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DEMOGRAPHIC PROFILE OF JAKARTA

BY

ABDOEL DJALAL ARDJOBONESO

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DECLARATION

EXCEPT WHERE OTHERWISE INDICATED,
THIS THESIS IS MY OWN WORK.

JUNE, 1978

ABDOEL DJALAL ARDJOBOESONO

A C K N O W L E D G E M E N T

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ABSTRACT

DEMOGRAPHIC PROFILE OF JAKARTA, is a study attempting to portray the *anatomy* and *physiology* of the recent Jakarta population mainly based on the 1961 and 1971 population census data. A brief historical background of the formation of Jakarta city is presented in the first chapter. In the process of describing the demographic changes during 1961-71, historical demographic details were examined from 1623 onward. Starting with 6,000 people in 1623 in the city, Jakarta's population grew at a rate of 4.2 per cent annually from 1700 to 1920 and at 5.7 per cent during 1920-30. In the sixth decade of this century the population growth rate was 4.6 per cent. The description of the population growth, composition and distribution are presented in the second chapter.

Fertility and mortality levels fluctuated over time depending very much on the political, socio-economic and health conditions in the country. However, the recent situation demonstrates a declining trend in both fertility and mortality. The Abridged Life Table for Jakarta, 1971, shows the life expectancy at birth to be 53.88 years for females and 48.75 years for males. Migration, the third component of growth, seemingly plays the greatest role in the growth of Jakarta's population. Not less than 110,000 persons migrated to Jakarta annually during 1961-71. The details on components of population growth are found in the third chapter.

Fertility differentials based on the unpublished 1971 census data are presented in Chapter 4. A negative association between fertility and education and a positive association between fertility and economic class were observed among Jakarta's mothers. Fertility control - through the Family Planning Program - has been practised since 1967. The statistics demonstrate an increasing number of program and non-program acceptors. The impact of family planning on marital fertility has also been examined

in this study.

Finally, the future of Jakarta's population, i.e. the projection of Jakarta's population to 2001, is discussed in the sixth chapter. A number of assumptions are made for the projections. With the high projection Jakarta's population will grow to 15.6 million, with the medium projection between 13.3 and 13.7 million, and with the low projection 11.8 million in the year 2001.

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CHAPTER 1

INTRODUCTION

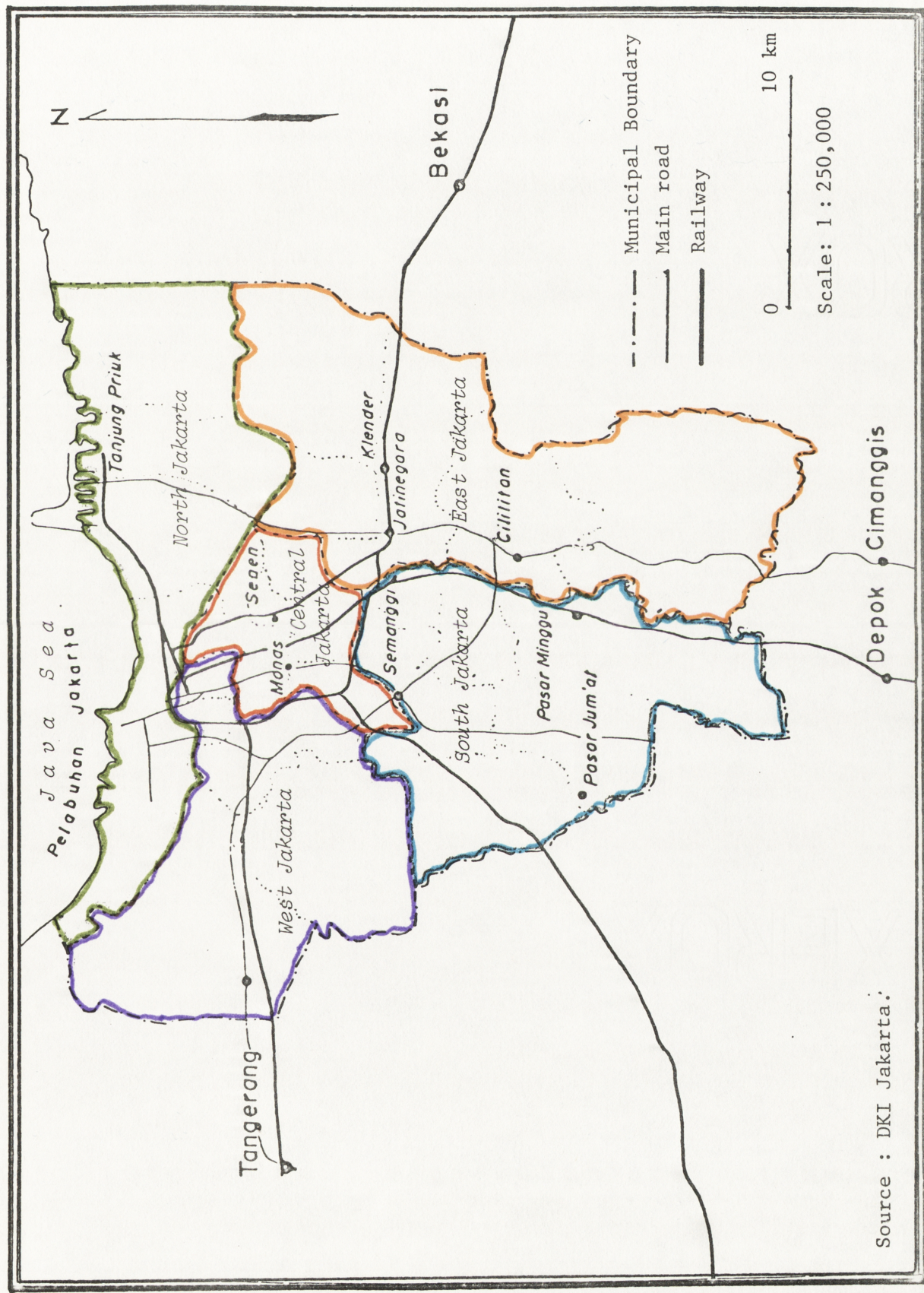
1.1. The City of Jakarta.

Jakarta, which covers 577 square kilometers, occupies only 0.03 per cent of the area of Indonesia. It lies between $6^{\circ}08'$ and $6^{\circ}15'$ south latitude, $94^{\circ}05'$ and $94^{\circ}45'$ east longitude. Three regencies of West Java province border the city - to the west is the regency of Tangerang, to the south is Bogor and to the east is Bekasi, while the Java Sea borders the northern part (see Map 1).

The major part of Jakarta consists of mainly flat and swampy areas, being about 7 m above sea level. Jakarta has a tropical climate and receive both the monsoons. The normal monthly rainfall, for example, ranged from 50 to 326 mm, the normal temperature fluctuated around 26° Celcius, and the humidity ranged from 77 to 82 per cent throughout the year (Census and Statistical Office, Jakarta, 1976:8-10).

From history we know that in the fourteenth century, there was a kingdom in West Java - the Pajajaran Kingdom - which had several harbours on the north coast. One of them - the Sunda Kelapa harbour - established foreign trade relations with the Portuguese. Falatehan, a famous moslem preacher, who was also the brother in law of the King of Demak, conquered the harbour town Sunda Kelapa and drove away the Portuguese. Afterwards, on the 22nd of June 1527, Falatehan changed the name of Sunda Kelapa to Jayakarta - shortened as Jakarta - meaning the ultimate or complete victory (DCI Djakarta, 1972:10). In 1619, the Dutch Colonial Government changed the name of Jakarta to Batavia. In 1942, when the Japanese conquered the Dutch Colonial Government, they changed the name

MAP 1. J A K A R T A, SHOWING MUNICIPAL BOUNDARIES.



Source : DKI Jakarta.

of the city to Jakarta again. To simplify the presentation, in this study we use only one name, Jakarta, to indicate the name of the city during all periods.

The demographic history of Indonesia in general and Jakarta in particular dates back to 1779 when Radermacher and van Hogendorp published several estimates of the population of Java. Afterwards, during the British interregnum, Lieutenant General Raffles introduced the "land-rent" system, for which population data were collected (Widjojo,1970:11). Although the quality of the returns of these efforts was questionable, the estimates are valuable for further analysis of the demographic changes in the city. There was very little effort made to collect adequate and reliable vital statistics. Registration system of births, marriages, and deaths which were compulsory did not give a good return (Widjojo,1970:24). Overall, the available demographic data did not provide a sufficient basis for the determination of fertility, mortality and migration rates.

It is important to note that in the past the administration system of Jakarta city changed several times, which resulted in changes in the boundary of the city. According to The Liang Gie (1958:33-143) the type of administration and the boundary of the city of Jakarta during 1905 to 1950 changed as follows:

<u>Period</u>	<u>Size in Sq Km</u>	<u>Type of Administration.</u>
1905	125	<i>Gemeente</i> (municipality)
1935	182	<i>Gemeente</i> , inclusion Meester Cornelis (Jatinegara)
1948-49	1,800	Federal District
1950	530	<i>Daerah Khusus Ibukota</i> (Special territory of the capital city).

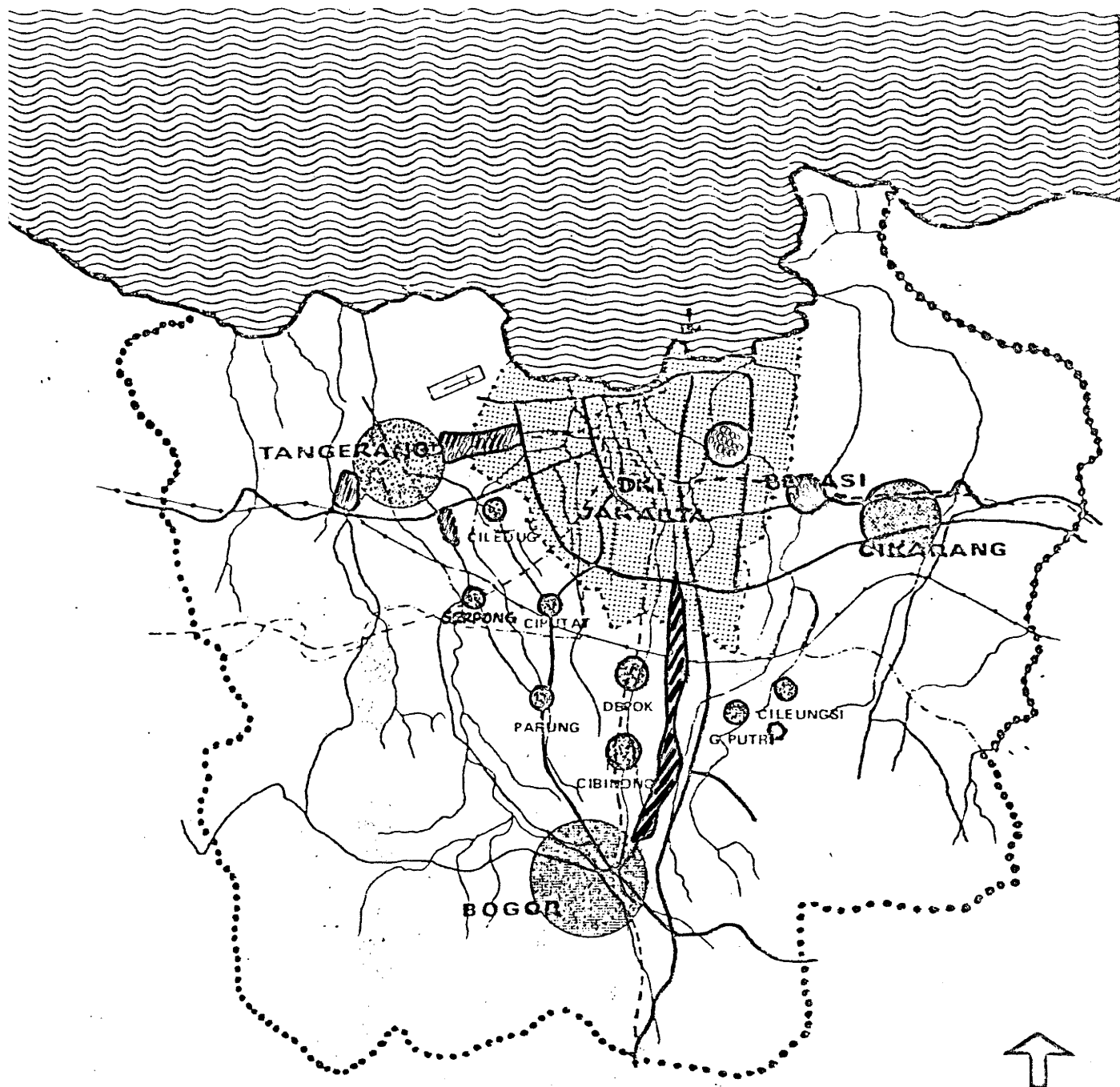
In the present day, Jakarta city has an autonomous status of a region as well as that of a province. Because of its particular position

an "Administration of the Special Territory of the Capital City of Jakarta" was set up by Act No,10,1964 (Bappeda DKI Jakarta,1972:16-17). The territory is headed by a Governor and is divided into five municipalities,i.e. Central, North, West, South and East Jakarta municipality. In 1971, the population of the city was 4,546,492 persons (BPS,1974,Series E,No.09:Table 01) with a density of 7,880 persons per square kilometer. In the future, under Act No.5, 1971 *juncto* the Government Regulation of the Minister of Interior, Jakarta will be extended to JABOTABEK, a planning and development area which covers the administrative region of DKI Jakarta (=Ja), regency and municipality of Bogor (=Bo), regency of Tangerang (=Ta) and regency of Bekasi (=Bek). According to the unpublished census data, the population of Jabotabek in 1971 accounted for 6,958,367 persons (see Map 2).

1.2. Importance of the Study.

Jakarta is chosen for this study for many reasons. Firstly, as the capital and prime city of the Republic of Indonesia, Jakarta is the most urbanized and multi-ethnic city. Jakarta's inhabitants are comprised of several sub races coming from various places throughout Indonesia. By selection of this area, it is hoped that we can throw light on the impact of the ethnic heterogeneity of the city. Secondly, the population of the city has been growing tremendously, especially after the second world war as a result of the rapidity of urbanization. Within 30 years (1941-71), for example, Jakarta's population multiplied eight-fold, from 544,823 in 1941 to 4,56,492 in 1971 (Census and Statistical Office, Jakarta,1967:17). The annual growth rate during the sixties was estimated as 4.8 per cent, where 2.2 per cent was due to natural increase and 2.6 per cent due to urbanization (Iskandar,1974:156). The population is growing continuously while the expansion of the facilities of the city has been far from what is actually

MAP 2. JABOTABEK



Source : DKI Jakarta

Scale : 1:600,000

JABOTABEK

- | | |
|-----------------------------|-----------------------------|
| --- Boundary of Jabotabek | DKI Jakarta region |
| --- Boundary of DKI Jakarta | Pulo Gadung Industrial area |
| --- Boundary of Regencies | Controlled Industrial area |
| — Main road | Limited Industrial area |
| --- Railway | Pertamina's Gas pipeline |
| Development centers | International airport |

required. In many instances, it has resulted in deplorable conditions. Thirdly, as a matter of fact, the problems associated with the rapid growth, changing composition and characteristics of the population are common in many cities of Indonesia. However, to study these in the context of Jakarta city poses numerous challenges because of the lack of the required data. Therefore, this study is an attempt to fill in the gap in the existing knowledge on the demography of Jakarta by providing some insights into the past, present and future trends and changes in the population. Finally, as the population of the city is ethnically the most heterogeneous among the cities in Indonesia, it is noteworthy that Jakarta can be considered, in many ways, as a demographic and sociological laboratory. A careful study of the population problems of the city, should throw light on the demography and sociological future of Indonesia (Mertens, 1976:50).

1.3. Purpose and Scope of the Study.

The purpose and scope of the study are: (1) to describe the basic features of the population growth and its characteristics and to indicate the relative contribution of the components of population change based on the 1961 and 1971 censuses, (2) to illustrate the use of limited data to estimate some demographic parameters for the city where complete and reliable vital statistics are lacking, and (3) to prepare population projections and to examine some implications of the rapid population growth for the future development of the city.

1.4. Review of the Existing Studies in the Context of the Present Study.

Most of the demographic studies that have been undertaken about the population of Jakarta have tended to concentrate on the subject of migration, only a few on fertility and mortality.

The survey of urban migrants in Jakarta conducted by the Economics and Social Research Institute of the University of Indonesia in 1953 gave a detail treatment of migration. While the causes of migration were difficult to establish, it seemed that these causes were mainly of an economic nature. The insecurity of some districts was also one of the causes of migration besides continuing study, that is movement for educational purposes (Heeren, 1955:713).

Another study dealing with the demographic aspects of urbanization with special reference to the population of recent rural origin in Jakarta was done by Titus (1972). He pointed out that the migrants contribute neither to a rise in the urban fertility level, nor to a significant rise in the mortality level. His study was mainly based on population census data.

Temple (1975) studied migration to Jakarta. A number of conclusions that emerge from his data contradict traditional theories of migration. He found that the problems associated with rural-urban migration arise from the failure of urban economic opportunities and infrastructure to keep up with the growth of urban population rather than simply from high urban growth rates or high urbanization rates.

Suharso et al (1975) studied migration and education in Jakarta. The study aimed at seeing the interrelationships of the migration process with the educational background of the migrants, vocational training, type of occupation, the social and economic condition of the migrants and the educational aspirations for their children. The sample population covered in this study consisted of only 664 persons in the age range 20-39 years.

A current fertility survey was carried out by the Institute of Demography, Faculty of Economics, University of Indonesia in 1970. The aim of this survey was to obtain information on the patterns of fertility of Jakarta's population. Although the survey was done in a very short period of time, the results were interesting (LD FEUI, 1971:1).

Mertens (1976:102) in his study of Jakarta stated that the values for the basic variables of natural growth, fertility and mortality, were quite exceptional in their close conformity to the national patterns. On the other hand, the heavy in-migration to Jakarta occupies a very specific place in the national constellation. It is specially this migration from all over Indonesia which makes Jakarta a country in a city.

A study of social, cultural, economic and ecological history of Jakarta from the earliest time until 1870 was carried out by Milone in 1966. Her intention was not merely to present what might be termed Jakarta's passive history¹⁾, but also to concentrate on Jakarta's active history²⁾. The discussion also described the character of the three socio-cultural population strata of Jakarta: the Indonesian, Chinese and other Foreign Asians (Milone, 1966).

Castles (1967:154) used the 1930 census data to estimate the ethnic composition of the city in 1961. The main purpose of his paper was to bring the 1930 figure up to date, by estimating the ethnic composition of Jakarta in 1961. If everyone in Jakarta in 1961 was either a survivor or descendant of the 1930 population, then the 1961 population should be similarly composed as the 1930 figure. However, the 1961 census tells us the province of birth of in-migrants to Jakarta. Suppose the migrants from each province belong to the predominant ethnic group in the province, then it is possible to estimate the composition of the remainder of the population, as being a migrant since 1930 or a descendant of such a migrant (Castles, 1967).

1.5. Availability of the Required Data for the Study.

The data used in this study are from the secondary sources. Several

-
- 1). Jakarta's passive history= what occurred in the city as a result of its role first as a traditional port, and then as a colonial port and capital.
 - 2). Jakarta's active history = what occurred in the city as a result of conscious administrative and planning decisions that were aimed at, and resulted in, the molding of its form (Milone, 1966).

categories of available data are relevant to this study. The major ones being the 1961 and 1971 census data and vital statistics of 1966-75. Occasionally some surveys, like the current fertility survey, 1970; KAP study 1968 and 1975; Demographic surveys in the wards of Rawasari and Kebonsirih 1974-75 and other surveys, are used to supplement information needed in analysis.

The 1961 population census of Indonesia was the first comprehensive census taken in the Republic of Indonesia, and it was practically the first one both in name and reality in the modern sense of the term. The population enumerated in this census referred to those persons who had or would have lived for more than three months in Indonesia by the date of the census (*de jure* and *de facto*). The 1971 census was more comprehensive than the previous one. In the "person record", for example, it also covered the migratory schedule. The execution of this census was different from that of the 1961 census. The census was organized in two ways, firstly, by obtaining basic characteristics of the population from each individual residing in Indonesia (using short form); by asking additional information from enumerated persons residing in selected census blocks (BPS, 1975a:xvi; and McNiccol and Mamas, 1976:54).

1.6. The Accuracy of the Data.

The coverage of the population totals in the 1961 census was checked by means of the post enumeration survey. The coverage was fairly good, i.e. 93 per cent of total population, to which were added figures for 4 per cent by house listing results and for the remaining 3 per cent by estimates based on regular reports of local governments (Ueda, 1964:9). For the 1971, however, it was argued that the sample enumeration itself (Cho, 1976) would, in effect, be a post enumeration survey. By using Chandrasekaran-Deming method on 46 enumeration blocks located in urban areas of three West Java regencies, it was indicated that the level of underenumeration was 2 per cent for the complete count and 2.5 per cent for the sample (Cho, 1976:82). The level of underenumeration for Jakarta is likely to be smaller than or at the most the same as indicated by this preliminary check. One of the reasons mentioned was

that Jakarta was better organized, in many aspects, than other provinces. In countries where the majority of the people are not interested in knowing their exact age, the reporting during enumeration is mainly the result of the guess work by either the respondent or the enumerator. In this study, the age preference at the 1961 and 1971 censuses is examined by using the Whipple's, Myer's and U.N.Secretariat's indices. For the 1961 census, the single year age distribution by sex is not available, therefore the age preference is examined by using Myer's index for both sexes and the U.N.Secretariat's index.

<u>Whipple's Index</u>	<u>Male</u>	<u>Female</u>	<u>Both Sexes</u>
Jakarta 1961	-	-	-
Jakarta 1971	162.5	178.7	-
<u>Myer's Index</u>			
Jakarta 1961	-	-	36.1
Jakarta 1971	17.5	21.5	19.8
<u>U.N.Secretariat's Index</u>		<u>Joint Score</u>	
Jakarta 1961		57.8	
Jakarta 1971		40.5	

The score of the age accuracy of Jakarta's 1971 population is better than that for the 1961 population. It is also better than the scores for the other provinces in Indonesia, except for North Sulawesi. Jakarta's score is not as good as that for Bangkok and Manila, but it is better than that of Lagos in 1963, and probably it is not too high for a city in a developing country (Table 1).

