall utilization and expenditures?

- Does choice between public versus private providers vary as a function of health insurance status and income level? How is health insurance likely to affect the incidence of government subsidies for health care?

- Do individuals with health insurance choose higher quality health providers?

- Does the choice between public and private providers depend on type of illness or type of service? Is this pattern of health-seeking behavior affected by health insurance status?

- How will growth in health insurance influence future levels of national health care expenditures? How will expenditure effects differ by income, gender, and other important social and demographic groups?

D Key Education Findings and Future Research Questions

1 Although the Government of Indonesia has successfully raised overall elementary school enrollment rates to about 90 percent, enrollment rates for poor children still lag behind

The government has made substantial progress in improving poor children's access to elementary schools, but still only 84 percent of elementary school-aged children from the poorest 20 percent of households are enrolled in school In contrast, enrollment rates for children from the wealthiest 40 percent of households are at 97 percent A closer look at these enrollment rates revealed that this discrepancy was principally confined to rural areas Poor children, 7 to 12 years old, living in urban areas are enrolled in elementary schools at rates almost equal to the rates for all 7 to 12 year-old urban children, at about 95 percent However, only 81 percent of poor children living in rural areas are enrolled in elementary school

Understanding the underlying causes of this enrollment gap is essential before the government can design effective programs to close the gap, the answer may not be a matter of simply building more schools Differences in both the direct costs and indirect costs of children's education may well explain part of the rural poor's lagging school enrollment rates

- **Elementary school fees and expenses do not appear to be a substantial barrier, even for most of the poor**

Families from the lowest 40 percent of the per capita household expenditure distribution reported paying an average elementary school entry fee of only Rp 5,900 In addition, these same families reported paying average annual school fees of less than Rp 25,000 (or about Rp 2,000 per month) and other school-related expenses (including books, supplies, tutors and transportation) of only Rp 22,000 (or less than Rp 2,000 per month) These expenses would

appear to be affordable by even most families from the poorest 20 percent of the household expenditure distribution, whose average per capita expenditure is Rp 16,930 per month [41]

- **Elementary school graduation rates of rural children lag behind those of urban children**

At age 12 years, 58 percent of urban children have graduated from elementary school, versus only 18 percent of rural children By age 16 years this urban-rural gap narrows to 93 percent versus 85 percent

- **Poor children in rural, but not urban, areas have less access to elementary schools (longer travel times) than nonpoor children**

Rural children from the lowest 40 percent of the per capita household expenditure distribution have slightly longer travel times to elementary schools than do their urban counterparts, 16 minutes versus 12 minutes The poor rural children also have longer travel times than nonpoor rural or urban children However, these differences are not large, and it is not clear from the descriptive analysis how much of the enrollment rate difference is explained by these longer travel times

There are many other factors that may influence the enrollment gap between poor rural children and all other children Poor rural families may rely more on their children's labor On the other hand, families' preferences for education and the rate of return to education may vary between urban and rural communities Furthermore, school quality may differ between poor rural areas and other areas, affecting the rates of return to education, as well as overall perceptions of the value of education Finally, poor families may be more price sensitive to schooling costs, and therefore higher schooling costs (e g , transportation costs) may cause them to enroll proportionally fewer of their children than the nonpoor Future analyses of the determinants of elementary school enrollment using the IFLS household and CFS data can address these policy questions and guide strategies for most effectively reaching the poor children not currently enrolled (for example, build more schools or build better roads, permit more flexible school hours, or provide subsidies for direct school costs)

2 Junior and senior secondary school enrollment rates are well below elementary school enrollment rates, especially for poor and low-income children

The age-specific enrollment rates for children 13 to 15 years old and 16 to 18 years old are 0 67 and 0 41, substantially below the 0 92 age-specific enrollment rate for children 7 to 12 years old In addition, the enrollment rates for secondary school-aged children rise sharply throughout the income distribution For example, the enrollment rate of children 13 to 15 years old from the wealthiest quintile is 0 86, which is 76 percent higher than the 0 49 enrollment rate

[41] These self-reported prices are not adjusted for quality differences among schools and lower fees reported by the poor in comparison to the overall population suggests that their may be quality differences (i e the poor may attend schools of lower quality)

for the poorest quintile For children 16 to 18 years old, there is a fourfold difference in the enrollment rates between the poorest and wealthiest quintiles, 0 17 versus 0 69 These differences suggest that the expense and accessibility of secondary schools may adversely affect lower-income populations' enrollment in school

- **Junior secondary school fees and expenses may be a substantial barrier, especially for the poor**

Families from the lowest 40 percent of the per capita household expenditure distribution report paying entrance fees to junior secondary schools of nearly Rp 30,000 In addition, these families report paying annual school fees averaging Rp 100,000 and other school-related costs of Rp 66,000, for total annual school expenditures averaging Rp 166,000, or roughly Rp 13,800 per month [42] The Rp 13,800 monthly school expenditures represents a large proportion of the average per capita monthly expenditures of these households For example, the average monthly per capita expenditure of families in the lowest quintile equals only Rp 16,900 Therefore, the level of "required" expenditures for junior secondary education is likely a primary factor explaining low junior secondary enrollment rates among the poor and lower-income populations

- **Many children face lengthy travel times to junior secondary schools**

The average travel times to junior secondary schools are substantially longer than those to elementary schools The overall average travel time reported by students attending junior secondary schools is 24 minutes, which is 75 percent longer than the average travel times reported by students attending elementary school The direct and indirect costs of these longer travel times may be an important deterrent to junior secondary school enrollment

Finally, a more complete answer to these issues requires estimating a demand for junior secondary education, using an empirical model that permits price elasticities to vary by income level and that accounts for variations in travel costs and school quality Results from such an analysis would provide quantifiable estimates of how changes in school fees and expenses would affect enrollment rates The combined IFLS household and CFS data can support such an analysis One particular advantage of using the combined household and facility data is that they permit analysts to correct for the self-selection bias in self-reported prices, travel times and school quality

3 There are important urban-rural and expenditure-distribution differences in junior secondary and senior secondary enrollment rates

First, 13 to 15 year old urban children from the lowest 40 percent of the expenditure distribution have substantially lower age-specific enrollment rates than urban children from the

[42] As discussed in Chapter 4 these reported fees are likely to underestimate the true cost of schooling facing the poor since these expenditures are those incurred by the 50 percent of children attending school The 50 percent of poor children not enrolled in school may not be enrolled because their families could not afford the fees This self-selection bias suggests that those who are enrolled in school faced lower average fees and expenses than those not enrolled

three top expenditure quintiles—roughly 0 65 versus 0 86 Second, enrollment rates do not increase with expenditure level for urban children from the top three quintiles Third, enrollment rates among rural children from the two poorest quintiles are much lower than their urban counterparts—0 48 versus 0 65 Finally, rural enrollments for the top three quintiles increase with higher per capita expenditures, so that rural children from the wealthiest quintile have enrollment rates nearly equal to their urban counterparts

Although lower, the pattern in age-specific enrollment rates for 16 to 18 year old children is quite similar to that of 13 to 15 year old children, with one exception Enrollment rates for urban children from the middle income groups increase sharply with income

- **Rural children's travel times to junior secondary schools are longer than the travel times for urban children**

Overall the travel times for rural children are almost 28 minutes, while the travel times for urban children are less than 20 minutes The average rural and urban travel times differ very little for high and low income children

These findings indicate that the government's program for compulsory junior secondary education, and efforts to increase senior secondary enrollment, will have to make special efforts to increase enrollment rates among (1) poor and near-poor urban children, (2) poor and near-poor rural children, as well as (3) middle income rural children As described above, differences in the direct and indirect costs of children's education may partially explain the urban and rural difference in enrollment rates Multivariate models of the determinants of enrollment accounting for these direct and indirect costs, as well as school quality and families' preferences for education can help the government design more efficient and effective strategies to increase enrollment rates, especially among the poor and low-income populations Alternative strategies which can be evaluated include