The results of the 1961 and 1971 censuses have provided a solid foundation for most of the demographic studies which have been undertaken in Jakarta and it needless to mention that census data will play a major role in this study. On the other hand, very little effort has been made to collect adequate and reliable vital statistics. Thus the available

demographic data do not provide sufficient basis for the determination of fertility, mortality and migration rates with the degree of accuracy required for analysis of the dynamics of population change.

TABLE 1
U.N.SECRETARIAT'S INDEX FOR VARIOUS PROVINCES IN
INDONESIA (1971) AND CAPITAL CITIES OF DEVELOPING
COUNTRIES.

Province / Capital City	Joint Score
North Sulawesi	35.6
Jakarta	40.5
D.I.Yogyakarta	45.9
North Sumatra	51.3
Central Java	54.2
West Sumatra	55.7
South Sumatra	56.3
East Java	58.4
B a l i	59.2
East Nusatenggara	61.4
West Java	71.6
South Sulawesi	79.1
Bangkok (1970)	23.4
Manila (1970)	33.9
Lagos (1963)	102.5

Source : Calculated by the author.

CHAPTER 2

POPULATION GROWTH, COMPOSITION AND DISTRIBUTION

2.1. The Population Growth.

2.1.1. Historical Trends (up to 1930).

Although Jakarta was built in 1527 there is some evidence that the city - whatever it was called - was inhabited since prehistoric times (Tjandrasasmita and Hadisutjipto, 1971:1-22). The archeological findings and comparative studies in arts, languages, technologies and agricultural methods suggest that the earliest international migration to Jakarta occurred in the ancient times, when the people from Campa (Kampuchea), India and China came to Java via the Malay peninsula to trade and spread Hinduism (Krom, 1926:34-62). Historical documents disclose that there are no data available to estimate the magnitude of this migration.

There is very little known about the population of Jakarta before the eighteenth century. The statistics available for this period are far from comprehensive, and can only give a rough estimate of the actual population size. The statistics sometimes give population by regency and sometimes by residency of Jakarta as well¹⁾. Therefore, the statistics in this period are not comparable. It is noteworthy that the area of Jakarta in this period consisted of the city of Jakarta, the area surrounding the city, the Jakarta regency and the Priangan lands. Although the reliability of the figures as mentioned earlier is doubtful, the studies are probably valuable for the demographic knowledge of the country and the city of Jakarta.

The first set of statistics reported by de Haan (1922, I:126) suggested that the population of Jakarta city in 1623 was around 6,000, it

1). Residency (*Residentie* = Dutch or *Karesidenan* = Indonesian) is an administrative division which might consist of Division (*Afdeling*), Municipality and Regency (*Regentschap* = Dutch or *Kabupaten* = Indonesian). The latter consists of districts.

increased to 8,000 in 1632 and to 12,000 persons in 1638 resulting in an annual rate of growth of 2.9 per cent during that period. Lekkerkerker, as cited by Milone (1966:142), estimated that the population of Jakarta city in 1673 was 27,068 persons.

Population data available for the eighteenth century indicated that the period of the highest growth of Jakarta city's population was reached during the period 1700 to 1730, when the population comprised about 30,000 to 35,000 persons (de Haan, 1922, II:341-348). Thereafter the population probably declined sharply. In 1779, Radermacher and van Hogendorp in their report estimated that the population of Jakarta city and of the surrounding area was 12,121 and 160,986 persons respectively (Widjojo, 1970:14). Some plausible reasons for the decline of population were the 1770's epidemic and the Chinese massacre in 1740 (de Haan, 1922, II: 341-348). Raffles (1965, II: appendix A) reported that according to the Dutch Government's documents not less than 1.1 million persons died during 1730-52. As a result of the decline in population size, the Dutch Government started to offset this by the steady in-migration of people, by means of importation of Indonesian slaves, Chinese labourers and the coming to Jakarta of new V.O.C employees¹⁾ (Milone, 1966:143). In 1795, there was a survey conducted by Governor van Overstraten in the northeast Java and in the regencies of Jakarta and Priangan (Widjojo, 1970:16). Using the result of this survey and the preliminary estimates of Radermacher and van Hogendorp, Nederburgh estimated the population of the city of Jakarta and its surrounding areas as 144,026 persons, but no separate figure for the city was given.

Further, for the nineteenth century, Raffles' figures were most often used as the starting point in discussion on the growth of Java's

1) V.O.C = *Vereenigde Oost Indische Compagnie*, means United East India Company or Dutch East India Company.

population. These data were obtained from a census taken by the British Government in the year 1815. According to Raffles (1965,II:Table II) the population of Jakarta city and environs in 1815 was 332,015 persons. Widjojo (1970:26) stated that compared to Radermacher's and Nederburgh's data and all other information available up to that time, Raffle's data were definitely more accurate, even with the shortcomings of underestimation. The journey of a young industrious student named Bleeker throughout Java in 1846 collecting population data from local officials resulted in a figure of 283,517 persons who lived in Jakarta city and surrounding areas (Widjojo, 1970:33). Bleeker himself was sceptical about the accuracy of this figure and probably it was an underestimate (Peper,1967:89). It is possible that as a reaction to Bleeker's efforts, the Dutch Colonial Government started to publish an annual report on the population of Java in the *Koloniaal Verslag* (the Colonial report) of each year from 1849 to 1879. The data were compiled from the local official's report on population, as was done by Bleeker, but the compiler of the reports warned of the limited reliability of the figures (Widjojo,1970:34-35). The population of Jakarta regency as reported in the *Koloniaal verslag* can be seen in Table 2. Between 1880-1905, a population survey (or enumeration) was taken every 5 years by the Dutch Colonial Government. These surveys, which were often called quinquennial population censuses, were directly related to the system of compulsory labour services. The survey registered the name of the household head and counted the livestock. Infants were often excluded from the count (Widjojo,1970:49-54). The result of these surveys were reported in the *Koloniaal verslag*.

There was no population enumeration during the period of 1910 and 1915 , but in 1920 a census was conducted which was better organized and some additional topics were included. According to the reports of local civil service officers the population of Jakarta's residency in 1917 was estimated to be 2,444,642 persons. The 1920

TABLE 2
TOTAL POPULATION OF THE CITY, REGENCY AND RESIDENCY
OF JAKARTA, 1623 - 1930.

Year	Population of Jakarta			Source
	City	Regency	Residency	
1623	6,000	-	-	de Haan
32	8,000	-	-	de Haan
38	12,000	-	-	de Haan
73	27,068	-	-	Lekkerkerker
1700-30	30,000-35,000	-	-	de Haan
79	12,121	160,986	-	Radermacher and van Hogendorp
95	-	144,026	-	Nederburgh
1815	-	332,015	439,952	Raffles + Koloniaal verslag
45	-	-	676,893	Koloniaal verslag
48	-	283,527	-	Bleeker
50	-	-	755,333	Koloniaal verslag
55	-	-	866,156	Koloniaal verslag
60	-	-	978,443	Koloniaal verslag
65	-	-	1,084,684	Koloniaal verslag
70	-	-	1,175,929	Koloniaal verslag
75	-	-	1,225,041	Koloniaal verslag
80	-	-	1,246,315	Koloniaal verslag
85	-	-	1,291,065	Koloniaal verslag
90	-	-	1,450,268	Koloniaal verslag
95	-	-	1,691,559	Koloniaal verslag
1900	-	-	1,938,006	Koloniaal verslag
05	-	-	2,109,352	Koloniaal verslag
17	-	-	2,444,642	Koloniaal verslag
20	306,309	-	2,787,345	1920 Population Census
30	533,015	950,738	2,637,035	1930 Population Census

Source : Abdoel Djalal A.R., 1977b : 12.

Note : The administration divisions of 1920 are used in the figures adopted from the Koloniaal verslag 1815 - 1920.

census showed a figure of 306,309 and 2,787,345 persons for the city and the residency of Jakarta respectively (Dept.van Landbouw, Nijverheid en Handel, 1933,I:Table I). The 1930 population census was an improvement over the 1920 census. The entire country was covered. According to this census, the population of Jakarta city was 533,015 persons, while of the regency and residency were 950,738 and 2,637,035 persons respectively (Dept.van Landbouw, Nijverheid en Handel,1933,I:Table I). Assuming that the 1920 figures were correct the population of the city increased at a growth rate of 4.2 per cent between 1700 and 1920. During 1920-30 the growth rate in the city's population was 5.7 per cent.

2.1.2. Recent Trends (after 1930).

As a result of the depression that occurred in the thirties, the colonial government felt it necessary to adopt a deflationary monetary policy, and introduce restrictive schemes for export products, and also reduce the employment and cut the wages (Widjojo,1970:92). The resulting Government policies had their consequences on the population of Indonesia. The population of Jakarta city, for example, declined from 533,015 in 1930 to 434,984 and later slightly increased to 522,997 in 1936 as estimated by Widjojo (1970:108). The high incidence of death especially among the infants could be one of the plausible reasons for the decline of Jakarta's population in that period.

The population data for the forties as reported by Jakarta's Census and Statistical Office (1976:17) indicated that the population size of Jakarta city increased from 1941 to 1944, then declined up to 1947 and increased again in 1948. The annual growth rates in this decade ranged from minus 3.5 per cent to 48.8 per cent (Table 3). It should be noted that the 1940's witnessed several wars: the Japanese occupation (1942-45) and the war of independence from 1945 to the end of 1949. During the occupation,

TABLE 3
POPULATION OF JAKARTA, 1941-1975.

Year	Population	Growth rate	Year	Population	Growth rate
1941	544,823	-	1959	2,811,835	32.8
42	563,009	3.3	60	2,910,858	3.5
43	621,827	9.9	61	2,906,533	-0.1
44	644,236	3.5	62	3,022,107	3.9
45	623,343	-3.3	63	3,154,405	4.3
46	601,964	-3.5	64	3,301,870	4.6
47	599,821	-0.4	65	3,462,945	4.8
48	823,356	31.7	66	3,639,465	5.0
49	1,340,625	48.8	67	3,806,866	4.5
50	1,432,085	6.6	68	3,981,768	4.5
51	1,661,125	14.8	69	4,273,863	7.0
52	1,781,723	7.0	70	4,437,135	3.7
53	1,795,831	0.8	71	4,546,492	2.4
54	1,823,918	1.6	72*	4,755,279	4.5
55	1,884,700	3.3	73*	4,973,210	4.5
56	1,889,618	2.6	74*	5,182,597	4.2
57	1,945,883	2.9	75*	5,403,957	4.3
58	2,025,959	4.0			

Source : Census and Statistical Office, Jakarta, 1976:17.

Note : * = Estimated by C.S.O. Jakarta.

the Japanese mobilized all the available manpower and foodcrops for their war efforts. Indonesian's proclamation of independence on August 17, 1945, was followed by a landing of the British army, and by the Dutch troops. This was the beginning of the four-year war of independence. It is possible that these wars brought about a decline in the rate of population growth. Also inadequate health protection might have caused increased mortality especially among the infants and children.

During the 1950's, the trend in population growth rapidly reverted to the 1940's pattern. Food was easily available. The Public Health activities, including the tuberculosis and malaria eradication, started to operate. The population of Jakarta city increased from 0.5 million in 1941 to 1.6 million in 1951 and to 1.8 million in 1955. According to Heeren (1955:713) around 100 thousand persons moved annually into the city, of which around 60 thousand came from West Java, 30 thousand from Central Java and only around 10 thousand came from the other islands.

In general, the rapid growth of Jakarta's population in the fifth decade was mainly caused by in-migration,

The 1961 Census disclosed an unacceptably high rate of population growth in Jakarta, 5.8 per cent annually during the period 1951 - 61. This increase has been attributed to the post war baby boom and the high speed of urbanization of the city. Mortality declined substantially due to the increased availability of the health services, and the improvement in the standard of living. The census figure of 2,906,533 for the total population of Jakarta city in 1961 implied a population density of 5,037 persons per square kilometer. The population was distributed into three municipalities: 953,595 persons in North Jakarta municipality, 796,546 persons in Central Jakarta and 1,156,392 persons in South Jakarta municipality. According to the Census and Statistical Office of Jakarta (1976:17) the rate of growth of registered population of Jakarta city ranged from minus 0.1 per cent to 7.0 per cent during 1960 - 69. The highest annual growth rate was reached in the year 1968-69. The realization that the in-migration was the most striking factor in accelerating the growth of Jakarta's population led Ali Sadikin, the Governor of Jakarta, to declare the city to be closed to in-migrants after 1970 (Abdoel Djalal and Harjoto Sidik, 1974:16).

The 1971 Census indicates that the population of Jakarta city was 4,546,492 persons. The annual rate of growth from 1961 to 1971 was 4.6 per cent, of which 2.2 was due to the natural increase and the remaining due to urbanization. It should be noted that the number of municipalities changed from three in 1961 to five in 1971. The distribution of population in 1971 was as follows: 1,260,297 persons lived in Central Jakarta municipality, 1,050,859 persons in South Jakarta, 820,756 persons in West Jakarta, 612,447 persons in North Jakarta and 802,133 persons in East Jakarta municipality (B.P.S., 1974, Series E, No. 09:27).

2.2. Sex and Age Composition.

The population for 1971 has been tabulated by single year of age and sex, while for 1961 single year age data for the total population and five year age group data by sex have been published. The sex and age distribution of population in Jakarta during 1961 and 1971 is given in Table 4.

2.2.1. The Sex Ratio.

The sex ratio (the number of males per hundred females) of the total population of Jakarta in 1971 was 102, which was almost the same as that in 1961 (104). Both ratios are higher than that for urban Indonesia¹⁾ for the corresponding years, and also higher than that for other urban areas in provinces of Java and Bali (Appendix A, Table A.1).

The ratio of males to females varied considerably among the age groups (see Table 4). In 1961, the male dominance started from the 30-34 age group up to 55-59, with the highest peak in the 35-39 age group. In the 1971 population, on the other hand, male dominance started from the 25-29 age group up to 55-59 age group, and it reached the highest point in the 40-44 age group. It seems more likely, that the cause of the differences in the sex ratios by age between 1961 and 1971 lies in the sex differences in in-migration, rather than in the sex differences in births which occurred previously or in the sex differences in mortality. Age specific sex ratios may also be influenced by different patterns of age misstatement for males and females. The sex ratio at birth in 1961-66 and 1966-71 in Jakarta showed, more or less, the same pattern as the average ratio at birth throughout the world. It was estimated as 105 in 1961-66 and 106 during 1966-71.

The sex ratio of the native-born population of Jakarta, as revealed by the 1961 and 1971 censuses, remained almost unchanged, 103 and

1). Except otherwise indicated, urban Indonesia in this thesis means the urban area of Indonesia excluding Jakarta.

TABLE 4

POPULATION OF JAKARTA BY SEX AND AGE, 1961 AND 1971.

Age group	1 9 6 1				1 9 7 1			
	Male	Female	Both sexes	Sex ratio	%	Male	Female	Both sexes
				ratio	%			ratio
0-4	257,711	253,631	511,342	101.6	17.6	390,597	380,597	770,764
5-9	200,798	200,132	400,930	100.3	13.8	330,951	318,363	649,314
10-14	128,567	128,831	257,398	99.8	8.9	269,597	266,566	536,163
15-19	143,422	145,453	288,875	98.6	9.9	242,926	264,307	507,233
20-24	173,848	173,226	347,074	100.4	11.9	214,610	227,079	441,689
25-29	151,065	156,215	307,280	96.7	10.6	206,507	201,053	407,560
30-34	129,079	110,835	239,914	116.5	8.3	127,770	163,611	336,381
35-39	101,724	80,543	182,267	126.3	6.3	145,565	135,475	281,040
40-44	67,241	54,383	121,624	123.6	4.2	115,049	93,674	208,723
45-49	43,506	35,534	79,040	122.4	2.7	73,416	60,713	134,129
50-54	32,762	31,393	64,155	104.4	2.2	52,849	47,213	100,062
55-59	17,664	15,834	33,498	111.6	1.2	29,265	25,130	54,395
60-64	16,520	17,987	34,507	91.8	1.2	20,733	24,937	45,670
65-69	6,462	7,360	13,822	87.8	0.5	11,741	13,669	25,410
70-74	4,985	6,784	11,769	73.5	0.4	8,154	9,973	18,127
75+	3,969	4,634	8,603	85.6	0.3	5,838	8,937	14,775
Unknown	1,449	1,183	2,632	122.5	0.1	7,056	8,001	15,057
Total	1,480,771	1,425,762	2,906,533	103.9	100.0	2,297,194	2,249,298	4,546,492
								102.1
								100.0

Source : BPS, 1963a:Table 02; and BPS, 1974, series E, No. 09:Table 02.

Note : % = percentage of both sexes to the total population.

102 respectively, while for the Chinese citizens the sex ratio declined from 119 in 1961 to 109 in 1971, and for other citizens it declines sharply from 127 to 110. The excess of males over females among the Chinese and other citizens in 1961 and 1971 probably can be explained mostly in terms of the male selective pattern of migration rather than the pattern of mortality or fertility.

2.2.2. Age composition.

Age was reported in both 1961 and 1971 censuses in terms of date of birth and also by completed number of years (BPS, 1963a:1 and BPS, 1974:vi). Like many developing countries, the age data in Indonesia as well as in Jakarta are not free of errors of age misreporting. The age curve shown in Figure 1 reveals the zig-zag pattern of age data in Jakarta. The concentration of reported numbers at ages ending in "0" and "5" is also apparent in the graph. It appears that there has been an almost alternating understatement and overstatement of age in the census. However, the extent of the reporting errors seems to have diminished between 1961 and 1971 censuses (see Subsection 1.6).

From Table 4, two outstanding features should be noted: (1) except between 10-14 and 30-34 years age groups, on the whole, there are no major changes in the age structure of population between the 1961 and 1971 censuses, and (2) that the population is extremely youthful: more than 40 per cent of the population is under 15 years of age. The fact that Jakarta's population is very young can be noticed from Table A.2 (Appendix A) which gives the quartile figures of the age distribution of population in urban areas of various provinces.

From the population pyramid (Figure 2) we can see that in 1961, the age group 10-14 years and 15-19 years showed lower number than the adjacent lower and higher age groups. Two possible main causes may clarify the dent in these age groups: firstly, the genuinely small cohorts

FIGURE 1

POPULATION OF JAKARTA BY SEX AND SINGLE YEAR AGE GROUP, 1971.