- reducing or eliminating school fees (e g , admission fees, examination fees, book fees)
- implementing price discrimination strategies to reduce fees for specific groups (e g , means-tested scholarships or different prices across geographic areas)
- providing subsidies (vouchers) for families' out-of-pocket school-related expenses (e g , books, supplies, Parent-Teacher Association fees, transportation)
- decreasing the distance or travel times to schools (e g , building more schools, providing school buses, or improving roads)
- developing strategies to accommodate children's involvement in household enterprises and labor force participation (e g , flexible school scheduling to accommodate peak agricultural work periods)

4 There is very little difference in male and female enrollment patterns for elementary school, while there are differences for junior and senior secondary school

Elementary school enrollment rates are essentially equal for boys and girls, 0 93 versus 0 92 Furthermore, there are no significant gender differences across the per capita expenditure distribution [43] Yet gender differences do exist for children 13 to 15 and 16 to 18 years old The 13 to 15 year old age-specific enrollment rate is 0 69 for males, while for females the rate is 0 64 The gender differences across the expenditure quintiles display an interesting pattern The largest gap is for the poorest quintile, for whom the male enrollment rate is about 35 percent higher than the female rate—0 56 versus 0 42 The gap disappears for the middle-income group, and then re-emerges for the highest-income group—0 94 versus 0 80 A similar pattern also exists in the enrollment rates of 16 to 18 year old children

The secondary school enrollment gap between boys and girls from the top expenditure quintile is puzzling and does not conform to expectations that gender differences are more likely to emerge when families' resources are more limited Multivariate analyses, which simultaneously control for social, demographic and economic characteristics of the families and children, may help to explain this pattern

- **Other indicators of possible gender bias reported in this study include average school fees paid and travel times to schools**

This study found that the reported school fees and other school-related costs paid by parents do not differ between boys and girls in either elementary or junior secondary school This would suggest that the parents who are sending their children to school are spending equal amounts on the education of their sons and daughters However, these descriptive results are not sufficient to conclude that these parents are investing equally in girls' and boys' education The descriptive analysis does not control for quality differences, or for the fact that parents who send their daughters to school are likely to be different from parents who do not send their daughters to school

The analysis of travel times found that there are no differences in the reported times boys and girls spent traveling to elementary school, the average time for boys and girls is about 14 minutes However, travel times to junior secondary school are substantially longer than to elementary school, and parents appear willing to let their sons travel longer than their daughters For example, the average travel time for boys from the lowest 40 percent of the expenditure distribution is 28 minutes, whereas the average travel time for girls in the lowest 40 percent of the distribution is only 21 minutes If parents are unwilling to let girls travel as long or as far as they are willing to let boys travel, then this would result in lower enrollment rates for girls, and perhaps girls being enrolled in lower quality schools [44]

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[43] Controlling for expenditure levels is important, because one expects the likelihood of gender bias to be higher among lower-income families Lower-income families are more likely to face resource constraints that may force them to choose among their children to be educated

[44] Possible reasons for the gender differences in travel times include parents concerns about safety, local norms of acceptable behavior for girls, or differences in the opportunity cost of girls and boys time

Further analysis of the IFLS data will help to shed light on the gender gap in secondary school enrollment among the poor and low-income populations A more complete (multivariate) analysis of the determinants of enrollment would likely reveal important factors influencing parents' decisions to enroll their sons and daughters This information could then be used to guide policies that the government might implement to equalize male and female enrollment rates For example, do poor parents show different price sensitivities for their sons' and daughters' education? Are there differences in their sons' and daughters' opportunity cost of time? Are parents simply more willing to let their sons travel greater distances to school than their daughters? The answers to these types of questions are important for choosing among alternative policies—for example, providing subsidies or building more schools

5 Enrollment patterns in public and private schools may reflect differences in access and quality

Nearly all of the increase in elementary school enrollment between the poorest quintile and the second quintile is due to increased enrollment at public schools However, for children from the top three quintiles there is a substitution of private schools for public schools All of the increases in private school enrollment rates for the top three quintiles are offset by decreases in public school enrollment rates As a result, the private school enrollment rate is a much smaller percentage of total net enrollment for the poorest quintile than for the two wealthiest quintiles (5 percent versus 16 percent)

A very different pattern exists for junior secondary public and private school enrollment In particular, almost all of the increase in the net enrollment rates from the lowest to highest expenditure quintiles are due to increased enrollment at public schools As a result, private school enrollment represents a higher percentage of total net enrollment for the poorest quintile than any other quintile For example, private junior secondary enrollment accounts for 47 percent of total net enrollment of the poorest quintile, but only 21 percent for the wealthiest quintile

These findings suggests that the choice of private elementary schools by higher income families represents a choice for higher quality, as opposed to improved access In contrast, enrollment in private junior secondary schools may be motivated more by limited access to public schools than by a choice for a higher quality school This hypothesis is supported by much of the school quality data from the CFS For example

- **Students attending private elementary schools have more access to textbooks than students attending public elementary schools The opposite pattern is true for junior secondary schools**

- **The education background of elementary school faculty at public and private schools is quite similar However, the average education of faculty at private junior secondary schools is less than that of public school faculty**

A multivariate analysis of school choice using the combined IFLS household and CFS data can determine the individual effects of school expenses, quality and access on parents' decisions to

send their children to public or private schools Furthermore, this analysis can test whether the poor and nonpoor respond differently to these factors and can provide guidance to the government as it undertakes the planned expansion in the number of public junior secondary schools and encourages an expansion of private schools

Improvements in school quality (e g , curriculum changes, improvements in teacher qualifications and textbook availability), as well as the expansion of compulsory junior secondary education, will require a large increase in government expenditures The pace of the overall reforms may be limited by the government's ability to commit additional resources Children's families are already important contributors to school revenues, but it is uncertain to what extent they will be willing or able to contribute additional resources The IFLS data can support analysis of household's *willingness to pay* for improved access to junior secondary school, improvements in school quality, and additional years of schooling for their children The first step in this analysis would be to estimate the price elasticities, and cross-price elasticities, of demand for public and private schools Because higher-income households are likely to behave differently from lower-income households, the analysis should be structured to estimate willingness to pay by different socioeconomic groups

E Conclusion

Two primary objectives of this report are to disseminate information about the IFLS to policymakers and the academic community in Indonesia, and to demonstrate that the IFLS contains much valuable and practical information relevant to many important policy issues in Indonesia However, the potential value of the IFLS can only be realized with the active participation of Indonesia policymakers and analysts who can identify and help design and implement in-depth analyses of policy questions important to the government The findings and research questions outlined in this report are presented as a first step in this process

Appendix A

Comparison of the IFLS and the SUSENAS

The IFLS was constructed to complement other Indonesian surveys—most notably the National Socioeconomic Survey (SUSENAS) The SUSENAS is designed to collect a basic set of information on a large sample of respondents, and to provide statistically reliable estimates at the district (kabupaten) and province level As such their primary function is to provide descriptive welfare indicators—e g , the distribution of income, school enrollment rates by income, and contraceptive prevalence rates On the other hand, the IFLS was designed to collect in-depth information on a wide range of welfare indicators and their determinants, in order to support behavioral modeling of household and individual decision making and their responses to government programs The IFLS was not designed to provide statistically reliable provincial estimates Below we highlight some of the key differences between the IFLS, and the SUSENAS surveys

Comparison between the IFLS and SUSENAS

- *Sample Size* The SUSENAS sample size is a little more than 200,000 households in all 27 provinces The IFLS sample size is 7,000 households from 13 provinces

- *Household Members Interviewed* The SUSENAS interviews all adult household members, and collects information on children from a parent or guardian The IFLS collects basic demographic and socioeconomic information on all members of the household, and interviews more extensively a sample of adult household members In addition, sampled mothers are interviewed specifically about their children

- *Simultaneous collection of socioeconomic and non monetary welfare data* Both the SUSENAS and IFLS simultaneously collect socioeconomic, demographic, health, education and family planning data However, the IFLS collects a wider range of this information, and in greater depth [45]