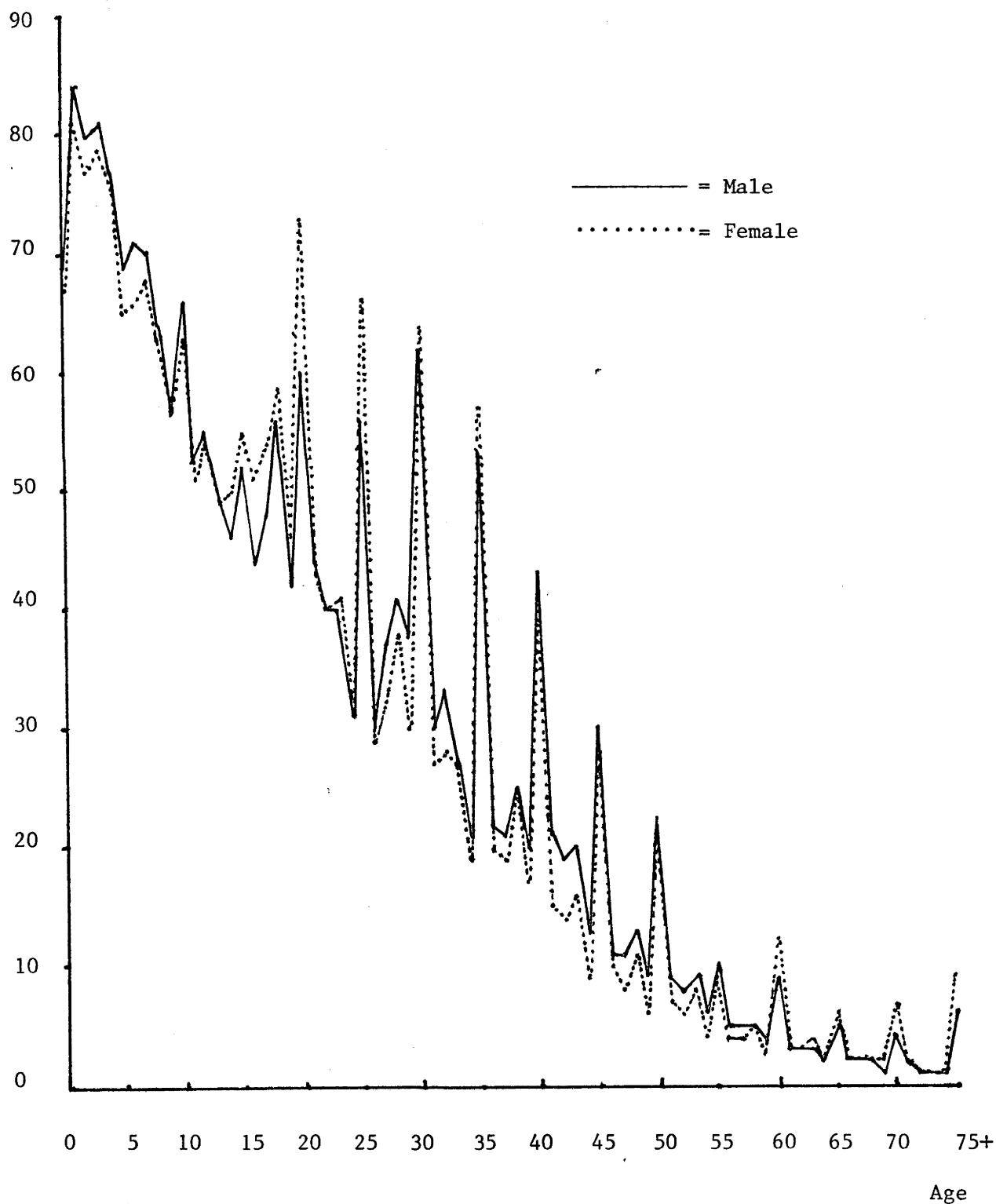
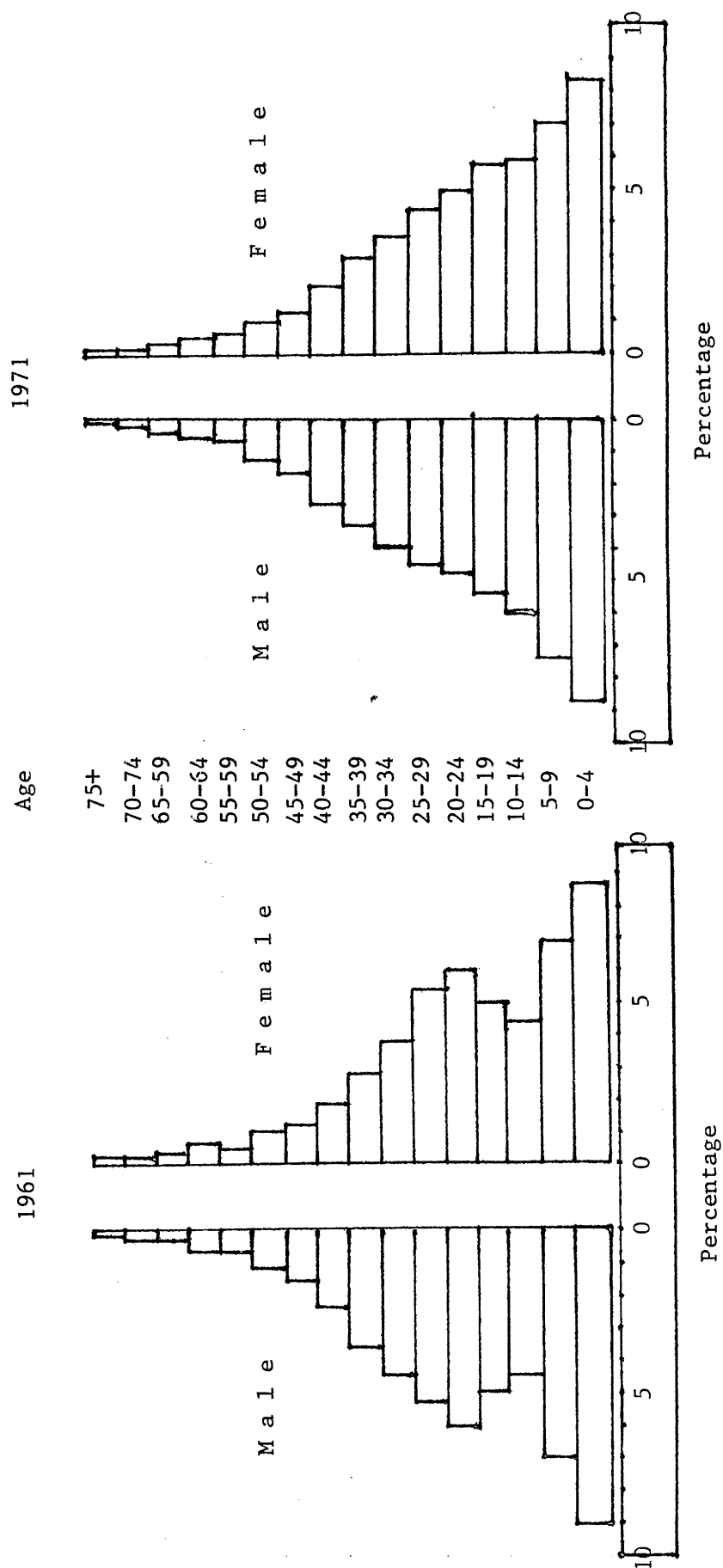
Population
in thousand

FIGURE 2

POPULATION PYRAMID, JAKARTA, 1961 AND 1971.



resulting from the wars during the forties and by the biases related to age mis-statement. Secondly, the migration into Jakarta, especially in 10-19 years age group, was not sufficient enough to fill in the dent in this age group. In 1971, however, the pyramid did not show the dent in the 15-19 and 20-24 years age groups. This is probably because of the magnitude of the in-migration which balanced the dent of these age groups produced from the previous period.

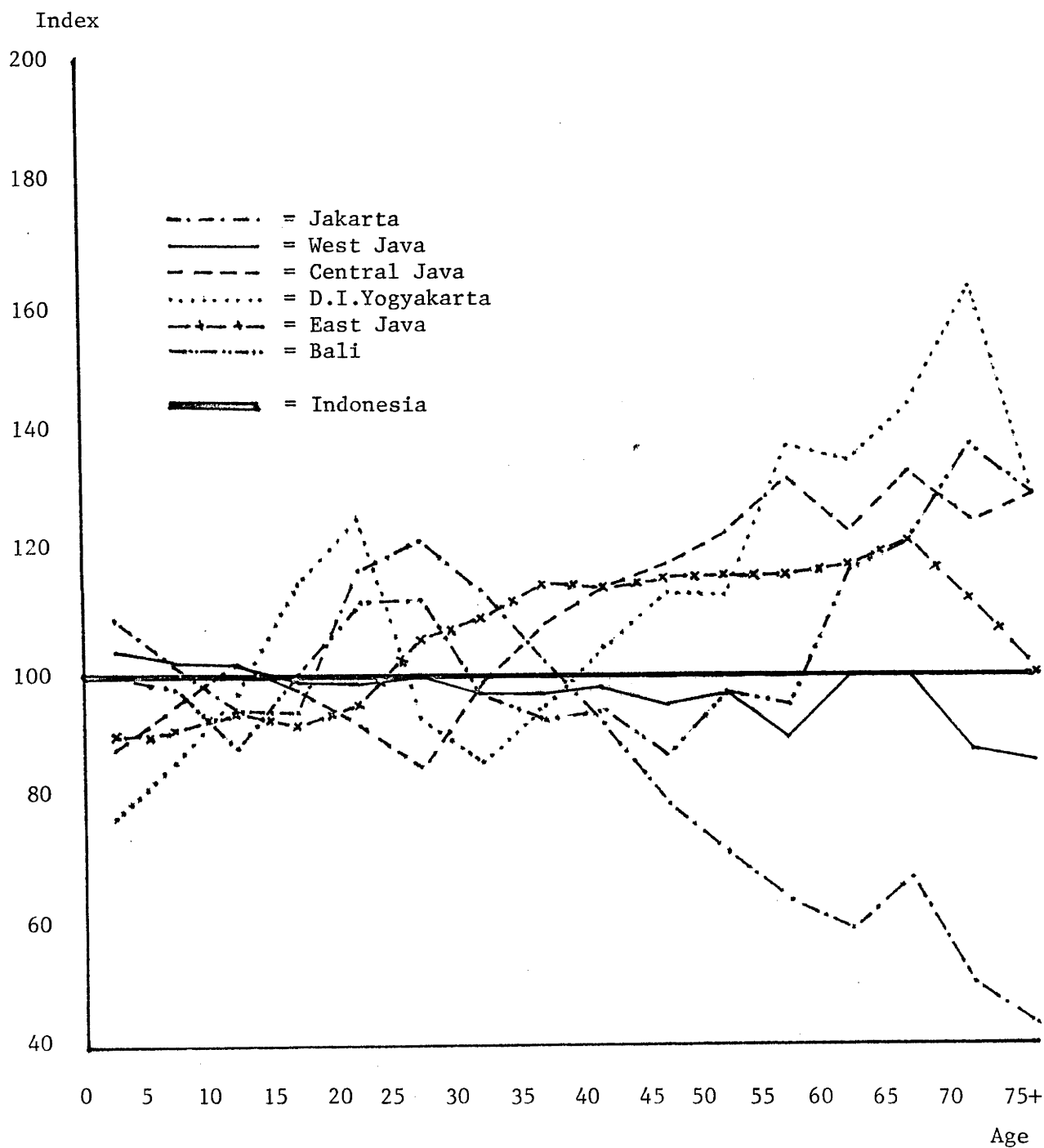
A comparison of the age structures of population between various urban areas in Indonesia can be made with help of age-specific indices. The age-specific indices are derived by dividing the per cent in a given age group in one distribution by the per cent at this age group in urban Indonesia chosen as a standard and multiplied by 100. These indices for the urban areas of provinces in Java and Bali as compared with the urban area of Indonesia for the year 1971 are shown in Figure 3. From this figure we can see that except for urban West Java, most of the urban areas in Java and Bali had a lower proportion of children under 15 years of age than had urban Indonesia. Jakarta, on the other hand, had the highest proportion of persons aged 15-34 years among those urban areas. Probably, this was caused by the number of in-migrants who were mainly concentrated in this age group. D.I.Yogyakarta, Central Java, East Java and Bali provinces had a substantially higher proportion of aged persons than that did urban Indonesia. Further, it is interesting to note, that West Java province had almost the same pattern of age distribution as that for urban Indonesia.

2.2.3. Dependency ratio.

The dependency ratio, calculated as the ratio of all persons under 15 years of age and those 65 years and over to the population aged 15 to 64 years, given as indication of the dependent population on the working population. It is observed that the dependency ratio of youth and aged of

FIGURE 3

AGE SPECIFIC INDICES FOR JAKARTA AND URBAN AREAS OF VARIOUS PROVINCES
IN JAVA-BALI, AS COMPARED WITH URBAN INDONESIA, 1971.
(TOTAL POPULATION)



Jakarta's population increased between 1961 and 1971. The child dependency ratio according to the 1971 census was 77.7 per cent, while in 1961 it was only 68.9 per cent. The aged dependency ratio increased from 2.3 per cent in 1961 to 2.9 per cent in 1971. A comparison of the dependency ratios between the provinces reveals that Jakarta has the highest child dependency ratio only being exceeded by urban West Java for the years 1971. On the other hand, the aged dependency ratio is the lowest in Jakarta. The total dependency ratio of Jakarta in the year 1971 was also the highest among other urban areas in Java-Bali, except West Java (Table 5).

TABLE 5

DEPENDENCY RATIOS OF VARIOUS URBAN AREAS IN INDONESIA, 1961 AND 1971.

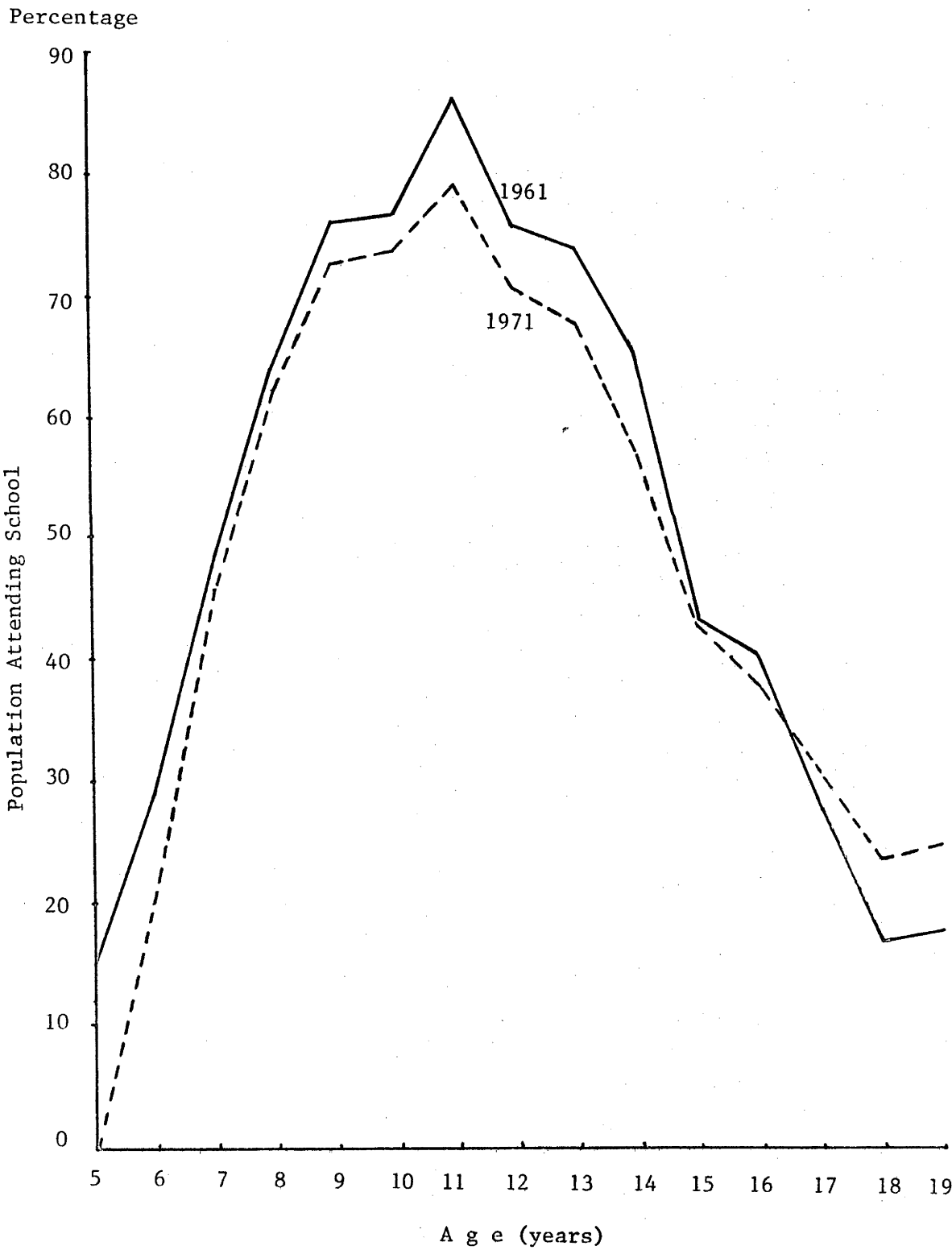
Urban areas	Dependency Ratio 1961			*	Dependency Ratio 1971		
	Child	Aged	Total		Child	Aged	Total
Jakarta	68.9	2.3	71.2		77.7	2.9	80.6
West Java	64.7	4.7	69.4		79.8	4.0	83.8
Central Java					69.8	5.3	75.1
D.I.Yogyakarta					60.2	5.9	66.1
East Java					65.7	4.5	70.1
B a l i	not available				71.7	5.6	77.3
Indonesia	67.6	4.5	72.1		75.8	4.3	80.1

Source: Calculated from BPS, 1963a: Table 2; and BPS, 1963b: Table 2.2 and 2.3.

2.2.4. School Age Population.

In 1971 a new local regulation with regard to educational system came into existence. The minimum age limit for entry into the primary school was raised to seven years, which was previously six years. Consequently, the 1971 census data did not have any child aged 5-6 years attending the school. Figure 4 clearly shows the development of school age population (5-19 years old) between 1961 and 1971. It is interesting to note that although the percentage of population aged 18 and 19 years in 1971 is lower, the percentage of children attending school is higher than the

FIGURE 4
PROPORTION OF POPULATION ATTENDING SCHOOL BETWEEN AGES 5 AND 19,
JAKARTA, 1961 AND 1971.



corresponding figures in 1961. On the other hand, the percentage of school attendance among children aged 6 - 16 in 1971 is lower than that of the 1961 population. If the educational facilities do not improve much, the proportion of population attending school will be worsened in the next future.

2.3. Marital Status.

Marriage is a universal phenomenon in Indonesia. Both men and women marry in the course of their life time. Four marital statuses, i.e. single (never married), married, widowed and divorced are recognized, and each status has legal, social as well as religious significance. Although marital status is an important factor in population dynamics as it affects fertility to a large extent and mortality and migration to a lesser extent, there is little known about the marriage patterns of population in Indonesia. The registration of vital events, including marriages, which was introduced by the Dutch Colonial Government during their occupation could not help the demographers to study the marriage pattern properly, because of the under-registration of marriages. In the past many people in Indonesia married according to the religious as well as customary laws and such marriages escaped registration. In 1974, the Indonesian Government brought in a new marriage law, which introduced new legal minimum ages at first marriage for both men (19 years) and women (16 years). The population censuses in Indonesia, however, collected and published data on the age and marital status distribution of the population. According to the 1961 census about 57 per cent of males and 74 per cent of females 10 years of age and over, in Jakarta, reported that they had been married at least once. These proportions decreased to approximately 52 per cent and 65 per cent respectively in 1971. Compared with the other urban areas of various provinces, Jakarta's figure of never married population (10 years and over) for both sexes, in 1971, showed more or less the same pattern as that for urban areas of West Java, Central

Java and urban Indonesia. It was higher than that of urban Yogyakarta and Bali, but lower than that of urban East Java (see Appendix A, Table A.3).

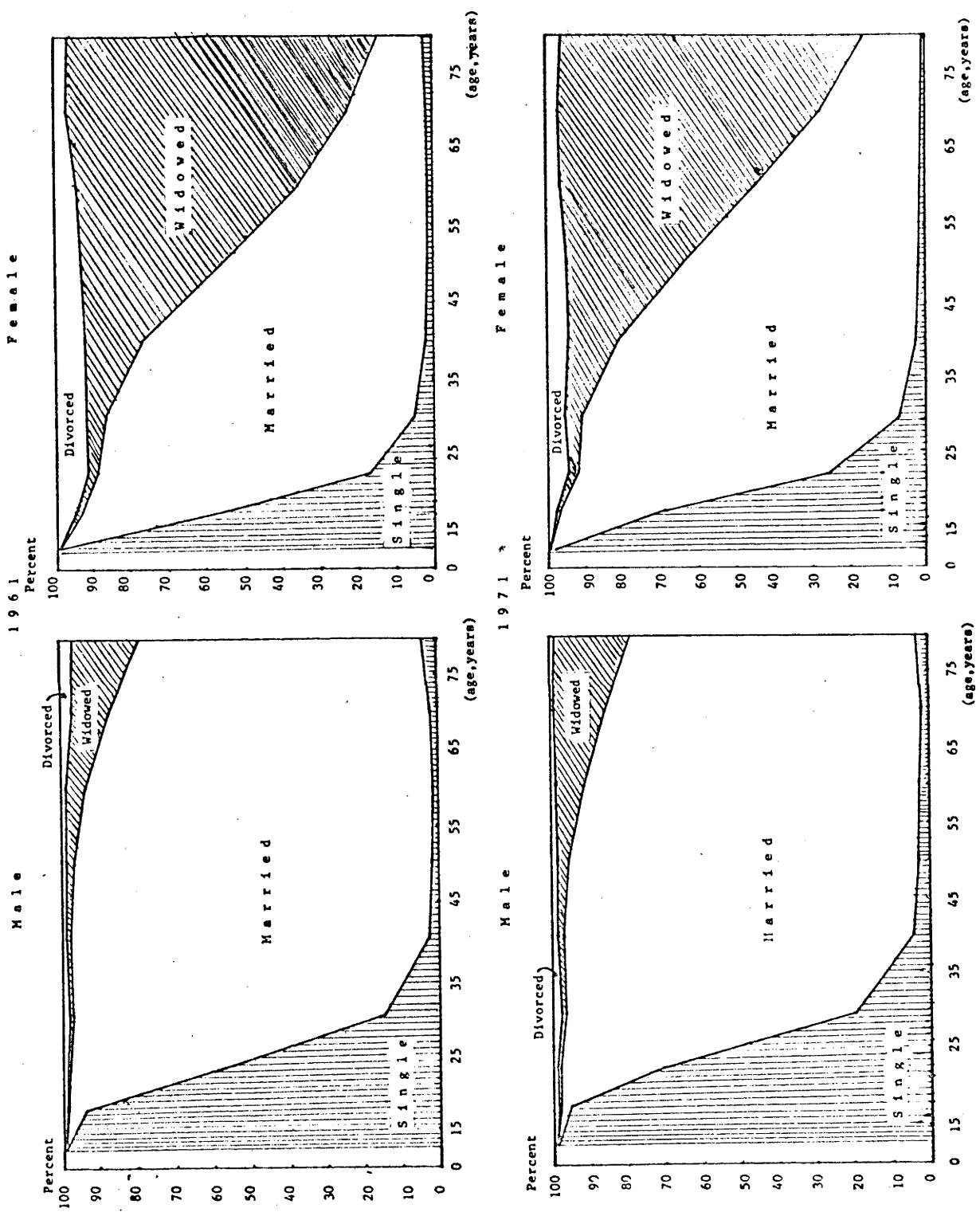
The marital distribution for males and females show a relatively smooth and expected relation with age. Proportions single decline rapidly and steadily with age until they reach quite low levels. The proportion of married people in the younger age groups tended to decline between 1961 and 1971 (see Appendix A, Table A.4 and Figure 5).

2.3.1. Age at Marriage.

Age at marriage, especially of females is known to have been low in Jakarta before the second world war, but in recent years an increasing trend in the mean age at marriage has been observed, although available marriage registration data do not substantiate this fact. The mean age at marriage calculated from the 1961 and 1971 census data, by using the Hajnal's method¹⁾ (Hajnal, 1953:129-131), was 23.2 for men and 19 for women, in 1961. These figures increased to 25.3 and 20.2 respectively, in 1971. The Jakarta K.A.P. Survey 1968, conducted by the National Family Planning Institute of Indonesia (NFPII), reported that the average age at first marriage of the sample population for males was 22.7 (N=1,088) and 16.9 years for females (N=1,117). The ideal age for first marriage as expressed by the respondents in this survey was 24.1 years for males (N=2,191) and 18.5 years for females (N=2,166) respectively (NFPII, 1970:18-19). Other surveys²⁾ have also reported an increase in the age at marriage in recent years.

-
- 1). Hajnal's method is probably not suitable for a population influenced by selective migration and mortality by marital status.
 - 2). A small demographic survey conducted in the wards of Rawasari and Kebonsirih by the Institute of Demography, University of Indonesia, reported that in the ward Rawasari the average age at first marriage among the sample population was 25 years for males (N=291) and 19 years for females (N=291). Tan Goan Tiang estimated that for 1961, the average age at first marriage for males and females were the same as above. Koentjaraningrat (1975:17) reported that in his sociological survey in two villages in southeast part of Jakarta in 1975, the average age at first marriage of the head of sample households was 19 years (N=147). No sex breakdown was reported.