- *Measures of children's health and nutrition* The SUSENAS and IFLS both collect information on children's health, including weight and height, infant feeding practices and parent-reported symptoms The SUSENAS also collects information on immunizations On the other hand, the IFLS allows parents to report multiple symptoms,

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[45] The SUSENAS collects a basic set of non monetary welfare indicators every year as part of its Core questionnaire Every third year the SUSENAS Module collects some additional information on school enrollments, health care utilization and contraceptive practices

and collects weight and height measurements for both children and their parents, which is important when trying to understand the determinants of children's health and nutritional status

- *IFLS collects more socioeconomic information* Where the SUSENAS collects expenditure data, and information on monetary wage income from the respondent's primary occupation, the IFLS collects this and much more For example, the IFLS collects monetary and in-kind wage (e g , food and housing) income for the primary and secondary occupations The IFLS also collects information on the value and ownership of household and individual assets, household farm and non-farm production, economic shocks experienced by the household, and economic support from outside the household

- *IFLS collects more information on health status and health care utilization* Where the SUSENAS provides one measure of adult health status, whether an individual experienced one of several alternative symptoms, the IFLS collects five measures of health status (1) individuals are permitted to report multiple symptoms, (2) self-assessed general health status, (3) self-assessed activities of daily living to measure physical functioning, (4) self-reported indicators of depression, and (5) anthropometric measurements of weight and height Where the SUSENAS collects summary, aggregate information on health care utilization, the IFLS collects detailed information on multiple, individual visits to specific public and private providers—including information on service received, reason for the visit, fees paid, travel costs, waiting times, and whether drugs were received

- *IFLS collects more information on contraceptive use and knowledge* The SUSENAS has very limited information on contraceptive use among ever-married respondents The IFLS collects up to 10 years of retrospective data on contraceptive use, including information on specific methods used and reasons for stopping The IFLS also collects information on visits to family planning providers, prices paid, side-effects, knowledge of alternative methods, and client satisfaction

- *IFLS collects retrospective information covering a number of topics* Because the SUSENAS is designed to monitor changes in social welfare, the survey instrument focuses on current measures of welfare On the other hand, the IFLS was designed to explain how family welfare is influenced by government programs, economic development and families' decisions Thus, the IFLS questionnaire design included retrospective information numerous topics, including migration, marriage, pregnancies and births, employment and education

- *IFLS collects matched community-level data* The IFLS CFS has no equivalent in the SUSENAS Not only does the CFS collect current and historical data on the communities where respondents live, but the survey collects price, quality and service availability information from the schools, health providers and family planning providers that are used by the IFLS households

Appendix B

Within-Household Sampling

In order to facilitate the process of sampling respondents within households in the field and as a way to reduce the potential for interviewer error, labels were pre-printed for each control book with random numbers to use in implementing the following selection rules (after identifying the household head and their spouse who were always selected for interview)

- Selecting the respondent age 50 and above (Senior respondent)
- In 25 percent of the households, selecting a respondent age 15 to 49 (Nonsenior respondent)
- Selecting the first child of the head/spouse age 0 to 14
- Selecting the second child of the head/spouse age 0 to 14

Section PS in Book K included four columns to implement each of the above selection rules, labeled PS04, PS08, PS11 and PS12 respectively To implement the first, third and fourth selection process, a random number between 1 and 12 was preprinted on each label In the case of the second selection process, a random 75 percent of the labels contained the text "TIDAK" (meaning "no" in Bahasa Indonesia) indicating that no respondent in the 15 to 49 age range would be selected even if they existed The other 25 percent of the labels included a random number between 1 and 12 that was used to select a respondent in the 15 to 49 year old age range The following examples illustrate the labels that were produced

PS04	PS08	PS11	PS12
4	TIDAK	7	1

PS04	PS08	PS11	PS12
11	TIDAK	2	6

PS04	PS08	PS11	PS12
2	6	3	12

The random numbers of each control book label were keypunched at the time of data entry and can be used to validate the selection of the respondents in the above categories when more than one respondent of each type was included in the household

Appendix C

Field Operations

The IFLS was fielded between September 1993 and February 1994 jointly by RAND and LD In this appendix, we summarize the survey operations for the IFLS, focusing on those aspects that were relevant for the household survey

Questionnaire Development. A team of RAND researchers representing a variety of disciplines (e g , economists, demographers, sociologists, health experts, and survey methodologists), in conjunction with University of Indonesia research staff, spent nearly 18 months developing the detailed IFLS data collection instruments During this period, a series of small-scale pilot tests and two full scale pretests were conducted as part of the questionnaire development process The first pretest site was in Sukabumi, an area in West Java, while the second took place in the province of Lampung Each pretest sampled 20 urban households and 30 rural households for interview The first pretest focused on the questionnaire instrument, while the second also tested the training and field procedures The first pretest was conducted by LD staff who served as interviewers This approach provided optimal feedback since these interviewers were intimately familiar with the study objectives and questionnaire content For the second pretest, a separate field staff was hired and trained, with the LD staff serving as trainers RAND and LD staff were debriefed following both pretests

Field Staff and Supervisory Structure Dr Sulistinah Achmad was the LD survey director based in Jakarta She collaborated with a group of seven senior supervisors (Korlaps) who were all staff at LD, and a group of six junior supervisors (Jaksups) who were employed during the survey period The Jaksups were all recent college graduates, and were teamed with a more senior Korlap who supervised and guided their work The Korlaps and Jaksups each had overall responsibility for a given province

The field work in each province was carried out by one to three interviewing teams, depending on the size of the sample, a total of 21 teams covered the 13 provinces Each household survey team consisted of one team supervisor, six to eight interviewers, one editor and one anthropometrist This ratio of team supervisors to interviewers allowed proper supervision to insure the quality of the data collected Teams differed with respect to their ethnic mix and language skills so that they would closely match the language requirements of the region to which they were assigned

The team supervisor was responsible for contacting the village leader to make preparations for the arrival of the team and to establish a team 'base camp' The supervisor handled the EA sample materials, assigned the work of each interviewer, and was responsible for all record keeping (e g , production log) Supervisors reported to Jakarta every week by telephone or fax and were responsible for shipping the hard copy questionnaires to Jakarta The supervisor was also responsible for ensuring the high quality of the data collection In this capacity, he conducted regular observations of his interviewers and verifications He also performed troubleshooting and retrained individual interviewers as needed

Interviewer Selection and Training Approximately 150 field staff were hired to conduct the household survey These staff were recruited from the geographic regions in which fieldwork was taking place to ensure fluency in the local languages Population Center officials, affiliated with universities throughout Indonesia, were instrumental in the recruitment of field staff Due to the complex nature of the survey, we required that field personnel had completed some college, most, in fact, were young, bright, recent college graduates who were embarking on the first job of their careers

The IFLS training and field work was conducted in two rounds which overlapped by six weeks, a separate training was held for each round The first round include the two provinces of Lampung and West Java, training was conducted centrally in a location outside of Jakarta The second round include the other eleven provinces and training was conducted concurrently in three sites Jakarta, Padang (West Sumatra), and Malang (East Java) Each round began with approximately three weeks of training to provide in-depth classroom instruction and field practice with the entire questionnaire Training consisted of the following components an overview of the study, introduction to survey research, appropriate techniques for asking questions, recording responses, and probing, procedures for identifying sample households, editing one's own work, quality control, and sample control, and a detailed review of all instruments In addition to lecture presentations, a variety of teaching aids were used in training For example, the questionnaire was broken into components and discussed question-by-question Trainers demonstrated the content and flow of portions of the questionnaire, then used round robin and mock interviewing techniques to familiarize trainees with the questionnaire and interviewing approach Trainees were also subjected to periodic quizzes A training manual and manual detailing questions-by-question objectives was provided to support classroom training Following training, field staff were observed closely in the field for one-week by LD supervisory staff and RAND personnel