FIGURE 5. PERCENTAGE DISTRIBUTION OF POPULATION BY MARITAL STATUS, SEX AND AGE, JAKARTA, 1961 AND 1971.



The age at first marriage shown by these surveys was around 25 years for men and 19 years for women. This trend is also indicated by the proportion currently married in different age groups (see Appendix A, Table A.4). The proportion of currently married men and women has declined considerably in the age group 15-19 and 20-24, during 1961-71. Late marriage could be attributed to the fact that an increasingly large proportion of girls are now completing their secondary education and also entering the labour force (see Subsection 2.5.3.).

2.3.2. Marital Disruption.

The proportion of population in this group at a given time is determined by the patterns of mortality, divorce and the remarriages of such people over a period of time in the past. The 1961 census data indicate that 2.4 per cent of males aged 10 years and over were in the state of marital disruption, while the females showed a percentage of 16.8. However, the 1971 census data show a declining trend in the proportion of persons widowed is very low in the ages 15-34, especially for men, but the proportion of currently divorced is higher, even in the younger age group. The proportion divorced was higher for women than for men. The proportion widowed is dependent upon the mortality differentials among the sexes and the extent of remarriages among them. It seems that the mortality level in the 15-34, especially for women, is quite low in Jakarta. Therefore, the proportion currently widowed among men 15-34 is very low. The level of currently divorced in Jakarta could be influenced by several factors such as economic-, psychological-, cultural-, biological- and so forth. However, it is the high rate remarriage that accounts for the relatively low percentage of male divorcees in the population.

2.4. Household Composition.

According to the 1971 census, household was defined as a person or a group of persons occupying a part or the whole of building and generally eating together from one kitchen. Household members refer to all persons usually living in one household, either being at home at the time of enumeration or temporarily absent or being on a journey for less than six months (B.P.S.1975b, Series F:xii).

An Indonesian household may contain both related and unrelated persons and the former group may also constitute one or more conjugal family nuclei. A household may consist of a married couple or parents with or without their never married children and also the head's and/or spouse's sisters and brothers and their children, their grand children and in-laws, but it can also be a single person household. Traditionally, Indonesian society favoured a large family and a large household, which is a direct consequence of the extended family system. The extended family in Indonesia may mean two or more generations living together under the same roof and sharing the cooking and living expenditures. In Jakarta, however, this idea was often realized by the indigenous society (Batawene¹⁾).

The Jakarta's 1971 census population of 4,546,492 persons lived in 851,739 households of which 81.5 per cent were husband and wife households, 13.7 per cent one-spouse households and 4.8 per cent single-person households. The corresponding figures for the urban Indonesia in 1971 were 79.6 , 15.2 and 5.2 per cent. Among the 851,739 households in Jakarta, 88.1 per cent had male heads and 11.9 per cent female heads. For urban Indonesia, among 2,995,046 households, 85.3 per cent had male heads and 14.7 per cent female heads.

i). Batawene or *Suku Betawi* is used to indicate the indigenous ethnic group of Jakarta.

The 1961 census did not provide any information about the average household size. From the 1971 census, on the other hand, it is observed that among urban areas of provinces in Java and Bali, Jakarta's household size in 1971 was larger than that of provinces in Java, but smaller than that of Bali. The average size of households of urban areas in Java-Bali and urban Indonesia is as follows (BPS,1975b:19):

<u>Urban areas:</u>	<u>Average household size:</u>
Jakarta	5.3
West Java	5.2
Central Java	5.0
D.I.Yogyakarta	5.0
East Java	4.8
B a l i	5.5
Indonesia	5.3

According to the 1971 census data, the percentage of households with less than 5 persons for Jakarta was smaller than that of urban areas of provinces in Java, but larger than that of Bali (BPS,1975b, Series F:1).

The figures for urban Indonesia were more or less the same as the figure for Jakarta, as can be seen from the following:

<u>Urban areas:</u>	<u>Household size:</u>	
	<u>up to 5 members</u>	<u>above 5 members</u>
Jakarta	58.3 %	41.7 %
West Java	58.9 %	41.1 %
Central Java	61.8 %	38.2 %
D.I.Yogyakarta	61.1 %	38.9 %
East Java	65.0 %	35.0 %
B a l i	54.5 %	45.5 %
Indonesia	58.2 %	41.8 %

The percentage distribution of the relationship of members of the household to the head is given in Appendix A, Table A.5. The heads accounted for only 18.7 per cent of the total Jakarta's population. This figure was the same as that for urban Indonesia.

More than three-fifth of the household members were the children and the spouse of the heads. Children alone accounted for 49.5 per cent and the spouse 15.3 per cent of the household members. The remainder of the household members were relatives and only 4 per cent of the members were not related to the head of households. Table A.5 also indicates that a comparatively large proportion of "other relatives", especially the males, lived in the households. On the other hand, parents (including parents-in-law) who lived in the households with their children (or children-in-law) as heads accounted for only one-fourth of the "other relatives". The figure is even lower than that for persons who are not related to the head of households. It is interesting to note that according to the census definition, in the husband-wife households, the husband was always the head of the household. It is probably a reflection of the cultural background of the Indonesian society. When the females are the heads of the households it may be that they are either unmarried females, widows or married females whose husbands did not stay at home for more than six months before the enumeration date. Or, may be they are second wives whose husbands live with their first wives. The relationship to the head pattern in Jakarta and in other urban areas of Indonesia do not differ significantly.

The marital status of the heads is shown in Appendix A, Table A.6. It can be seen that 93.2 per cent of male heads were married. Two-third of the married male heads were aged 25-44 years. As would be expected, more than 50 per cent of female heads were widowed, whereas three-fifths of them were aged 35-54 years.

Headship rates (i.e. the percentage of heads in the group considered) among males and females by age and marital status are presented in Table 6. From this table we can see that the headship rate increases with age and the rate of household formation rises more sharply after age 24. Among male heads the rate falls after age 54 years, while for female heads after 64 years.

TABLE 6
HEADSHIP RATES AMONG HOUSEHOLD HEADS BY SEX, AGE AND
MARITAL STATUS, JAKARTA, 1971.

Age and marital status of heads	H e a d s h i p R a t e s		
	Males	Females	Both Sexes
<u>Age (1)</u>			
All ages	32.7	4.5	18.7
15-24	11.2	1.5	6.1
25-34	72.3	5.9	39.8
35-44	91.8	13.2	55.0
45-54	94.0	21.1	60.4
55-64	89.4	25.3	57.3
65-74	81.6	21.3	48.8
75+	45.9	12.2	26.8
<u>Marital Status (2)</u>			
All statuses	32.7	4.5	18.7
Single	2.4	0.3	1.5
Married	88.8	3.9	45.5
Widowed	46.0	37.9	39.1
Divorced	34.0	23.3	25.3

Source : (1) Calculated from BPS,1974, Series E, No.09:Table 04.
(2) Calculated from BPS,1974, Series E, No.09:Table 05.

Table 6 demonstrates also that about 89 per cent of the male heads were currently married and the rest were divorcees, widowers and bachelors. Among the female heads, only 4 per cent were currently married. Eventhough, it is quite high in a society like Indonesia, where social (and economic as well) conditions favour male headship. The tendency to establish separate households, among men, generally increases with married status.

2.5. Socio-economic and Demographic Characteristics.

2.5.1. Ethnic Group.

The physical, cultural, linguistic, religious and other differences among various large groups of people have persisted in Jakarta over time.

The term *suku bangsa* (=sub race) has been used in Indonesia to signify a social or ethnic grouping. The study of the ethnicity of the people is important because in the sense of their social, cultural and economic behaviour they may affect the population dynamics of the country. This sub section discusses the citizenship, place of birth, religion and language of Jakarta's population.

2.5.1.1. Citizenship.

Jakarta's 1961 and 1971 census data revealed that the proportion of foreigners during this period declined. There were 4.1 per cent non Indonesian citizens in 1961 as compared with 2.9 per cent in 1971. In actuality the number of non Indonesian citizens in Jakarta has not fallen. It rose between 1961 and 1971 from 119,108 persons to 132,017 persons. But at the same time the native population increased tremendously in size. The majority group among the non Indonesian were Chinese, followed by Indians (see Appendix A, Table A.7). The proportion of Chinese residing in Bali was the largest among other urban areas of Java-Bali. This was also the case with the Indians. On the other hand, Jakarta as a capital city and Bali as a *cultural island* attracted more foreigners than the other urban areas of Java and Bali.

2.5.1.2. Place of Birth.

As mentioned in the previous section the population of Jakarta is made up of a large number of ethnic groups. Appendix A, Table A.8 shows the distribution of the population by their place of birth. The population of Jakarta in 1961 consisted of 51 per cent of persons who were born in Jakarta, and 49 per cent of persons who were born elsewhere in Indonesia. The corresponding figures for 1971 were 59.9 and 40.1 per cent respectively. The largest proportion of the outside Jakarta-born was from Java. The distribution of population by place of birth in urban areas of Java and Bali reveals some interesting features.

Firstly, persons who were born in islands outside Java reached the highest percentage in Jakarta. Secondly, D.I.Yogyakarta, as a *university city* seems to be a good attraction after Jakarta for people who were born in Sumatra. Thirdly, East Java was ranked number two as attractive for people who were born in Kalimantan and other islands. Finally, it seems that Bali was the second choice after Jakarta for people who were born in Sulawesi to migrate into.

According to the Jakarta's population censuses, more than 30 per cent of the habitants were born in Java (outside Jakarta). As was expected most of them were born in West Java. Jakarta's population who were born in Sumatra, mostly came from West-, North- and South- Sumatra. As a whole, all of the *suku bangsa* (subraces) are represented in the population of Jakarta, only the percentage varies.

2.5.1.3. Religion.

Islam is the most widely professed religion in Jakarta. At the 1971 population census, out of a total population of 4,546,492 persons in Jakarta, 3,830,735 persons or 84.3 per cent were enumerated as moslem. The corresponding figure for 1961 was 84.7 per cent. However, the highest percentage of moslem population in the urban areas of Java-Bali provinces was reached by West Java province (see Appendix A, Table A.9). It is interesting to note that each province has its own specificity in terms of professing a religion. For example, Central Java was leading in Confucius, D.I.Yogyakarta with its Catholics, East Java with Other Christianity Bali with Hinduism and finally for Jakarta, Buddhism is the religion which ,next to Islam, has large number of followers. About 6 per cent of the Jakarta's population are Buddhists. The distribution of population by religion in Jakarta during 1971 is shown in Appendix A, Table A.10. The largest concentration of moslems is found in the South-Jakarta municipality followed by East- and North- Jakarta.

2.5.1.4. Language.

In both the 1961 and 1971 censuses, people were enumerated in only one language, though they may speak more than one language. People who can speak *Bahasa Indonesia* (the Indonesian language), local language and foreign language as well, were enumerated in the *Bahasa Indonesia* only. Other persons who do not speak Indonesian but speak any of the local languages and may or may not speak any foreign languages at the same time, were enumerated in local language (BPS, 1963a:1-2; and BPS,1974:xxv).

Appendix A, Table A.11 reveals that in 1971, about 9 out of 10 persons in Jakarta spoke Indonesian, and about 10 out of 100 people spoke a local language. The average figure for the Indonesian speaking persons in urban areas of provinces in Java-Bali was around 6 out of 10 persons. Overall, in urban areas of Indonesia, about .7 out of 10 persons spoke the Indonesian language, 3 out of 10 persons spoke the local language and 6 out of 1000 people spoke the foreign language.

2.5.2. Educational Status.

In 1961, only 54 per cent of the Jakarta's population aged 10 years and over had received some kind of education. By 1971, however, the percentage had increased to 77.4 per cent. The corresponding figure for urban Indonesia in 1971 was 77.8 per cent. Among urban areas in Java and Bali provinces, West Java had the highest percentage of population who had received some kind of education, while Bali had the lowest percentage.

As expected, the educational status after the independence of the Republic of Indonesia (1945) improved. It can be seen from Table 7, that the percentage of persons in the age ranges from 10-14 to 20-24 years who have been to school have risen between 1961 and 1971. Although there has been a rapid increase in the percentage of children going to school, the educational system has not expanded rapidly enough to provide schooling for every child in the country.

TABLE 7

PERCENTAGE OF POPULATION AGED 10 YEARS AND OVER BY AGE AND EVER ATTENDED SCHOOL, JAKARTA, 1961 AND 1971, URBAN AREAS OF PROVINCES IN JAVA - BALI AND INDONESIA, 1971.

Age group	Jakarta		U r b a n A r e a s 1 9 7 1					
	1961	1971	West Java	Central Java	Yogya-karta	East Java	Bali	Indo-nesia
All ages	54.0	77.4	91.0	87.4	78.6	71.9	71.1	77.8
10-14	69.0	87.2	93.9	94.7	95.8	91.2	92.4	91.9
15-19	73.1	89.5	97.0	96.7	97.0	91.6	92.3	93.3
20-24	62.6	88.3	97.9	97.4	96.2	89.6	87.7	91.5
25-34	49.6	78.0	95.6	92.1	84.1	75.1	76.1	80.9
35-44	44.8	64.0	87.8	81.1	65.6	58.0	57.8	65.7
45-54	37.9	57.5	81.7	77.2	54.5	48.2	38.2	56.0
55-64	30.1	50.4	74.2	65.8	70.6	36.4	22.8	43.9
65-74	23.0	39.4	63.3	57.7	25.9	29.8	12.0	34.6
75+	15.7	27.2	46.3	46.0	15.2	19.9	8.2	23.9
Not stated	48.1	64.2	-	-	-	-	-	-

Source : B.P.S., 1974 , Series E, No.09-14: Table 16.
B.P.S., 1975a, Series D: Table 18.

Around 33 per cent of children aged 6-12 years in urban Indonesia had not attended primary school. Nearly 50 per cent of children aged 13-18 years and more than 75 per cent of persons aged 19-24 years had not attended schools (see Table 8). Compared with the other urban areas of Java and Bali, Jakarta had the lowest percentage of population currently attending school, except for persons aged 25 years and over. In this age group (25 years and over), D.I.Yogyakarta reveals the highest percentage.

The educational attainment of persons aged 10 years and over, shows that only 26 per cent of Jakarta's population completed the primary schooling, 11.4 per cent junior high schooling and 8.5 per cent senior high schooling. These percentages are more or less the same for other urban areas in Java-Bali except for West Java, which has an outstanding percentage of persons who completed the primary schooling and Yogyakarta, which has high percentages for persons who completed junior and senior high schooling (see Appendix A, Table A.12).

TABLE 8
PERCENTAGE OF POPULATION AGED 6 YEARS AND OVER BY AGE AND CURRENTLY
ATTENDING SCHOOL, JAKARTA, URBAN AREAS OF PROVINCES IN JAVA - BALI
AND INDONESIA, 1971.

Urban areas	Currently Attending School					
	All ages	6-12	13-18	19-24	25+	Not stated
Jakarta	24.4	59.7	43.2	14.4	2.0	17.4
West Java	27.0	62.0	49.0	18.5	2.1	-
Central Java	28.9	70.8	57.7	22.6	1.2	-
D.I.Yogyakarta	39.1	76.0	70.9	53.8	5.7	-
East Java	26.3	68.5	55.3	18.6	1.2	-
B a l i	27.8	67.5	54.9	22.6	1.2	-
Indonesia	28.5	66.7	54.5	11.1	1.6	-

Source: B.P.S., 1974 ,Series E,No.09-14:Table 20.
B.P.S., 1975a, Series D:Table 22.

It should be noted that although the percentage of population aged 10 years and over going to school has increased over the years, only a small proportion of them actually go to the universities. The 2.3 per cent figure of Jakarta and 3.9 per cent of D.I.Yogyakarta for university completed group were higher than the corresponding figure for urban Indonesia. These figures reflect the fact that Jakarta and D.I.Yogyakarta have better tertiary educational facilities than other urban areas of Indonesia.

2.5.3. Employment and Labour Force.

In economic development human and natural resources are important complementary factors to capital, technology and an economic-minded stable Government (Harbison and Myers, 1964:v). Regarding the human factor, Jakarta is in a favourable position. Its human resource is quantitatively large: a population of more than 5 million. The crux of the problem is the lack of statistical data on the number, characteristics and dynamics of the labour force. In this study, the two censuses are still the main source of data on the level of employment.

2.5.3.1. Economically Active Population.

The economically active population in this study is defined according to the labour force concept. In the 1971 census, the economically active population included all persons 10 years of age and over who were employed on the date of census, or who had worked at least 2 days on any day during the week preceding the census date as well as experienced workers who were looking for work and those waiting for the harvest time or farm season (B.P.S.,1974:xxi).

Table 9 clearly shows that the labour force participation rate in Jakarta declined from 49.6 per cent in 1961 to 43.2 per cent in 1971.

TABLE 9
LABOUR FORCE PARTICIPATION RATE OF POPULATION 10 YEARS OF AGE AND OVER,
JAKARTA 1961 AND 1971, URBAN AREAS OF PROVINCES IN JAVA - BALI AND
INDONESIA, 1971.

Urban areas	Labour force participation rate		
	males	females	both sexes
<u>1 9 6 1</u>			
J a k a r t a	76.6	21.1	49.6
<u>1 9 7 1</u>			
J a k a r t a	65.7	20.3	43.2
W e s t J a v a	58.7	19.3	38.7
Central Java	58.7	33.9	45.6
D.I.Yogyakarta	49.3	35.3	42.2
E a s t J a v a	63.2	29.9	45.8
B a l i	59.6	28.3	43.7
I n d o n e s i a	60.1	24.0	41.7

Source : B.P.S.,1963a:Table 30.

B.P.S.,1974,Series E,No.09-14:Table 33.

B.P.S.,1975a,Series D: Table 34.

This decline may be misleading as the definition of the labour force used differed between the 1961 and 1971 censuses. Both censuses used the labour forced concept, but the time-reference period chosen was different

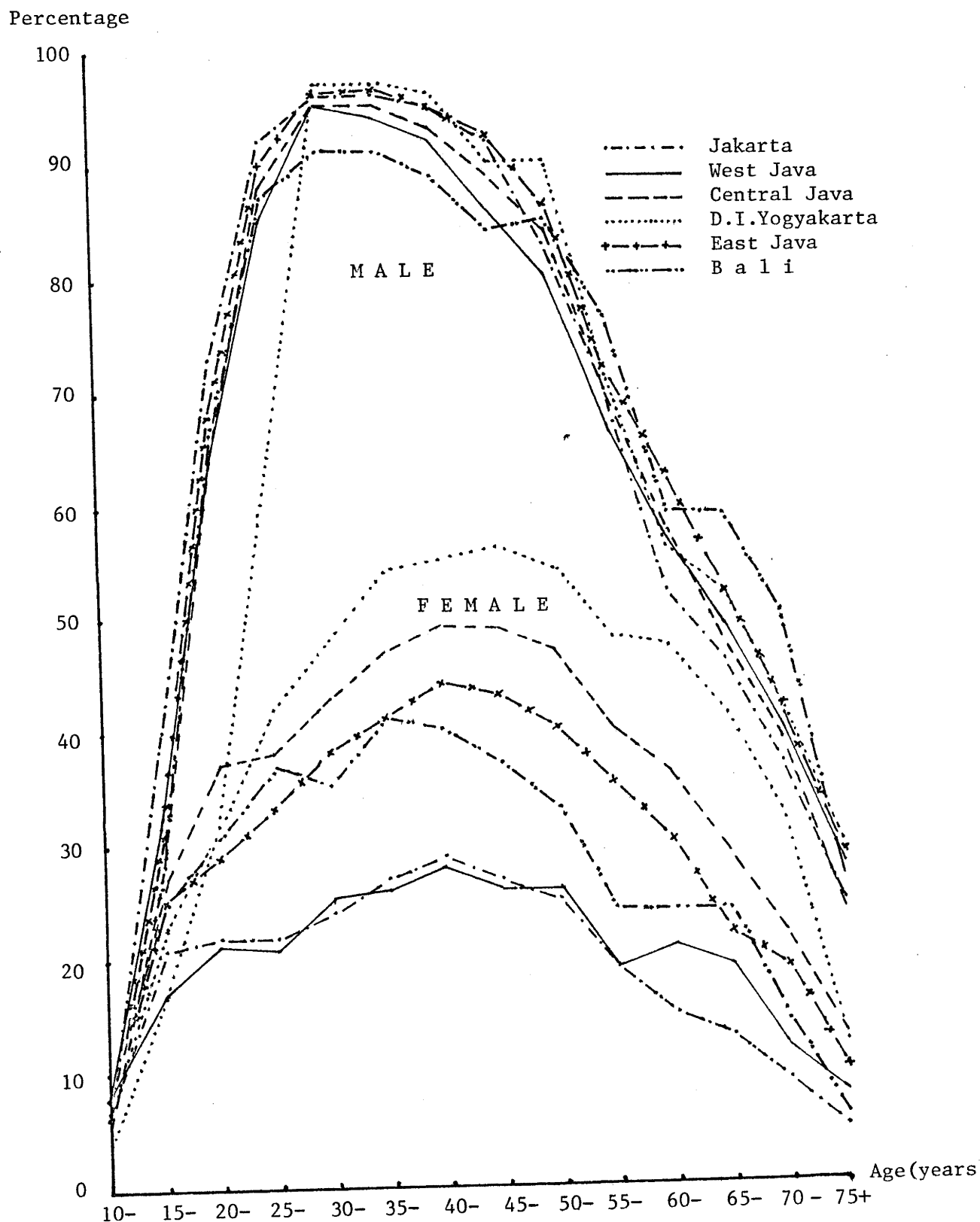
- six months in 1961 census, as against one week in the 1971 census.

Another possible explanation for the decline in labour force participation rate in Jakarta may be found in the fact that a higher proportion of the population in the working age groups are students in 1971 compared with that in 1961.