Supervisors and editors were selected from the top performers in the applicant pool They received additional intensive training during the week of field practice This program supplemented interviewer training by covering the following topics assigning workloads to interviewers, sample control, observation and validation, production

reporting to Jakarta, assisting anthropometrists, and handling crises In addition, a specialized training program was conducted for anthropometrists These field staff first participated in the general interviewer training so that they were familiar with the study objectives, interviewing techniques, and content of the household questionnaire They then participated in a separate specialized training program focusing on anthropometric measurement

Field Work The IFLS field work began once the training was completed and continued for three to four months depending upon the sample size assigned to each team During the field work, each team was assigned a list of enumeration areas All households were interviewed in an area before moving on to the next Field work in each area was conducted in three to five days Travel time between enumeration areas took one day on average Before beginning work in a new area, the Supervisor traveled ahead to the next area, obtaining permissions, area lists and maps and setting up base-camp He also arranged travel for the team from area to area

The sampling plan, described earlier, was implemented in the field by the team supervisor In each enumeration area (Wilcah), a list and map was obtained from the local CBS Office by the supervisor The supervisor reviewed the list with an official at CBS and/or the local village leader for accuracy Demolished, vacant, non-existent or duplicate structures were removed from the list during this pre-sampling review In the event that more than 25 percent of the households on the Wilcah list were not good, the Supervisor notified the LD project director in Jakarta and replaced the bad Wilcah with the next closest one as assigned by the LD project director

Using a manual systematic random sampling method, the Supervisor selected the appropriate number of households from the Wilcah list twenty households for an urban area or thirty households for a rural area An additional ten reserve households were also selected using the same method These reserve households were available to use to replace households that were discovered to be demolished, vacant , non-existent or duplicate after sampling Once the sample was drawn, the Supervisor assigned the selected households to his interviewers

Generally, interviewers worked in pairs so that a household interview could be completely efficiently and so that they could be available to assist one another as needed This allowed, for example, one interviewer to be with the household head in one room answering Book II, while the spouse of the head was with another interviewer answering Book IV Each household interviewer completed approximately 1 25 households per day This included time to make introductions and appointments, conduct the interview, schedule any return visits, and travel to and from households In extenuating circumstances, it was necessary to take more than the expected amount of time to complete an area Such circumstances included encountering areas with larger than

average household sizes, greater than normal distance between households, and more difficulty in finding respondents at home

In between interviews, an interviewer conducted a field edit of his/her own work Following the field edit, the team editor carefully reviewed the completed questionnaire instruments Following the edit, the editors were instructed to ask the interviewer to clarify any inconsistencies In some cases, the editor required the interviewer to return to the household to complete sections of the questionnaire that were left missing Serious interviewer deficiencies were reported to the Supervisor who also edited at least 2 households per area

After interviewing had begun in a household, the anthropometrist visited the household to weigh and measure the adult and child respondents and any other children in the household aged 5 or younger who were available Additional duties of the anthropometrist included conducting verifications of four households per area and assisting the editor by editing Books II and V

In addition to the work of the field editor, two other critical quality control functions were implemented, namely observation and verification Using an observation form which covered key techniques of interviewing, the Supervisor typically observed two different interviewer sessions per area and the Wasjak/Korlap observed one to two sessions per area The observers gave feedback to the interviewers, providing correction and instruction if necessary This feedback also provided an opportunity for the observers to give positive reinforcement to interviewers for good work Verification was also performed to confirm that a household was visited, to check household composition and to validate interview data Using a verification form, the supervisor and anthropometrist verified two and four households per area, respectively

Data Entry Once an area was completed, the questionnaires were packed and shipped to Jakarta with a packing sheet identifying the enclosed questionnaires by number All data entry was conducted centrally in Jakarta by a staff of data entry personnel Data were entered with 100 percent verification The data entry system was programmed using ISSA, a computer-assisted data entry program that allowed immediate checks on data consistency and logic Batch editing programs were used in Indonesia to further check the data for completeness and consistency Additional data cleaning is currently being conducted by RAND in Santa Monica