The figures reveal that urban East Java had the highest labour force participation rate, while urban West Java had the lowest among the urban areas in Java-Bali and urban Indonesia. The low participation rate in urban West Java can be explained by the lower age-specific participation rates especially amongst males in the younger age groups and due to the lower participation rate for females (see Figure 6). Thus the considerably smaller proportion of both male and female in the 10-24 age group has some impact on the higher overall participation rates in East Java. From Figure 6 we can also see that the age-specific participation rates in Jakarta for males aged 10-24 years are the highest amongst those in urban areas in Java and Bali, followed by that of East Java. Except for the 45-49 years age group, urban Yogyakarta demonstrates highest participation rate for males aged 30-59 years. For the 60 years and over age group, East Java reaches the highest rates. The participation rate for females, however, is dominated by Central Java for the 10-24 years age group and Yogyakarta for the older age group (25 years and over). Overall, Jakarta exhibits the second lowest participation rate for females after West Java.

In general, from Table 9 we can also infer that the sex-specific labour force participation rates in Jakarta, urban areas in Java-Bali and urban Indonesia follow the typical pattern of developing countries, i.e. a high rate for males and a low for females (U.N., 1962:3). In Indonesia the low rate for females is due to the traditional norms, where females especially the married ones are expected to stay home and be responsible for home-house work or assist the husband as unpaid workers.

FIGURE 6
LABOUR FORCE PARTICIPATION RATE FOR JAKARTA AND
URBAN AREAS IN JAVA-BALI, .1971.



2.5.3.2. Economically Non Active Population.

Two most striking groups in the economically non active population are of those who are attending the school and who are responsible for the house-keeping work. The percentage of population attending school in Jakarta rose from 14.7 per cent in 1961 to 18.7 per cent in 1971 (see Apperlix A, Table A.13). Both male and females in this group showed rise in percentages. The percentage of non active population attending school is the lowest (18.7) for Jakarta compared with urban areas of provinces in Java-Bali and urban Indonesia. On the other hand, the percentage of house-keeping population in Jakarta was the highest. It is expected that the bulk of this group are the female house-keepers.

Another group which is also a part of the economically non active population is that of the income-recipients. The percentage of income-recipients for Jakarta in 1971 was the lowest among urban provinces in Java and urban Indonesia. It is higher than that the figure for urban Bali. The sex-differential in this group was not significant.

2.5.3.3. Employment Status of the Economically Active Population.

The economically active population in 1961 was grouped into five employment status categories: Own account workers, Employers, Employees, Unpaid family workers and Others. In the 1971 population census the sixth group was added, which comprised all those seeking work for the first time.

In general, there have been no significant changes in the percentage in various employment status categories in Jakarta between 1961 and 1971. Also the sex-differential reveals the same pattern between 1961 and 1971, except the figures in the employees group. The 1961 figures show that the percentage of male employees was lower than that of females, but in 1971 the pattern had reversed (see Appendix A, Table A.14).

From Table A.14 (Appendix A) we can infer that the percentages of own account workers and employers in Jakarta were the lowest compared with those in urban areas in Java-Bali and urban Indonesia, while the percentage of employees was the highest. It is noteworthy that Jakarta and urban West Java have the sex-differential pattern in the own account workers group opposite to that observed in other places in Indonesia. The percentage of male own account workers in Jakarta and West Java were higher than that for females. It was expected that for Bali, the percentage of own account workers was the highest. Besides the own account workers in Bali the percentage of unpaid family workers was also the highest, only a few points above that for urban Indonesia.

CHAPTER 3

COMPONENTS OF POPULATION GROWTH

3.1. Mortality.

3.1.1. Historical Overview (up to 1930).

Little is known on the mortality trends of Jakarta for the earlier years. The analysis of mortality for the late nineteenth century is based on the mortality statistics reported in the *Koloniaal verslag* for 1874-93.

The crude death rate (=CDR) estimates for Jakarta during 1874-93 (and during the twentieth century as well) are presented in Table 10. To eliminate the influence of annual fluctuations, five-year averages have been taken. The CDR estimates for 1874-93 show an interesting feature. The first ten years (1874-83) CDR estimates were markedly higher than those for the second ten years. It is very likely that throughout 1874-83, the high mortality rates were due to the poor health condition; lack of knowledge of hygiene and sanitation; the endemic diseases such as malaria, tuberculosis and dysentery; and nutritional deficiencies as well (*Koloniaal verslag*, 1874-93). Furthermore, the population size as the denominator was probably an underestimate.

In the earlier twentieth century, Ouwenhand as cited in Mertens (1976) studied the quantitative estimate of mortality in Jakarta. The CDR during 1903-11 was estimated as 57-58 per 1000 persons, which is questionable. Unfortunately, there is no indication how the rates were obtained. It should be noted that although there had been a new system operating on death registration for Jakarta since 1917 (Dept. van Landbouw, Nijverheid en Handel 1933, I:11), the quality of the results was still poor. In the new system for registering deaths a *verplichte doodshow* (a compulsory examination of deaths) was required before burial.

TABLE 10
ESTIMATED PAST MORTALITY INDICES FOR JAKARTA

Year	Group	CDR	IMR	S o u r c e
1874-78	All	34.1	NA	Koloniaal verslag
1879-83	All	38.3	NA	Koloniaal verslag
1884-88	All	21.2	NA	Koloniaal verslag
1889-93	All	20.3	NA	Koloniaal verslag
1903-22	Natives	57.8	NA	Ouwenhand
	Chinese	45.2	NA	Ouwenhand
	Europeans	28.9	NA	Ouwenhand
1929	Natives	NA	231.0	Walch-Sorgdrager
	Chinese	NA	150.0	Walch-Sorgdrager
1930	Natives	25.8	294-319	Brand
	Chinese	22.8	246.0	Brand
	Europeans	9.6	54.2	Brand
	Indonesian	NA	176-294	Widjojo Nitisastro
1934	Natives	30.0	300	de Haas
	Chinese	20.0	160	de Haas
1932-34	Europeans	9.0	62	de Haas
1935-36	Natives	29.0	300	de Haas
	Chinese	18.0	150	de Haas
	Europeans	10.0	56	de Haas
1936	Indonesian	20.1-25.6	NA	Widjojo Nitisastro
1936-37	Chinese	18.0	155	Liem Tjay Tie and de Haas
1938-40	Not specified	NA	211	Widjojo Nitisastro
1943-45	Not specified	25-33	NA	de Vries
1957	All	14.0	124.6	Ministry of Health
1958	All	NA	170.6	Ministry of Health
1960	All	13.2	186.6	Kannisto
1961	All	10.7	140.5	Kannisto
1962	Indonesian	17.5	NA	Kannisto(Jakarta, Surabaya and Bandung)
1963	Indonesian	10.4	NA	Ueda (Jakarta, Surabaya and Bandung)
1964	Indonesian	8.7	NA	B.P.S.

Note : NA = Not available.

CDR = Crude Death Rate.

IMR = Infant Mortality Rate.

In 1929, Walch-Sorgdrager studied infant mortality in Jakarta based on the records of children born at Boedi Kemoeliaan maternity hospital. The infant mortality was estimated at 231 per 1000 live births (Widjojo, 1970:105). Based on the 1930 census it was estimated that the CDR for Jakarta Municipality was 25.8 per 1000 population (Dept. van Landbouw, Nijverheid en Handel, 1933, I:11).

3.1.2. Recent Trends (after 1930).

3.1.2.1. Level of Mortality During 1930-60.

A number of studies on mortality in Jakarta have been conducted during this period (see Table 10). The estimated CDR among natives of Jakarta's population ranged from 20.1 to 30 per 1000 population as compared with 18 to 20 per 1000 persons for the Chinese and 9 to 10 per 1000 persons for the European Jakarta population during 1930-36 (de Haas 1936 and 1938). However, Brand as cited in Mertens (1976) argued that the figure of 30 per 1000 persons for natives as estimated by de Haas was too high because the number of deaths had been applied to an underestimated population. Brand suggested a figure of 25.8 per 1000 persons instead.

The infant mortality estimates obtained from a number of sources indicate figures ranging from 176 to 319 per 1000 live births for the natives during 1930-36. Widjojo (1970:105) feels that the figure 300 as estimated by de Haas is too high because of an underestimation of births resulting from underestimating the postcensal population.

For the year 1940-50 only a few estimates are available. It is very likely that the mortality levels worsened in the decade 1940-50. De Vries estimated the CDR for Jakarta during the Japanese occupation (1943-45) as ranging from 25 to 33 per 1000 persons (Widjojo, 1970:119).

The succeeding decade, 1950-60, saw a gradual reversal of mortality as its level turned to the prewar levels, as a result of the improvements in health conditions, standards of living, food situation etc. The campaign against malaria was very succesful and seemingly was one of the important causes of rapid decline in mortality. Mochtar and Soedarjono (1957) reported that in the subdistricts Senen and Salemba the estimated CDR for the year 1956 and 1957 based on the registration data was higher than that based on the survey data. From the civil service

registration data they estimated the CDR as 16.2 and 15.4 per 1000 persons for Seren and Salemba respectively. While from their survey, the estimates were 12.5 and 12.8 per 1000 persons respectively. It seems that the CDI estimates based on the registration data are more reliable, considering that the death registration was accompanied by a compulsory death examination.

The 1958 infant mortality estimate based on the death statistics obtained from the Ministry of Health's annual report for Jakarta yielded a figure of 171 per 1000 births.

3.1.2.2. Level of Mortality After 1960.

The vital statistics reported by the Ministry of Health as cited in Kanristo (1963:17), reveals that the CDR for Jakarta in 1960 and 1961 was 13.2 and 10.7 per 1000 persons respectively. The infant mortality rates for the same period were 186.6 and 140.5 per 1000 births.

The CDR estimates for three large cities in Java (Jakarta, Surabaya and Bandung) for the year 1962-64, were in the range of 8.7 to 17.5 per 1000 population. The CDR estimates for those three large cities in Java were obtained from the demographic surveys which originated from the post enumeration survey after the 1961 population census.

3.1.3. Sex and Age Patterns of Mortality After 1960.

The 1962 to 1964 demographic surveys yielded a combined sex-age specific mortality for three large cities in Java, i.e. Jakarta, Surabaya and Bandung. And it is not comparable with data for 1966 and 1971, which are specified for Jakarta alone. At this stage, therefore, it is very difficult to make any decisive judgement on the sex-age patterns of mortality in Jakarta because of the lack and the less reliability of available data on deaths. It is generally accepted, however, that male mortality is higher

than female mortality for all ages. Table 11 presents the mortality differentials by sex and age for Jakarta in 1966 and 1971 based on the adjusted¹⁾ deaths statistics.

TABLE 11

ESTIMATES OF AGE SPECIFIC MORTALITY RATES FOR JAKARTA, 1966 AND 1971, BASED ON ADJUSTED DEATHS STATISTICS (PER 1000 PERSONS).

Age group	1 9 6 6			1 9 7 1			Change (%)	
	Males	Females	Sex ratio	Males	Females	Sex ratio	Males	Females
0	119.4	100.9	118.3	128.9	99.1	130.1	+ 8.0	- 1.8
1-4	33.3	32.1	103.7	20.3	19.0	106.8	-39.0	-40.8
5-9	5.9	5.1	115.7	4.6	4.1	112.2	-22.0	-19.6
10-14	2.4	1.5	160.0	2.3	1.7	135.3	- 4.2	+13.3
15-19	2.2	1.5	146.7	2.4	1.8	133.3	+ 9.1	+20.0
20-24	2.9	2.1	138.1	2.9	2.3	126.1	0.0	+ 9.5
25-29	4.2	3.4	123.5	3.1	2.6	119.2	-26.2	-23.5
30-34	4.4	4.1	107.3	4.2	4.1	102.4	- 4.5	0.0
35-39	6.5	5.5	118.2	5.9	5.2	113.5	- 9.2	- 4.5
40-44	9.9	8.9	111.2	8.1	6.9	117.4	-18.2	-22.5
45-49	15.1	10.4	145.2	12.9	8.8	146.6	-14.6	-15.4
50-54	28.9	22.2	130.2	21.4	14.8	144.6	-26.0	-33.3
55-59	29.7	17.3	171.7	31.4	20.7	151.7	+30.7	+19.7
60-64	61.8	37.4	165.2	54.2	32.8	165.2	-12.3	-12.3
65-69	70.6	43.4	162.7	79.6	47.6	167.2	+12.7	+ 9.7
70-74	150.7	113.0	133.4	105.2	78.7	133.7	-30.2	-30.4
75+	183.8	167.7	109.6	200.2	169.6	118.0	+ 8.9	+ 1.1
Total	15.2	12.8	118.8	12.6	10.5	120.0	-17.1	-18.0

Source : Calculated from D.K.K. DKI Jakarta, annual report 1966-1972 on death statistics.
(Adjustment factor = 42 per cent).

- 1). The adjustment factor (42 %) introduced here is applied for all age groups. Ideally, the adjustment factor should be different for each age group, but because of lack of detailed information about sex-age specific differential on registration coverage, it is impossible to introduce age specific adjustment factor in this study.

Overall, the sex ratio of mortality for the total population did not change significantly from 1966 to 1971. However, sex ratios had increased for the 0, 1-4, 40-54, and 65 years and over age groups, and decreased for the rest of the age groups. Table 11 also indicates that there is no sex differences in the process of mortality decline. Each sex shows a decline of about the same magnitude (17 and 18 per cent).

The age patterns of mortality in Jakarta either for males or females, irrespective of its level, conform to the world standard pattern. The death rates start at a high peak immediately after birth, fall to a minimum in the early term, and rise, gradually at first and more and more rapidly as age advances (U.N., 1963:51). In addition, the mortality data for 1966 and 1971 demonstrate an age differential in the process of mortality decline during the period under discussion. The age differential in the decline of mortality in this study has been examined by considering the per cent change in age specific death rates from 1966 to 1971. In most of the age groups there has been a decline in mortality between 1966 and 1971, but it should be kept in mind that the pattern of decline in the age specific death rates might be affected by the age mis-statement in the census and on the death certificate. The increase in mortality in some age groups may have been partly due to the inaccuracies in the statistics, i.e. under-registration of deaths in 1966 and/or age mis-statement in the census and on the death certificate in both periods. The extent of under-registration of deaths has been

reduced in the recent years. However, the resulting tendency to understate the decline in death rate would likely be affected more seriously in the figures for young children rather than for adults. On the other hand, the medical services have been improved during the period under discussion. To some extent the reduction in mortality rates and age specific death rates in particular, can be attributed to the improvement in health facilities and services.

3.1.4. Construction of an Abridged Life Table.

In this study, two attempts are made to construct a life table for 1971 using census data and the registration data (death statistics). The first attempt is based on the data on the numbers of children ever born and children living obtained in the 1971 census. William Brass has evolved a method by which the proportions dead can be translated into life table function q_x (Brass, 1975:50-59). Based on the Brass method we can adjust the proportion dying before age 1, 2, 3, 5, 10, 30 and 35 years. Three appropriate parameters for selecting multipliers are chosen, i.e. (1) P_1 / P_2 is used to select the factors for the first age group ($q_{(1)}$); (2) P_2 / P_3 is used for the estimates of $q_{(2)}$, $q_{(3)}$, and $q_{(5)}$; and (3) $\bar{m}$ is used for estimates of older age groups. The estimates $q_{(2)}$, $q_{(3)}$ and $q_{(5)}$ obtained from the Brass method are then fitted to the Coale and Demeny's West Model Life Table. By interpolating the West Model Life Table for the appropriate level an abridged Life Table for Jakarta is constructed.

The second attempt is based on the death statistics reported by the Jakarta Municipality Health Section for the year 1970-72. As mentioned before the estimated completeness of the death registration for Jakarta is 58 per cent (B.P.S., 1976:98). By assuming that the under-registration is equally distributed over the entire age range,

we can simply inflate the death statistics by 42 per cent. The three year average of age specific death rate is converted to the corresponding life table mortality rates by using the formula:

$${}_nq_x = \frac{2 \cdot n \cdot M_x}{2 + n \cdot M_x}$$

where : ${}_nq_x$ = life table mortality rate between age x and $x + n$
 M_x = observed death rate for ages x to $x + n$
 n = number of years in the observation period.

Assuming a radix of 100,000 births, the survivors (${}_1L_x$) to each exact age x were calculated. The persons-years lived (${}_nL_x$) were calculated by using the following formulae (Coale and Demeny, 1966:20):

$$\text{For males } {}_1L_0 = 0.33 {}_1L_0 + 0.67 {}_1L_1$$

$${}_4L_1 = 1.24 {}_1L_1 + 2.76 {}_1L_5$$

$$\text{For females } {}_1L_0 = 0.35 {}_1L_0 + 0.65 {}_1L_1$$

$${}_4L_1 = 1.239 {}_1L_1 + 2.761 {}_1L_5$$

$$\text{For other ages (both sexes) : } {}_nL_x = n \frac{{}_1L_x + {}_1L_{x+n}}{2}$$

$$\text{For 75 years and over (both sexes): } {}_{\infty}J_{75} = \frac{{}_1L_{75}}{{}_{\infty}M_{75}}$$

The results of these computations yielded the Abridged Life Table for Jakarta.

3.1.4.1. Discussion of Estimation.

The estimation provided by the first attempt calls for discussion about the Brass method and selection of $q_{(x)}$. Experience has shown that the most accurate of these childhood mortality rates are either $q_{(2)}$, $q_{(3)}$ or $q_{(5)}$. However, it is important to point out that these estimates may be affected by omission errors which are usually inherent in retrospective data. The use of $q_{(5)}$ estimates to indicate childhood mortality trends in Indonesia is justified by McDonald et al, regarding their FM survey in six regions in Indonesia (McDonald et al, 1976:64). On the other hand, the use of $q_{(2)}$ to indicate childhood mortality trends based on census data probably

gives the best estimate. For the sake of comparison in this study, therefore, we estimate the mortality trends by using $q_{(2)}$, $q_{(3)}$ and $q_{(5)}$. These estimations result in mortality levels equal to the West Model Life Table levels 12.7, 13.1 and 13.6 respectively, with expectancy of life at birth of 49.25, 50.25 and 51.50 years for females and 46.34, 47.36 and 48.58 years for males.

The estimation provided by the second attempt, on the other hand, calls for an accuracy of the death statistics. In this study the death statistics provided from the Jakarta Municipality Health Section were far beyond accurate. In fact the coverage of registration in Jakarta, in general, as indicated by *Biro Pusat Statistik* (B.P.S.) was very poor, i.e. 58 per cent. Although in the second attempt the death statistics were adjusted by 42 per cent, we feel that there should be a specific adjustment factor which have to applied to each sex and age group. The death statistics were also adjusted by taking the three year average (1970-72). The life expectancy at birth provided by the second attempt is 54.13 years for females or equal to level 14.65 West Model Life Table and 49.05 years for males or equal to level 13.79 West Model Life Table. Cho et al (1976:63) estimated the expectancy of life at birth of Jakarta's population as being 50.75 for females and 47.91 years for males or equal to level 13.3 of the West Model. Based on these 5 findings of mortality levels of Jakarta, we can assume that the appropriate level of mortality for Jakarta in 1971 should be somewhere in the range of 12.7 to 14.65 of West Model Life Table.

Finally, by using the Brass' Logit System, those two sets of Life Tables, i.e. based on census data and the death statistics, are then converted to a plausible Abridged Life Table for Jakarta, which yielded an expectancy of life at birth of 53.88 years for females or equal to level 14.55 of West Model and 48.75 years for males or equal to level 13.66 of West Model Life Table. This Life Table is presented in Table 12.

TABLE 12
ABRIDGED LIFE TABLE FOR JAKARTA, 1971.

F E M A L E

Age	l_x	n^d_x	n^q_x	n^L_x	n^S_x	T_x	e^o_x
0	100000	9739	0.09739	93669.7	0.88075	5388045.6	53.88
1	90261	5193	0.05733	346706.1	0.95872	5294375.9	58.66
5	85068	1257	0.01478	422197.5	0.98513	4947669.8	58.16
10	83811	1255	0.01497	415917.5	0.98481	4525472.3	54.00
15	82556	1273	0.01542	409597.5	0.97971	4109554.8	49.78
20	81283	2052	0.02525	401285.0	0.97416	3699957.3	45.52
25	79231	2096	0.02645	390915.0	0.97253	3298672.3	41.63
30	77135	2199	0.02851	380177.5	0.97069	2907757.3	37.70
35	74936	2258	0.03013	369035.0	0.96741	2527579.8	33.73
40	72678	2553	0.03513	357007.5	0.96028	2158544.8	29.70
45	70125	3119	0.04448	342827.5	0.94816	1801537.3	25.69
50	67006	3990	0.05955	325055.0	0.93015	1458709.8	21.77
55	63016	5092	0.08080	302350.0	0.90124	1133654.8	17.99
60	57924	6852	0.11829	272490.0	0.85776	831304.8	14.35
65	51072	8652	0.16941	233730.0	0.78862	558814.8	10.94
70	42420	11110	0.26190	184325.0	0.76365	325084.8	7.66
75	31310	31310	1.00000	140759.8	0.43300	140759.8	4.50

M A L E

Age	l_x	n^d_x	n^q_x	n^L_x	n^S_x	T_x	e^o_x
0	100000	11703	0.11703	92393.1	0.85715	4875413.3	48.75
1	88297	6160	0.06976	336180.2	0.94982	4783020.2	54.17
5	82137	1447	0.01762	407667.5	0.98522	4446840.0	54.14
10	80690	960	0.01190	401050.0	0.98226	4039772.5	50.07
15	79730	1886	0.02365	393935.0	0.97257	3638722.5	45.64
20	77844	2436	0.03129	383130.0	0.96782	3244787.5	41.68
25	75408	2496	0.03310	370800.0	0.96530	2861657.5	37.95
30	72912	2650	0.03635	357935.0	0.96255	2490857.5	34.16
35	70262	2712	0.03860	344530.0	0.95545	2132922.5	30.36
40	67550	3427	0.05073	329182.5	0.94244	1788392.5	26.48
45	64123	4152	0.06475	310235.0	0.92441	1459210.0	22.76
50	59971	5228	0.08718	286785.0	0.89792	1148975.0	19.16
55	54743	6482	0.11841	257510.0	0.85653	862190.0	15.75
60	48261	8296	0.17190	220565.0	0.79678	604680.0	12.53
65	39965	9633	0.24104	175742.5	0.70915	384115.0	9.61
70	30332	10813	0.35649	124627.5	0.67196	208372.5	6.87
75	19519	19519	1.00000	83745.0	0.40190	83745.0	4.29

3.1.5. Causes of Death.

There is very little information on the causes of death patterns and this is attributed to the lack of any form of health information system for Jakarta. Despite the improvement in the health services and in medical or paramedical personnel, the information system is still poor. An attempt has been made by Jakarta Municipality Health Section to register the causes of death, but the results are questionable. Despite the causes of about 23 to 27 per cent of the recorded deaths in 1967-70 being not known, the figures portray causes of death patterns of population in the developing world: the respiratory tract infections are reported to be the major killers followed by enteritis. However, geriatric diseases (a pattern of developed world) are ranked in the third place. Tuberculosis continues to be among the top four killers (see Table 13).

TABLE 13

DEATHS BY TEN MAJOR CAUSES FOR JAKARTA, 1967 - 70.
(PERCENTAGE).

Causes of death (disease)	1967	1968	1969	1970
Respiratory tract infection	29.8	33.3	29.8	28.0
E n t e r i t i s	13.7	13.0	12.5	12.9
Geriatric diseases	6.3	6.2	6.8	6.2
Tuberculosis	3.9	4.5	4.4	4.4
Heart diseases	1.9	1.8	2.2	3.4
Tetanus (including Tetanus neonatorum)	1.8	NA	2.0	2.2
D y s e n t e r y	0.9	0.9	0.4	0.6
T y p h o i d	0.3	0.2	0.2	0.1
D i p h t h e r y	0.2	0.1	0.1	*
Congenital diseases	0.2	0.2	0.3	0.3
Maternal diseases	NA	0.4	0.7	NA

Source : D.K.K. DKI Jakarta, annual report 1967-70.

Note : NA = Not Available.

* = The figure is too small.

3.2. Fertility.

3.2.1. Historical Overview (up to 1930).

Like the study of mortality, the analysis of fertility for the nineteenth century is based on the birth statistics reported in the *Koloniaal verslag* for 1874-93. It is understandable that such statistics suffer from a number of deficiencies : accuracy of the definition employed and its application; completeness of registration; accuracy of allocation by place and time; and accuracy of the classification of the births in terms of demographic and socio-economic characteristics. However, from these data we can, at least, estimate the crude birth rate (=CBR) for Jakarta in the earlier years. Despite its limitations, as a fertility index, crude birth rate is still useful.

According to an estimate based on the *Koloniaal verslag* 1874-93, the crude birth rate ranged between 24 and 36 per 1000 persons (Table 14). The plausible causes of the low level of the CBR during the nineteenth century are : (1) under registration of births; (2) poor health condition, especially among women, which would also have been a cause of lowering the fecundity of the female population. On the other hand, because of the high death rates, particularly at infant and early ages, it is probable that the parents might have had more children. This situation, if existed, would have contributed to the high birth rates.

There is no ready information available which would give insight into the trends of fertility for Jakarta in the first two decades of the twentieth century. Based on the 1930 census data, Widjojo (1970:105)

TABLE 14

ESTIMATED CRUDE BIRTH RATES FOR JAKARTA, 1874 - 1976.

Period	CBR	S o u r c e
1874-78	24.2	Koloniaal verslag
1879-83	27.4	Koloniaal verslag
1884-88	35.7	Koloniaal verslag
1889-93	29.9	Koloniaal verslag
1930	39.7-66.7	Widjojo Nitisaastro
1934	35	de Haas
1935-37	38	Liem Tjay Tie and de Haas
1938-40	38.3	Tesch
1943-45	15-28	de Vries
1957	28.9-32.8	Mochtar and Soedarjono (registration data)
	40.4-42.1	Mochtar and Soedarjono (survey data)
1958	23.8	Ministry of Health (annual report)
1960	21.8	Kannisto
1961	21.9	Kannisto
1962	37.4	Kannisto (figure for Jakarta, Surabaya and Bandung)
1963	31	Ueda (figure for Jakarta, Surabaya and Bandung)
1964	34.9	B.P.S. (figure for Jakarta, Surabaya and Bandung)
1967-71	43-45	Sinquefield and Bambang Sungkono
1972-73	44	Sinquefield and Bambang Sungkono
1976	39-43	Sinquefield and Bambang Sungkono

estimated the CBR of Jakarta in 1930 as ranging from 39.7 to 66.7 per 1000 persons. The high level of CBR in this case is seemingly caused by the overestimation of the number of births¹⁾.

3.2.2. Recent Trends (after 1930).

The crude fertility indices, like crude birth rate and general fertility rate for Jakarta after 1930 showed an interesting picture. The crude birth rate obtained from various sources (Table 14), for example, showed the following trends:

1). Widjojo estimated the number of birth for 1930 based on the "children who could not yet walk" obtained from the 1930 census and on the annual number of deaths of children aged less than one year in Jakarta during 1929-31 as observed by Brand. The resulted number of births which was ranging between 12,951 and 21,748 for a total population of 325,978 was seemingly rather too high. For detailed information see Widjojo (1970:94-95;104-105).

During the 1930's the CBR showed a moderate range of 35 to 38 births annually per 1000 population. During the following decade abrupt changes took place as a result of several wars. The estimated level of CBR in this decade had decline rapidly (15-28 births per 1000 population). In the decade of the fifties a baby boom erupted similar to that of the other provinces in Indonesia after the wars. The CBR regained its prewar levels and even higher, but continuously declined by the end of this decade. During the decade of sixties the CBR level increased again and resulted even higher than its level in the fifties by the late sixties. Finally, during the first half of the seventies decade the CBR demonstrated a declining trend, from 45 in 1970 to 43 per 1000 persons in 1976, a decline of 4.4 per cent.

Since the CBR is strongly influenced by age, sex and other characteristics of population, other fertility measures that are less affected by such characteristics are more useful. The general fertility rates (=GFR), defined as the number of births per 1000 women aged 15-44 years, is one of the first refinement (Pressat, 1972:178). The GFR for Jakarta in this study is calculated from the 1961 and 1971 census data. By using Jakarta's 1971 survival ratio provided from Jakarta's life table as presented in the previous section on mortality, we estimate the number of: (1) births during 1961-66 and 1966-71; and (2) female population aged 15-44 years in 1966. The calculation reveals that the average women aged 15-44 years in 1961-66 and 1966-71 as being 815,330 and 997,602 respectively, while the estimated number of births during the same period as being 757,092 and 946,917 respectively. This resulted in a GFR of 185.7 and 189.8 per 1000 women 15-44 years of age annually during 1961-66 and 1966-71, which is quite high. Because of lack of available GFR data to compare with, it is impossible at this stage to draw a conclusion on the trends in the general fertility rate for Jakarta's population after the 1930's.

The child women ratio indicates that there were 673 children under 5 years per 1000 women aged 15-49 years and 654 children aged 5-9 years per 1000 women aged 20-54 years. The ratio of children 5-9 years for women 20-54 years gives us a measure of fertility for an earlier quinquennium. Furthermore, children aged 5-9 years are often more completely enumerated in a census than children under 5 years of age (Shryock and Siegel, 1971, II:504).

The refined fertility indices, which are more reliable, demonstrate a more clear picture about the trends of fertility decline after the sixties, particularly from the late sixties up to 1976. The age specific fertility rate for the young women at ages 15-19, for example, was lowered due to the continuously rising age of women at marriage. It declined by 13 per cent from 1961-63 to 1967-70 (Cho et al, 1976:3). However, for the middle aged women, 20 - 34 years, the age specific fertility rate increased by 6 per cent during the same period. For the decade of seventies, Siquefield and Bambang Sungkono (1977:Table 2) estimated that the age specific fertility rate for the young women (15-19) declined by 4 per cent, the middle aged women (20-34) declined by 8 per cent and the older women (35 years of age and over) by 42 per cent (see Table 15). In addition to the refined fertility indices, probably the total fertility rate is the most preferable summary measure. The total fertility rate (TFR) for Jakarta during the late sixties varied from 5.1 to 5.9. The data used in the calculation of this rate, however, have been different. For example, the TFR calculated based on the census data (5.1) used the "own children method" and that based on the Java Bali Fertility Survey (=JBF Survey) (5.9) used the "pregnancy history". The sampling response and non response errors might have affected the TFR based on the survey results. The revised KAP study in 1968 revealed a TFR of 5.5. Both estimates obtained from JBF Survey and KAP study are higher than that from the census.

TABLE 15
ESTIMATED AGE - SPECIFIC AND TOTAL FERTILITY RATES FOR JAKARTA
BASED ON VARIOUS SOURCES.

Source and year	Age Specific Fertility Rate							Total Fertility Rate
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	
1968 KAP Survey ¹⁾								
1963-67	124	309	338	265	160	64	2	5.5
1970 Current ²⁾								
Fertility Survey	60	197	251	304	119	65	11	5.0
1971 Census Data ³⁾								
1961-63	161	244	253	189	119	46	*	5.1
1964-66	157	256	264	202	119	47	*	5.2
1967-70	140	266	268	198	110	41	12	5.1
1961-70	151	256	263	196	115	44	12	5.1
1976 JBF Survey ⁴⁾								
1967-71	114	258	257	256	154	102	38	5.9
1972-73	120	258	269	177	154	66	35	5.5
1976	115	239	205	202	63	45	39	4.6

1). See NFPII, 1970 : Table 4.

2). See LDFEUI, 1971 : Table 4. "

3). See Cho et al, 1976 : Table 1.1.

4). See Sinquefield and Bambang Sungkono, 1977: Table 2.

* = Figure too small.

The 1971 census estimate of TFR is probably more reliable than the survey estimates as the latter may have been influenced by sampling errors. On the other hand, the JBF Survey obtained a valuable information on TFR for the early seventies. The survey reveals that there is a declining trends in TFR during the early seventies. It should be noted, however, that the TFR for 1976 from the JBF Survey is based on different method (pregnancy status method) of estimation than that for 1967-71 and 1972-73 (derived from ASMFR).

By observing the crude and especially the refined fertility indices for the period after 1930, we come to the conclusion that there is, indeed, a declining trend in fertility particularly after the sixties.

3.2.3. The Patterns of Fertility After 1930.

In terms of patterns, the age specific fertility rates obtained from various sources (Table 15) demonstrate an interesting picture. All of the sources reveal that Jakarta's fertility patterns start from a

higher level, reaches the peak at age 25-29 years and goes down at the older age groups. The only exception is shown by the 1970 Jakarta Current Fertility Survey in reaching the peak at age 30-34 years. This pattern is beyond the normal one, and is probably due to the age mis-statement so that many mothers were concentrated at the 30-34 year age group.

It is interesting to note that the estimates obtained from the "own children method" based on the 1971 census data, show higher age specific rates mostly in the younger age group (20-24 years) and lower rates in the older age group (35-39 years) than the 1970 Jakarta Current Fertility Survey and the "pregnancy history method" based on the JBF Survey data as well. The arguments why they differ should be focused in three factors. Firstly, the age mis-statement factor. The age mis-statement of women and children is probably less in a survey than in a census. Moreover, the age mis-statement in the census may be biased in different directions for women with and without young children. Secondly, the adjustment factor. The adjustment factor for children who are not living with their mother did not differ by age of women as assumed by Cho et al (1976). Sinquefield and Bambang Sungkono (1977) argue that it is more likely that young women with few children like to have their children living with them than older women with more children. Sinquefield suggested that the adjustment factor should differ by age of women. Thirdly, the survey, probably underestimated widowed and divorced women.

When we compare the age specific fertility rates of Jakarta with urban Indonesia (including Jakarta) as obtained from Cho's data (Cho et al, 1976: Table 1.1), it can clearly be seen that both Jakarta and urban Indonesia's figures show the same pattern in fertility for all corresponding periods. Jakarta shows a higher rate in the young aged women (15-19 years) and a slightly lower rate in the 35-39 and 40-44 year age groups than that of urban Indonesia. For the other age groups

Jakarta's fertility shows more or less the same patterns.

The mean number of children ever born data are the only fertility information which are directly obtained from the census data. The number of children as such does not portray anything about current fertility, but it is usually employed as an index of the fertility trends over a period of time. Therefore, it should be kept in mind that those two measures, i.e. current and retrospective fertility, refer to entirely different fertility experiences, period fertility as against cohort measures.

The estimated number of children ever born for Jakarta shows a regular pattern, increasing with age, but the increments in the older age groups tend to be irregular. There is no significant differences between the average number of children ever born per mother in the younger age groups (15-19 and 20-24), as revealed by the 1961 and 1971 censuses (Table 16). In the older ages, on the other hand, the differences were more marked.

TABLE 16
MEAN NUMBER OF CHILDREN BORN ALIVE BY AGE OF EVER MARRIED WOMEN,
JAKARTA, 1961 AND 1971.

Year	Mean number of children born alive					
	15-19	20-24	25-34	35-44	45-54	15-54
1961	0.73	1.87	3.44	4.66	4.88	3.22
1971	0.75	1.85	3.72	5.07	5.03	3.59
Increase %	3.0	-1.0	8.0	9.0	3.0	11.0

Source : B.P.S., 1963a : Table 44.

B.P.S., 1974, Series E, No. 09 : Table 26.

However, it should be kept in mind that the children ever born data might have been distorted by : (1) errors arising from omission of children, especially those who died in infancy and those who left the household for any reason; and (2) relatively high proportion of older women who were enumerated as childless in the census.

3.3. Migration.

Although the number of lifetime interprovincial migration in Indonesia has been small (4.8 per cent of the population) it is not the case with Jakarta. In fact, migration is the most important component of population change in Jakarta. In 1961, for example, nearly one-half of the population enumerated in Jakarta was born elsewhere in Indonesia.

The main concern of this section is a detailed reconstruction of the picture of population movement and changing distribution of the Jakarta's population resulting from the 1961 and 1971 censuses. In addition, it deals with the analysis of socio-demographic characteristics of migrants in Jakarta and the extent to which migrants differed in their characteristics from the non-migrants.

General demographic situation of Jakarta during 1961-71 was discussed in the second chapter. Since the data on migration are very limited and lacking in detail, the reconstituted results are inevitably dependent upon the degree of understanding of the general demographic situation and the trends during this period. The 1961 census provided data only on the lifetime migration into Jakarta, while the 1971 census provided more detailed information about migration. It is important to note that in 1971, some provinces had been split into two or more provinces. The place of birth, in this case, was defined as the new province after the split (B.P.S., 1975a, Series D:xxii). For example, a person born in Central Sulawesi (Central Sulawesi was included in North Sulawesi before the split) had his birth place recorded as Central Sulawesi and not North Sulawesi, although at the time of his birth there was no Central Sulawesi province. In the 1971 census, three questions on population movement had been asked, province of birth, last province of residence and duration of residence in the province of current residence (B.P.S., 1974, Series E, and 1975a, Series D). Several categories of migrants could be distinguished from these three questions:

- (1). Lifetime migrant is one whose province of residence at the enumeration date is different from his/her province of birth, regardless of intervening migrations (U.N.,1970:2-3).
- (2). Interprovincial migrant is one whose province of residence at the enumeration date is different from his/her province of last previous residence.
- (3). Recent migrant is one whose province of origin differs from his/her province of residence at the enumeration date, with duration less than some fixed number of years.
- (4). Return lifetime migrant is one who return back to his/her province of birth after he/she has been absent for some time (U.N.,1958:47).
- (5). Non-migrant is one whose province of residence at the enumeration date is the same as his/her province of previous residence and his/her province of birth.

In order to simplify the presentation, in the next subsections regrouping of province are made. Except for Jakarta, the other provinces of Indonesia are regrouped according to the 5 main islands in Indonesia, they are Java, Sumatra, Kalimantan, Sulawesi and Other Island. The category Other Island, includes Bali, East and West Nusatenggara, Maluku and Irian Jaya.

3.3.1. Lifetime Migration.

The main advantage of lifetime migration as a measure, is that it can indicate in-migrants, out-migrants and specify streams more accurately than measures of interprovincial migration. On the other hand, lifetime migration provides little indication when the migration occurred.

The 1961 census data indicate that the lifetime migration into Jakarta was around 1.4 million persons or 48 per cent of the total Indonesia born population of Jakarta. The figure based on the 1971 census data was 1.8 million persons or 39.7 per cent of the total Indonesia born population of Jakarta. Further, the 1971 census data reveal that the net lifetime

migrants into Jakarta were 1.7 million persons or 36.7 per cent of the total Indonesia born Jakarta population (see Appendix B, Table B.1). As compared with that of the other provinces as estimated by Sundrum (1976: Table 2), the percentage of Jakarta's net lifetime migrants for 1971 was the highest. As expected the greatest bulk of the lifetime migrants into Jakarta came from Java (81 per cent of the total lifetime in-migrants) and the lifetime migrants from Sumatra took second place (13 per cent). Reversely, the lifetime out-migrants from Jakarta stream to Java (68 per cent) and to Sumatra (24 per cent), as the first and second choices of destination respectively (see Table 17).

TABLE 17
LIFETIME MIGRATION FOR JAKARTA BY PLACE OF ORIGIN AND PLACE OF
DESTINATION, 1971.

Place of origin and place of destination	L i f e t i m e m i g r a n t					
	In		Out		Net	
	(number)	(%)	(number)	(%)	(number)	(%)
J a v a	1,446,528	80.7	90,087	68.1	1,356,441	81.7
S u m a t r a	229,329	12.8	32,085	24.3	197,244	11.9
K a l i m a n t a n	35,159	2.0	2,742	2.1	32,417	2.0
S u l a w e s i	56,610	3.2	3,469	2.6	53,141	3.2
Other Island	24,009	1.3	3,832	3.0	20,177	1.2
I n d o n e s i a	1,791,635	100.0	132,215	100.0	1,659,420	100.0

Source : Calculated from B.P.S.,1974, Series E, No.09: Table 22 and
B.P.S.,1975a, Series D: Table 23 and 24.

It is clear that Jakarta has an important role as a centre of attraction for the population movement in Indonesia. From the studies of interprovincial migration (Speare, 1975 and Sundrum, 1976), Sundrum observed that among 25 provinces of Indonesia, Jakarta is the first choice for 18 provinces and second choice for five provinces. In the same direction Speare calculated that the 31.4 per cent of all lifetime migration of Indonesia stream to Jakarta.

Finally, the amount of 36.7 per cent for net lifetime migration

as revealed by the 1971 census implies that the contribution of migration to total growth had been considerably high. Such high contribution of migration to population growth has been reported for many cities in Asia, Africa and Latin America (McGee, 1971:52-53).

3.3.2. Inter-Island Migration.

The 1971 census provided tabulation of migrants by province of previous residence. The amount of in-migration according to the previous place of residence (regrouped in islands) is higher than that of lifetime migration, because all lifetime migrants are also included in the former. Table 18 shows the magnitude of the in-, out- and net-migration by previous place of residence.

TABLE 18
INTER-ISLAND MIGRATION FOR JAKARTA BY PLACE OF ORIGIN AND PLACE OF
DESTINATION, 1971.

Place of origin and place of destination	I n t e r - i s l a n d M i g r a n t					
	In (number)	(%)	Out (number)	(%)	Net (number)	(%)
J a v a	1,472,785	80.1	355,918	70.1	1,116,867	83.5
S u m a t r a	241,136	13.1	101,150	20.2	139,985	10.5
K a l i m a n t a n	39,206	2.1	8,787	1.8	30,844	2.3
S u l a w e s i	56,472	3.1	20,628	4.1	35,844	2.7
Other Islands	28,086	1.6	13,756	2.8	14,330	1.1
I n d o n e s i a	1,837,685	100.0	500,239	100.0	1,337,446	100.1

Source : Calculated from B.P.S.,1974, Series E, No.09: Table 22 and
B.P.S.,1975a, Series D: Table 23 and 24.

The stream of this type of migration is somewhat similar as that of lifetime migration. Only Sulawesi has slightly less out-migrants to Jakarta according to this type of migration than that of lifetime migrants. This is probably caused by the progressive moves made by the Sulawesi's lifetime migrants. For example, they moved to Kalimantan first and then to Jakarta.

3.3.3. Recent Migration.

The inter-island migration becomes more useful when crosstabulated by duration of residence. The recent migration can be obtained by summing the number of migrants with a fixed duration of residence at the place of enumeration. To calculate the recent migration in this subsection, we take 10 years (i.e. census interval) as the time reference.

The 1971 census used the *de jure* method to enumerate persons in provinces where they had resided or where their usual place of residence was for the past six months (Suharto and Abdulmadjid, 1973:16-17).

There were 1,837,685 in-migrants enumerated in the 1971 census who came from various islands of Indonesia, of which 1,039,911 persons or 56.6 per cent had been residing in Jakarta for less than 10 years and 797,774 persons or 43.4 per cent for more than 10 years (see Appendix B, Table B.2). About 57 per cent of the recent in-migrants were migrated less than 5 years preceding the 1971 census date. From Table B.2 we can also see the digit preference in the duration data. For example, the number of in-migrants from Java and Sulawesi with 5 years duration of residence was higher than that with 4 or 6 years of residence.

Table B.2 also enable us to calculate the medium duration of residence as follows:

<u>Migrants to Jakarta from:</u>	<u>Median duration (years):</u>
Java	8.6
Sumatra	6.8
Kalimantan	7.2
Sulawesi	6.7
Other Islands	7.1
Indonesia	8.2

The total recent migration from various islands of Indonesia that occurred during 1961-66 (5-9 years residence) and 1966-71 (0-4 years residence) is presented in Table 19.

TABLE 19
RECENT MIGRATION FOR JAKARTA BY PLACE OF ORIGIN AND PLACE OF
DESTINATION, 1961 - 66 AND 1966 - 71.

Place of origin and place of destination	Recent Migrants 1961-66			Recent Migrants 1966-71		
	In	Out	Net	In	Out	Net
J a v a	339,837	150,318	189,519	464,565	82,792	381,773
Sumatra	70,481	43,025	27,456	88,670	24,210	64,460
Kalimantan	9,893	4,495	5,398	14,522	1,961	12,561
Sulawesi	17,116	7,638	9,478	18,141	6,337	11,804
Other Islands	8,386	6,703	1,683	9,058	4,191	4,867
Indonesia	445,713	212,179	233,534	594,956	119,491	475,465

Source : B.P.S., 1974, Series E, No. 09-14: Table 25.

The total recent migration from various islands of Indonesia during 1961-66 was 445,713 persons or almost 10 per cent of the total Indonesia born population of Jakarta in 1971. During 1966-71 the recent in-migration increased to 594,956 persons or about 13 per cent of the Indonesia born Jakarta's population in 1971. The recent out-migration decreased from 212,179 persons during 1961-66 to 119,491 persons during 1966-71. As a result, the total net gain also increased from 233,534 to 475,465 persons or from 5.2 to 10.5 per cent of the total Indonesia born Jakarta's population in 1971.

3.3.4. Return Migration.

The return lifetime migration into Jakarta is obtained by subtracting the native born population of Jakarta from the non-migrants of Jakarta. The amount involved is insignificant in its contribution to the total growth of Jakarta's population. It accounted only for 44,802 persons or 1 per cent of the Indonesia born population of Jakarta (see Appendix B, Table B.1). However, compared with the lifetime out-migrants, their percentage (34.1) had been significant. It is probable that the return migrants consisted of people

who are working in the services, posted in another place and returned to Jakarta. Another possibility is that they are voluntary lifetime out-migrants who became dissatisfied in the place of destination and returned back to the place of origin.

3.3.5. Reasons for Migration.

Neither 1961 and 1971 census data provided the reasons for migration into Jakarta. However, the migration survey conducted by Heeren (1955) revealed that economic motive is the main reason for migration followed by education and the unsafe condition of the place of origin. The later surveys conducted by Temple (1972) and Suharso et al (1975) although differed in scope from the survey done by Heeren revealed more or less identical reasons for migration (except the reason of the unsafe condition of their place of origin).

3.3.6. Sex and Age Characteristics of Migrants.

Since different cohorts are subject to different probabilities of abrasion and different periods of exposure, we should expect, that people who migrated to Jakarta at different periods of time had quite different characteristics. In this subsection, therefore, we shall examine the characteristics of only those migrants whose duration of residence in Jakarta was less than 5 years.

The recent in-migrants with duration of residence in Jakarta less than 5 years, have a slightly unbalanced sex composition favouring females (96 males for 100 females, as can be seen in Appendix B, Table B.3). The analysis of the overall sex composition reveals that the sex ratio (males per 100 females) varies from the younger to the older age groups and between migrant and non-migrant populations of Jakarta. Starting with balance sex composition in the 0-4 age group the sex ratio of the in-migrants gradually

declines up to 15-19. Further, male dominance is observed starting from the ages 20-24 to 40-44 with a maximum in the 25-29 age group (120) and tends to decline again at older ages.

When we compare migrants and non-migrants (see Appendix B, Table B.3) we note that the difference in the sex ratio of migrants and non-migrants varies with age. The non-migrants show a normal sex ratio in the ages under 15 (around 105) followed by a female dominance in the ages 15-19 to 35-39 and male dominance in the ages 40-49, and 55-59 with a maximum in the 45-49 age group (111). The observed difference in the pattern of sex ratio between the recent in-migrants and non-migrants in 1971 is probably due to the age-sex selectivity among migrants and differentials in fertility and mortality of both the groups.

The imbalance of the sexes among the recent migrants is made even clear when the sex ratios of in-migrants are compared with those of the out-migrants as can be seen from the following:

<u>1966-71 in-migrant from:</u>	<u>sex ratio:</u>	<u>1966-71 out-migrant to:</u>	<u>sex ratio:</u>
J a v a	88	J a v a	103
Sumatra	126	Sumatra	131
Kalimantan	97	Kalimantan	126
Sulawesi	150	Sulawesi	146
Other Islands	151	Other Islands	186
Indonesia	95	Indonesia	110

The large difference among the sex ratios of the in- and out-migrants is probably caused partly by age-sex selectivity, duration of residence, education attainment, occupational distribution of the migrants and other socio-economic factors in the places of origin. In addition to these causes, distance of place of origin/destination to/from Jakarta seemingly plays also an important role. Java, especially West Java, which is adjacent to Jakarta has a relatively low sex ratio among the in- and out-migrants. Further migration streams from/to most of the more distant places to/from Jakarta had relatively higher sex ratio. The greater the distance and

barriers to movement, the greater the sex ratios of the migrants.

The age composition of migrants almost universally differs markedly from that of non-migrants or the general population at place of origin and destination. The sex and age distribution of migrants and non-migrants in Jakarta for 1971 is given in Table B.4, Appendix B.

About 54 per cent of the in-migrants are concentrated in the adolescent and young adults age groups (15-34) and about 72 per cent of them are in the productive ages (15-64). The number of recent in-migrants rises from the youngest age group to a maximum at ages 20-24 followed by consistent step-wise declines at older ages. This does not imply that maximum in-migration takes place at ages 20-24. According to Zachariah (1968:81) the age at which maximum in- or out-migration takes place may be inferred from changes in the percentage of migrants in successive age groups. In this study, the greatest increase between two consecutive five-year age groups is observed between ages 10-14 and 15-19 and the greatest decrease between ages 25-29 and 30-34. Accordingly we may say that the age group of maximum in-migration was close to 15 years and that of maximum out-migration around 30 years.

In notable contrast with that of the in-migrants, the number of non-migrants decline consistently, in a step-wise manner, from the youngest to the oldest age group. About 62 per cent of the non-migrants being under 15 years of age as compared with 26 per cent of the in-migrants. The age pattern differentials between the migrants and non-migrants probably can be explained as follows: the migrant group decreases by death and out-migration, increases by further in-migration, and is not affected by births. Children born to migrant mothers in Jakarta are defined not as migrants, but as native born population. The non-migrant group also decreases by death and out-migration, but increases by birth and is not affected by in-migration (except through return migration). Thus in general, the age pattern differentials of the migrants and non-migrants are mainly caused by the differential of the source of growth.

Finally, we can calculate the mean age of in-migrants at the time of their move, by subtracting their mean age now from the mean years of residence. Migrants who were aged x years in 1971 and whose duration of residence was t years were $(x-t)$ years old when they came to Jakarta. The mean age at which the migration took place for both males and females was between 19 and 20 years during the ten years preceding the census (see Appendix B, Table B.5).

3.3.7. Educational Characteristics of Migrants.

The only information about educational characteristics of migrants provided from the census data is the educational attainment of lifetime migrants aged 10 years and over. Education attainment like marital status, is not a fixed characteristic. It can change at any time and migration may be either a cause or consequence of such changes. Ideally, to examine the educational characteristics of migration we should use the information obtained from the most recent migrants. However, because there is no such information available, in this subsection we are compelled to use the educational characteristics of the lifetime migrants. To simplify the presentation, the educational levels have been grouped into three levels, i.e. no education; low education and high education. The low education includes category not yet finished elementary school, elementary school and junior high school; the high education includes category senior high school, academy and university.

The 1971 census data reveal that most of the non-migrants had lower educational level than that of lifetime migrants. Only 5 out of 100 natives had high educational level. In general, lifetime in-migrants from outside Java show higher proportions in high educational categories, especially lifetime in-migrants from Sumatra. Migrants from Java show lowest level of education, even more they had larger percentage in no educational level than that of the natives (see Appendix B, Table B.6). However, special care should

be taken in examining the levels of education of the migrants. Though the 1971 census data did not provide tabulation of educational levels of migrants by age, we know that the bulk of migrants are concentrated in the younger age groups and young people are relatively more educated than the older people. In this case, Speare (1975) stated that around 50 per cent of the difference in educational level is the consequence of the differential of age distribution between migrants and native population.

It is a fact that Jakarta being the centre of government, commerce, industry, education and culture for Indonesia, it has, to some extent, better educational resources than other provinces. It attracts, therefore, many of the well educated people from other regions and undoubtedly the desire for better education would be one of the many causes of migration to Jakarta.

Finally, the lifetime out-migrants from Jakarta showed better educational levels than non-migrants. They revealed a much higher percentage in the high educational level, a much lower percentage in the group of no education than the non-migrants.

CHAPTER 4

FERTILITY DIFFERENTIALS

The analytical assessment of trends and patterns of fertility in Jakarta calls for some details explaining the possible relationships between fertility and the social-, economic- and cultural-variables. The effect of social-, economic- and cultural-structure on fertility can be seen through the values that parents attach to children and the satisfactions they derive from having a large or a small family. A number of KAP studies in Family Planning have shown that married couples in the developing countries desire a larger family size than couples in the developed countries (Berelson, 1966). These findings, naturally, stimulate us to think about the motivational factors behind the desires.

In this chapter we shall analyse fertility differentials based on unpublished 1971 census data on children ever born which were available on a computer tape (only in respect of ever married women aged 15-49). The analysis is restricted to the examination of the differentials in fertility by a few social-, economic- and cultural-characteristics. The 1971 census data reveal that there were about 7.5 per cent out of 874,907 ever married women aged 15-49 in Jakarta who did not state the number of children born to them. In this study, those who did not state the number of children born to them are assumed as *nullipara* (zero parity). It should be kept in mind that the average number of children ever born to mothers by age groups reflects influences of the past trend of fertility.

4.1. Social Characteristics Differentials.

4.1.1. Citizenship.

In order to simplify the presentation, the citizenships are grouped into three groups, i.e. Indonesian, Chinese and Other citizens. The category Other citizen includes Indians, Pakistanis, Arabians and others. It should be noted that one limitation of the study of citizenship differentials here is that most Chinese, Indians, Arabians etc. are Indonesian citizens. This means the data deals with a very select group who have not become citizens of Indonesia. Table 20 presents the average number of children ever born to mothers by age and citizenship. It is clear that among mothers aged 45-49, the Chinese mothers exhibit the highest parity. The reason for this, among other things, may be found in the Chinese traditional way of life : strong normative emphasis on the succession of the family name through son. Therefore, son preference is regarded as the core of high fertility attitude among Chinese women, especially in the older age groups. The completed family size of Chinese mothers is about 1.1 children above the level reported by Indonesian mothers.

TABLE 20
AVERAGE NUMBER OF CHILDREN BORN ALIVE TO MOTHERS BY AGE
AND CITIZENSHIP, JAKARTA, 1971.

Citizenship	Age of mothers							Mean CBA*)	N
	15-19	20-24	25-29	30-34	35-39	40-44	45-49		
Indonesian	0.8	1.9	3.2	4.4	5.1	5.0	5.0	3.5	859,382
Chinese	0.7	1.4	2.6	3.3	4.7	4.7	6.1	3.2	13,149
Others	1.0	1.9	2.6	4.8	4.5	4.8	3.7	2.6	2,376
T o t a l	0.8	1.8	3.2	4.3	5.1	5.0	5.3	3.5	874,907

*) . Mean number of children born alive standardized for age.

Among the most fertile ages (20-29) the Indonesian mothers exhibit the highest average number of children ever born followed by Other citizen and Chinese mothers. It is probably due to the tendency of marrying at younger ages among the Indonesian mothers. But as long as fertility is influenced by so many factors we could not claim that age at marriage has been the only cause of the difference.

Since the population of Jakarta is made up of approximately 40 per cent migrants the level of fertility among the Indonesian mothers should be examined in respect of ethnic fertility differences. This will be discussed in the following subsection.

4.1.2. Place of Birth.

In general, the average parity patterns of Jakarta born mothers is higher than that of migrants. The standardized (for age) mean number of children ever born to mothers by place of birth ranges from 3.0 to 4.0 (see Table 21), 3.0 being for the Kalimantan and Other Island mothers and 4.0 for Jakarta born mothers. However, the lowest figure shown by mothers born in Kalimantan and Other Island is rather misleading. Because, in actual fact the fertility of native born mothers of Kalimantan and Other Island is higher than that of native mothers of Java and Sulawesi as well (see Cho et al, 1976: Table 1.1) .

TABLE 21
AVERAGE NUMBER OF CHILDREN BORN ALIVE TO MOTHERS BY AGE AND
PLACE OF BIRTH, JAKARTA, 1971.

Place of birth	Age of mothers							Mean CBA*)	N
	15-19	20-24	25-29	30-34	35-39	40-44	45-49		
Jakarta	0.8	2.0	3.7	5.0	5.7	5.5	5.7	4.0	327,960
J a v a	0.7	1.7	3.0	4.0	4.7	4.6	4.6	3.3	471,693
Sumatra	0.5	1.4	2.6	3.9	5.0	5.7	5.6	3.3	49,916
Kalimantan	0.7	1.7	2.3	3.3	4.4	4.8	5.4	3.0	7,412
Sulawesi	1.0	1.9	2.8	3.8	4.3	5.1	4.8	3.2	11,861
Other Islands	0.8	1.6	2.4	2.9	4.5	5.1	4.8	3.0	3,666
Indonesia	0.8	1.8	3.2	4.3	5.1	5.0	5.3	3.5	874,907

*) . Mean number of children born alive standardized for age.

It seems more likely that there was selectivity in the migration process in terms of fertility. Other evidence of the selectivity of the migratory process can be seen from the fact that the average number of children ever born to mothers who resided in Jakarta less than five years is lower than that of mothers who resided for a long period (see Appendix B, Table B.7).

Among mothers nearing the end of their childbearing period (aged 35-39 and 40-44), the Jakarta born mothers demonstrate the highest average number of children ever born followed by Sumatra-, Kalimantan-, Sulawesi-, Other Island- and Java-born mothers. And among mothers aged 20-29 the Jakarta born mothers have also the highest average number of children ever born followed by Java-, Sulawesi-, Sumatra-, Kalimantan- and Other Island-born mothers.

4.1.3. Education.

Before the second world war, only a few young Indonesian girls were going to school. Those who did achieve some schooling, came almost exclusively from well-to-do classes of their societies. Since the independence of the Republic of Indonesia, however, the extension of the education system allowed many boys and girls of the middle and lower classes to attend schools.

It is obvious that the higher the educational level the greater the desire to have more contact with modern life. These contacts then make people more and more aware of a better standard of living. Since family size may affect the standard of living, people try then to reduce the size of their family. The figures presented in Table 22 seemingly support this assumption, i.e. a negative relation between educational attainment and the average number of children patterns - the higher the educational level of mothers the lower is the level of the average number of children ever born. However, it is too premature at this stage to make a decisive judgement such as this before examining the relationship of fertility with the economic variables. As can be seen from Table 22 there is a deviation from this, i.e. among mothers aged

45-49. In this age group, a positive relation between fertility and educational level has been demonstrated.

TABLE 22
AVERAGE NUMBER OF CHILDREN BORN ALIVE TO MOTHERS BY AGE AND
EDUCATIONAL LEVEL, JAKARTA, 1971.

Educational level of mothers	Age of mothers							Mean CBA*)	N
	15-19	20-24	25-29	30-34	35-39	40-44	45-49		
No education	0.7	1.9	3.4	4.5	5.1	4.9	4.8	3.6	337,649
Low education	0.8	1.9	3.3	4.5	5.2	5.1	5.1	3.6	473,389
High education	0.4	1.1	2.0	2.9	3.8	3.8	5.2	2.5	63,869
T o t a l	0.8	1.8	3.2	4.3	5.1	5.0	5.3	3.5	874,907

*) . Mean number of children born alive standardized for age.

In terms of education as a social indicator, the finding presented here conforms to the socio-demographic law¹⁾ but in terms of economic indicator it contradicts the finding in the economic characteristics differentials (see Subsection 4.2) and the other findings presented by Hull and Hull (1976). Only high educated mothers in 45-49 age group show the positive relation between education and fertility.

4.2. Economic Characteristics Differentials.

It was thought that the lower the economic classes the higher the fertility (see Wrong, 1967). And the studies showing an opposite pattern (i.e. positive relation between fertility and economic class) are often criticized on the basis of defective data or poor analytical technique. However, many studies in Asian countries, like in India (Jain, 1939 and Driver, 1963); in China (Notestein, 1963); in Philippine (Clark, 1967); in Iran (Ajami, 1976) and in Indonesia (Hull and Hull, 1976), observed cases of a positive relation between various measures of economic class and fertility.

1). The higher fertility of the lower classes had been observed so often and in so many countries that the existence of a negative relation between fertility and class or socio-economic status has virtually acquired the force of a socio-demographic law (Wrong, 1967).

In this section, we will examine the relationship between fertility and economic characteristics. But because the 1971 census did not provide data on the income of the population, the economical classes are represented by the house type (in this case the living units), economic activity and occupation of mothers.

There are four types of living unit categories regarding the construction of the walls, roof and floor of the domicile concerned. It is assumed that people who lived in category I of living unit belonged to the highest category of economic class and those living in units of category IV to the lowest economic class.

4.2.1. Living Units.

Table 23 reveals that the completed family size of women in the two higher economic classes (who lived in category I and II living units) exceed lower levels. The finding confirms the observation made earlier by Haryono Suyono (1974:17) that the higher income recipients in Jakarta have higher fertility than the poor. The positive relation between income and fertility among majority of Indonesian women had also been observed by Hull and Hull (1976:16-17).

TABLE 23
AVERAGE NUMBER OF CHILDREN BORN ALIVE TO MOTHERS BY AGE AND
CATEGORY OF LIVING UNITS, JAKARTA, 1971.

Category of living units	Age of mothers							Mean CBA*)	N
	15-19	20-24	25-29	30-34	35-39	40-44	45-49		
I	0.7	1.7	2.8	3.8	4.9	4.9	5.1	3.3	254,274
II	0.7	1.8	3.3	4.6	5.4	5.3	5.1	3.7	203,854
III	0.8	2.0	3.4	4.6	5.2	5.1	5.0	3.3	353,844
IV	0.7	1.8	3.3	4.0	4.4	4.2	4.8	3.3	62,935
Total	0.8	1.8	3.2	4.3	5.1	5.0	5.3	3.5	874,907

*) . Mean number of children born alive standardized for age.

The standardized (for age) mean number of children ever born to mothers who have lived in the category II living units is the highest among those who lived in the other categories living units. However, special care should be taken in analysing the income variable and fertility, regarding the time lag between the achievement of level of income (economic class) and the childbearing which was actually under way (Blau and Duncan, 1967:3636), particularly in analysing the retrospective fertility.

It is noteworthy that mothers in the young age groups (15-19 to 30-34) who lived in category I living units had lower average number of children ever born than those living in category IV living units (see Table 23). This is not necessarily in conflict with the previous finding, because: firstly, the well-to-do women tend to delay the age at first marriage; secondly, probably many of them are practicing family planning. To make an accurate judgement we feel that it is necessary to control these variables (age of mothers and living units) with duration when the current economic status was achieved and with other variables such as duration of marriage, contraceptive use, still birth, lactation period and so forth. With the available data it is not possible to do this.

4.2.2. Economic Activity.

Data presented in Table 24 support the view that working mothers prefer to minimize the number of their children. Out of 874,907 mothers aged 15-49 only 21.3 per cent are economically active, whereas 17.7 per cent are working mothers. The standardized (for age) mean number of children ever born to working mothers is 2.5, 24 to 36 per cent fewer than that of non-working mothers (excluding mothers who went to school and those categorized as "others" and "not stated"). The reason for this may be found in two aspects: (1) in order to realize their goals of achieving or maintaining a higher standard of living, women who work - to a greater extent - may on

that account abstain from childbearing than non-working women; (2) the selection aspect either whereby women with no or very few children find it easier to accept employment away from the home or whereby employers prefer employ women with no or very few children rather than women with many children.

TABLE 24
AVERAGE NUMBER OF CHILDREN BORN ALIVE TO MOTHERS BY AGE AND
ECONOMIC ACTIVITY, JAKARTA, 1971.

Type of activity	Age of mothers							Mean	N
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	CBA*)	(%)
Worked	0.5	1.1	2.2	3.2	3.7	3.7	4.0	2.5	17.7
Looking for work	0.7	1.8	3.0	3.8	4.4	4.9	5.1	3.3	3.6
Went to school	0.3	0.5	1.7	-	-	-	-	0.5	0.2
House keeping	0.8	2.0	3.4	4.7	5.6	5.6	5.7	3.9	74.5
Income recipients	-	1.2	3.6	4.6	4.7	4.6	4.9	3.4	0.6
Others	0.4	1.0	1.6	2.6	3.4	3.4	3.7	2.2	2.1
Not stated	0.7	1.5	2.4	3.3	4.3	4.2	3.2	2.7	1.3
T o t a l	0.8	1.8	3.2	4.3	5.1	5.0	5.3	3.5	100.0

Note : Total of mothers (N=100 %) = 874,907 persons.

*) .Mean number of children born alive standardized for age.

4.2.3. Occupation.

Among the 874,907 mothers in Jakarta, only 20.1 per cent have experienced several groups of occupation. The standardized (for age) mean number of children ever born to these groups range from 2.0 to 3.8 as can be seen in Table 25, where 3.8 being for mothers who have no occupation. Relatively high mean number of children ever born (standardized for age) has been found among mothers with the primary industries, i.e. agriculture and production and transportation, while lower levels have been found among mothers with the white collar and professional occupation. It is interesting to note, that the completed size of mothers in professional occupation was the highest among all of the occupational group of mothers. This finding is not

TABLE 25
AVERAGE NUMBER OF CHILDREN BORN ALIVE TO MOTHERS BY AGE AND
OCCUPATION, JAKARTA, 1971.

Occupation of mothers	Age of mothers							Mean	N
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	CBA*)	
No occupation	0.8	2.0	3.4	4.7	5.6	5.5	5.4	3.8	699,282
Professional and technician	0.3	1.1	2.2	3.2	4.3	4.1	5.9	2.7	12,063
Administrative and management	-	1.4	0.7	2.6	4.4	1.6	4.0	2.0	1,051
Clerical	0.3	1.0	1.7	2.6	3.6	3.1	3.1	2.1	14,905
Sales	0.7	1.5	2.8	3.9	4.4	4.4	4.4	3.1	52,176
Service	0.4	0.9	1.8	2.7	2.9	3.2	3.3	2.1	58,885
Agriculture	0.3	0.9	3.4	5.0	3.6	5.0	3.6	3.2	2,028
Production and Transportation	0.4	1.5	2.4	5.5	3.7	3.3	4.5	3.1	18,856
Others	0.8	2.0	3.4	4.6	5.5	5.5	5.4	3.7	15,661
T o t a l	0.8	1.8	3.2	4.3	5.1	5.0	5.3	3.5	874,907

*) . Mean number of children born alive standardized for age.

necessarily in conflict with that in educational differences. First of all, in the previous subsection, the education variable is not controlled for any other economic variable. Secondly, a professional and technical occupation should bring a better social status and this results in a better income. Therefore, the economic variables are more pronounced in the decision making process, in terms of high level fertility, compared with the education variable. In addition to the assumption stated above, the higher level of average number of children ever born to mothers in the sales group was evident. On the other hand, it is well known in country like Indonesia, that clerical and service jobs are categorized as low income occupation. Mothers who belonged to these two occupations showed a lower level of average number of children ever born.

4.3. Cultural Characteristics Differentials.

In this study the cultural variable is represented by the religion of the mothers. The distribution of mothers in the childbearing period by religion is as follows: Muslims 88 per cent; Christians 6.4 per cent (includes

Catholics, Protestants and Other Christianity); Buddhists 4.3 per cent and Other Religion followers 1.3 per cent.

When we examine the religion differential fertility, a question immediately arises whether the observed differences result mainly from the group's social and economic characteristics (educational attainment, occupational structure, income level etc.), which differ from those of the rest of population, or whether they reflect cultural factors peculiar to the group. It is very difficult to determine the relative weight of these various influences in accounting for intergroup fertility differences.

So far as religion is concerned, the 1971 census data reveal that the standardized (for age) mean number of children ever born to Christian mothers was the lowest (2.9), while that of Muslim mothers was the highest (3.6). The age specific average number of children shows somewhat similar picture for the youngest age group (under 25 years) for all religions. For the 25-39 age group, however, the Muslim mothers are dominant, while for the older age group (40 years and over) the Buddhist mothers dominate the average family size (Table 26).

In notable contrast with this finding, Haryono Suyono (1974:23) observed that in 1968, for the oldest age group (35 years and over) Muslim mothers in Jakarta had the smallest average number of children ever born.

TABLE 26
AVERAGE NUMBER OF CHILDREN BORN ALIVE TO MOTHERS BY AGE
RELIGION, JAKARTA, 1971.

Religion of mothers	Age of mothers							Mean CBA*)	N
	15-19	20-24	25-29	30-34	35-39	40-44	45-49		
Islam	0.8	1.9	3.3	4.5	5.2	5.0	5.1	3.6	769,222
Christianity	0.6	1.4	2.2	3.2	4.5	4.6	4.8	2.9	56,231
Buddhism	0.7	1.5	2.5	3.5	5.0	5.4	5.5	3.2	37,471
Others	0.6	1.5	2.6	3.7	4.6	5.7	5.6	3.2	11,983
T o t a l	0.8	1.8	3.2	4.3	5.1	5.0	5.3	3.5	874,907

*) . Mean number of children born alive standardized for age.

By controlling for education Haryono Suyono concluded that the influence of religion on fertility was proportionate to the per cent distribution of the followers by education, and not directly related to the size of the followers group.

Another interesting picture emerged when Haryono Suyono controlled the religion variable for income. He divided the women by their income into four groups: (1) less than Rp.2,000 monthly; (2) Rp.2,001 - Rp.5,000; (3) Rp.5,001 - Rp.15,000 and (4) more than Rp.15,000 (US\$1. approximately equal to Rp.415). He found that in the third income group Muslim mothers had the smallest average parity, while Confucius mothers showed the smallest average parity in the fourth income group (Haryono Suyono, 1974: Table 12).

Indeed, religion has a strong influence on their followers, but these influences depend, among other things, upon the social as well as economic characteristics of the followers.

Finally, the study to relate fertility patterns with socio-economic status of mothers in Jakarta is very much influenced by a number of variables which directly or indirectly influence fertility. For example, the *generation* variables. A positive relation between fertility and socio-economic status was noticeable in the earlier generation, but shows sign of weakening in the present generation because of the spread of birth control which was first accepted among the richer and educated societies. Also the spread of idea that *small family size is the happiest family* more or less changed the mental attitude of the *homo economicus* (economic man) towards the fertility pattern to day. In society, where the family decision making process is in the hand of husbands, we would accept that variables about husband's background should also be matched with the fertility patterns to get better picture about relationship between fertility and socio-economic status. From the statistical point of view, the isolation of additional statistically independent variables is suggested to improve the explanation of variance in fertility in terms of its social and economic correlates (Massey and Tedrow, 1976).

Comprehensive socio-demographic research is therefore necessary to get better picture about fertility differential in urban area like Jakarta.

CHAPTER 5

FERTILITY CONTROL

Traditionally, Indonesian society has followed the course of a large family as the ideal family and family life with the philosophy of *banyak anak banyak rezeki* (many children much fortune) (Abdoel Djalal, 1977a). It was a big question mark as to whether the majority of the population who had suffered severe poverty could afford such a way of life. The idea of family planning was very remote in Indonesia until 1967 when the President of the Republic of Indonesia signed the World Leader's Declaration on Population.

Alarm at the prospect of a population explosion led Ali Sadikin, the Governor of Jakarta, to form a Family Planning Project for Jakarta, by Governor's Decree No. Ib.3/1/45/67 (BKKBN DKI Jakarta, 1974:1). The appropriate family planning program began after 1972 when the National Family Planning Coordinating Board (NFPCB) was established by a Presidential Decree No. 33/72.

Since 1968, two wide-scale surveys on family planning knowledge, attitude and practice have been conducted in Jakarta; Djakarta KAP Survey 1968 and Survei PSP Jakarta 1975. The results of these surveys indicate, among other things, that there is a gradually changing attitude towards family life. The family planning knowledge, attitude and practice, have been visualized as indices of social change and have drawn the attention of the national leaders.

This study is an attempt to extend the previous investigations and to explore the possibility of increasing baseline data for evaluative purposes.

5.1. Knowledge.

Around three-quarters of the respondents interviewed in the 1968

survey had no knowledge of any of the contraceptive methods, while in the 1975 survey the number decreased to around a quarter. In both surveys male respondents exhibited better knowledge about contraceptive methods than the females. The level of education seems to be a significant variable in relation to knowledge of family planning. The better the educational level the more they knew about family planning methods (see Table 27). The survey did not provide the age distribution of respondents who knew some contraceptive methods. However, it could be predicted that irrespective of the educational level, the younger respondents knew contraceptive methods better than the older respondents.

TABLE 27
EDUCATIONAL LEVEL IN RELATION TO KNOWLEDGE ABOUT FAMILY PLANNING,
JAKARTA, 1968 AND 1975.
(PERCENTAGE)

Respondent's knowledge of family planning method	X S	Educational level of Respondent in number of years								Total percent	
		N o n e		1 - 6		7 - 9		10 or more		1968	1975
		1968	1975*	1968	1975	1968	1975	1968	1975		
Does not know any method	Male	18.0	8.4	41.4	13.0	9.3	1.6	5.3	1.0	74.0	24.0
	Female	43.7	15.4	28.1	10.3	4.4	2.2	1.5	0.8	78.0	78.6
Knows one method	Male	0.8	1.7	3.8	9.9	3.8	1.8	6.5	1.4	15.0	14.8
	Female	1.9	2.7	3.3	3.0	1.4	1.5	1.5	0.8	8.0	8.1
Knows two or more methods	Male	0.2	1.2	1.8	22.3	1.9	15.3	7.2	22.4	11.0	61.2
	Female	1.4	8.4	5.6	27.2	3.2	12.4	4.0	15.3	14.0	63.3
T o t a l percent	Male	19.0	11.3	47.0	45.2	15.0	18.7	19.0	24.8	100.0	100.0
	Female	47.0	26.5	37.0	40.5	9.0	16.1	7.0	16.9	100.0	100.0

Source : NFPII, 1970: Table 4

Widodo Talogo et al, 1977: Table 2.0.A.

Note : * = includes the informal schooling.

Total respondents for 1968, male: N=1102, female: N=1108.

For 1975, male: N=991, female: N=1962.

Further, respondents were also asked to rate the effectiveness of the methods they had heard about. The percentage distribution of respondents who have rated the methods is presented in Appendix C, Table C.1. It is understandable that the ability of respondents to rate the effectiveness of

the contraceptive methods is limited. Their judgements on effectiveness of the methods are mostly based on their own experiences of family planning rather than on the scientific and technical bases. However, such information is needed for the program planners to improve their services. It is interesting to note that 41 per cent of the 468 respondents in 1968 rated the effectiveness of the pill as incorrect, while only 3.2 per cent of 2202 respondents in 1975 had the same idea. In this regard, it should be noted that the pill as a contraceptive had been introduced only since 1967.

Knowledge on contraceptive methods was also associated with the source of information about family planning (see Appendix C, Table C.2). In a society where a greater proportion of the population is less educated, interpersonal communication should be the best source of communication. This is the case with the 1968 and 1975 respondents in Jakarta, who were mostly introduced to the methods by interpersonal sources. Medical personnel seem to be a second best source of communication in family planning. In contrast, mass media still has the lowest role as a source of communication on family planning methods.

The 1975 survey provided information on who introduced the family planning method for the first time and for the present time. About 41 per cent of the first time male users and 57 per cent of female users obtained their information through medical services. They used the modern family planning methods. On the other hand, respondents who claimed mass media as their first source of communication, were practicing traditional methods (see Appendix C, Table C.3). The current user respondents, to some extent, show similar features in general. Most of them were introduced to the current modern method by medical personnel. The conventional method current users were all introduced by mass media. The interpersonal source, on the other hand, introduced 44 per cent of modern method current users, 33 per cent conventional method current users.

5.2. Attitude.

The succes of the family planning program will depend not only on the extent to which people know and are familiar with the contraceptive methods, but also on their attitude toward family planning. This is whether they approve of family planning and are willing to cooperate in the program. Therefore, both KAP surveys asked the respondents whether they approve of family planning or not. The responses are classified into 5 categories: strong disapproval; moderate disapproval; neutral; moderate approval and strong approval.

The recorded responses show that a greater proportion of respondents strongly approve the family planning program and a smaller proportion disapprove. The 1975 responses indicate approval of the program. The sex differential indicates that there are no significant differences in their attitudes. However, the differences in the educational level, show some deviation. As the educational level increases, the approval of family planning increases with more strength being indicated. Basically, the disapproval to family planning comes from respondents who have a lower level of education (see Appendix C, Table C.4).

An attempt was also made to find out the possible reasons for disapproval of family planning. Appendix C, Table C.5 reveals that religion is the most striking factor for disapproval of the family planning program, which most often came from the lower educational group. Other reasons given for disapproval of the program are : (1) respondents desire more children and (2) that birth control is harmful to health. If these two reasons are true, then the family planning is bad propaganda for population control. Fortunately, the number of disapproving respondents is small, approximately 6 per cent of the total sample in both 1968 and 1975 surveys.

When respondents were asked about the ideal age for a girl at first

marriage, around 60 per cent of the respondents tended to cluster around the ages 17-20 years. In general, almost all of those in the group with the lowest educational level stated 20 years or less being the ideal age for a girl's first marriage. On the other hand, about 40 to 44 per cent of respondents, for both 1968 and 1975 surveys, indicate that males should marry at age 24-25 years. These findings confirm the observation made previously in Chapter 2.

Another aspect of attitude which was also asked in the surveys was the number of children desired. From the 1975 survey we can see that more than one-half of the respondents indicated that they desired 4 to 5 children. These respondents more commonly came from higher educated groups. When we control the desired number of children variable for age and sex of the respondents, we can see that the male respondents in the youngest age group (20-24) desired less than 3 children. On the other hand, more than one-half of the female respondents from the same age group desired more than 3 children. In older ages (25 years and over) the male and female respondents more or less exhibited the same trends: more than 60 per cent of them desired more than 3 children (see Appendix C, Table C.6). The 1968 survey depicted a similar picture, where 55 per cent of the respondents (both sexes) desired 4-5 children, 20 per cent desired 1-3 children, 18 per cent 6-7 children and 7 per cent 8 children or more (NFPII, 1970:27).

Desire for more children appears more intense among mothers who have fewer living children. About 36 per cent of female respondents who want more children have 3 living children or less, for both 1968 and 1975 survey data.

It has been observed that substantial proportions of people in the developing world from nearly a half to three-fourth want no more children now (Berelson et al, 1966:659). The results of the 1968 and 1975 KAP surveys, to some extent support this view.

5.3. Practice.

There are two major sources of data which show the use of family planning in Jakarta, i.e. the 1975 KAP survey and the annual report of NFPCB DKI Jakarta. The discussion in this section is limited to only some aspects of the family planning practice.

5.3.1. Estimates of Use of Family Planning Based on the 1975 KAP Survey.

As discussed earlier, the 1968 and 1975 KAP surveys resulted in approximately 24 and 75 per cent of respondents who claimed to have some knowledge of contraceptive methods. Further, about 60 and 78 per cent of respectively 1968 and 1975 respondents approved of family planning programs. However, the observation made on the use of family planning methods reveals that only 30 and 40 per cent of the respondents were using family planning methods. The reasons for not using family planning methods given by the respondents who knew about family planning is presented in Table 28. In both 1968 and 1975 surveys, three main reasons as given by the respondents are: (1) wants (another) child; (2) lacks information on how to use methods and (3) no need to use (being too old; separated; sterilized or as judged by the respondents). It should be noted, however, that in the 1975 survey, religion objection seemingly became less in importance as compared with that in the 1968 survey. On the other hand, spouse objection became more important to be considered in the 1975 survey than in the 1968 survey.

The statistics of current users by age provided by the 1975 survey revealed that nearly 60 per cent of male current users were under 40 years of age whereas 50.3 per cent were aged 30-39. The female current users show a percentage of 62.5 aged under 35 years whereas 34.6 per cent were aged 20-29 (see Appendix C, Table C.7). It is important to note that both male and female current users indicate that around 70 per cent among them

are the program acceptors and the rest are non-program acceptors.

TABLE 28

REASONS FOR NOT USING FAMILY PLANNING METHODS GIVEN BY RESPONDENTS WHO
KNEW ABOUT FAMILY PLANNING, JAKARTA, 1968 AND 1975.

Reasons for not using family planning methods	Males (%)	Females (%)
<u>1968</u>		
Wants (another) child	32.0	24.0
Spouse objects to use	1.0	3.0
Religion objection	13.0	5.0
Hard to obtain methods	3.0	3.0
Lacks information on how to use method	27.0	12.0
Thinks family planning is unsafe to use	2.0	8.0
Cost is too great	3.0	5.0
No need to use	19.0	40.0
T o t a l p e r c e n t	100.0	100.0
<u>1975</u>		
Wants (another) child	27.2	33.7
Spouse objects to use	12.7	19.7
Religion and/or custom objection	3.7	3.5
Bad news about family planning	0.5	6.6
Don't know where to get/how to use method	14.8	12.8
No need to use	20.7	12.3
Don't know the reason	20.4	11.4
T o t a l p e r c e n t	100.0	100.0

Source : NFPII, 1970 : Figure 7

Widodo Talogo et al, 1977: Table 40.1.A

Note : Number of respondents for 1968, male: N=282; female: N=200
For 1975, male: N=569; female: N=1183.

A classification of current users by educational level of the respondents indicated a positive relation between education and practice of family planning. The higher the level of education the higher the proportion of respondents using contraceptives. Appendix C, Table C.8 exhibits the association of educational level and the family planning practice.

In 1975, the use of different types of methods among 345 male respondents indicate that the condom seems to be the first choice (30 per cent) followed by pill (22 per cent) and IUD (19 per cent). On the other hand, 582 female respondents were mostly pill users (33 per cent), IUD came second (20 per cent) and condom came third (12 per cent) (Widodo Talogo et al, 1977: Table 43.15.A). Despite religion objection having declined in importance,

the use of different types of methods was also associated with the religion of acceptors. Widodo Talogo et al (1977: Table 43.21.A) observed that Muslim acceptors had a long range of choices, i.e. from modern method to the folk method. What is more, there were Muslim acceptors who used sterilization and menstrual regulation as a method. Some people believe that menstrual regulation, to some extent, is considered as an *abortivum* (abortifacient), and abortion is prohibited by Islam religion. A greater proportion of Muslim acceptors are concentrated among condom, pill and IUD users. As expected, most of the Catholic acceptors used the rhythm method and condom, while the Buddhist and Protestant acceptors were more flexible.

5.3.2. Estimates of Use of Family Planning Based on Registration Data.

The annual report of NFPCB DKI Jakarta from 1969/70 to 1975/76 reveals that there was fairly good progress in terms of program acceptors in Jakarta. During 1966-76 the new program-acceptors increased nearly seven fold, from 15,848 in 1969/70 to 107,840 in 1975/76, or it implied an increase of 4.5 to 11.8 new program-acceptors per 1000 fertile women (Census and Statistical Office, Jakarta, 1976:98-99). Compared with other provinces in Java this coverage is rather low. Mertens (1976) interpreted this low percentage of acceptors as resulted from (1) program deficiencies; (2) tendency of acceptors to drop out and (3) change to non-program-acceptors. In addition to these three interpretations, we should pay attention to the number of male contraceptive users, which tends to increase with time. Generally speaking, the fourth interpretation should be added, i.e. underestimation of the number of acceptors.

A classification of current users by method shows an interesting picture. When the program started, more than one-half of the acceptors chose IUD as a method of choice, followed by pill, vaginal tablet and condom. However, in 1975/76, pill overtook IUD, followed by condom, but vaginal tablet

users remained a very small portion of the total new acceptors. In addition, the NFPCB estimates of program users have been questioned by Sinquefield and Bambang Sungkono. They evaluate that the NFPCB overestimates IUD users and underestimates pill and other method users as resulted from a poor assumption (Sinquefield and Bambang Sungkono, 1977).

The new acceptors were also associated with the units which served contraceptives. There were four groups of units, i.e. units of the Department of Health; Armed Forces; Other Departments and Private Agencies. The percentage distributions of new acceptors by units from the fiscal year 1969/70 to 1975/76 are presented in Appendix C, Table C.9. It is understandable that the greatest proportion of acceptors were served by the Department of Health's units, but the coverage of around 65 to 70 per cent of acceptors was rather low. It is expected that the units of Department of Health cover more than 70 per cent. However, the number of clinics run by the Department of Health accounted for less than one-half of the existing family planning clinics in Jakarta for the year 1969 to 1975 (Census and Statistical Office, Jakarta, 1976:97). There is one family planning clinic in Jakarta for the year 1975/76 serving approximately 5250 fertile women or 2376 cumulative acceptors yearly, whereas 620 were new acceptors, which seemed rather idle.

The distribution of acceptors by age and education exhibits, more or less, the same as in the 1975 KAP survey - a concentration in the under 35 year age group and an increasing trend of the better educational level groups (BKKBN DKI Jakarta, 1974 : Table 18).

If we crosstabulate the new acceptors with the number of children living, then we see that more than one-half of the acceptors have 2-4 children living (BKKBN DKI Jakarta, 1974:Table 24), which is a good sign for the population policy makers.

5.4. The Impact of the Family Planning on Marital Fertility.

Although there is a sign that marital fertility declined during the early 1970's (see Table 29) it is very difficult, at this stage, to evaluate the impact of the family planning program on the decline of fertility in Jakarta.

The method for estimating births averted in a family planning program introduced by Potter (1969:413-434) as a revision of Lee and Isbister's procedure - specifically estimating births averted per segment of IUD - requires much information which is not covered by this study. The method for estimating annual births saved by the use of various family planning methods as suggested by Agarwala and Venkatacharya (1970:240-261) could not be applied in this study for the same reason as stated above.

What we can do, in this study, is to show whether or not changes in marital fertility were related to changes in the index of fertility control, m , as developed by Coale (1971).

TABLE 29
ESTIMATES ASMFR FOR JAKARTA BASED ON 1971 CENSUS AND 1976 JBF SURVEY.

Source and year	Age Specific Marital Fertility Rate					
	15-19	20-24	25-29	30-34	35-39	40-44
1971 Census ¹⁾						
1967-70	498	399	322	232	132	56
1976 JBF Survey ²⁾						
1967-71	406	387	309	300	185	138
1972-73	443	399	329	207	185	88
1976	473	403	263	235	75	58

1). 1967-70 estimates obtained by dividing 1967-70 ASFR by proportion of women currently married by age, from the 1971 census.

2). See Sinquefield and Bambang Sungkono, 1977: Table 3.

The concept of natural fertility, which was introduced by Louis Henry, applies to marital fertility, i.e. fertility of couples living in long-term sexual unions, whether or not legally married. Louis Henry observed that there is a characteristics pattern of marital fertility in population in which there is little or no voluntary control of births. He defined voluntar control as behaviour affecting fertility which is modified as the number of children born to a couple increases, and the absence of the deliberate birth control - natural fertility - as behaviour (Henry, 1961).

In a population in which fertility is voluntarily controlled, the ratio of marital fertility at each age, $r(a)$, to a schedule of natural fertility, $n(a)$, is formulated by Coale and Trussel (1974) as follows :

$$r(a)/n(a) = M.e^{m.v(a)}$$

or

$$m = \frac{\ln r(a)/M.n(a)}{v(a)}$$

where m : index of fertility control,

M : scale factor expressing the ratio $r(a)/n(a)$
at some arbitrarily chosen age,

$v(a)$: express the tendency for older women in a population practicing contraception or abortion to effect particularly large reductions of fertility below the natural level.

The value of m ranges from zero to 3.9. It is constructed so that for the natural fertility schedule equal to zero, and a value of $m = 1.0$ indicates the average value of 43 schedules, representing a range of differences in the extent of fertility control (Coale and Trussel, 1974). If m is negative, this indicates that fertility declines even more slowly with the age than in the standard schedule.

The values of $n(a)$ were derived from Henry's calculation, and the values of $v(a)$ were obtained from the corrected values published in a subsequent erratum notice in Population Index Vol.41 (1975, vol.41, No.3:572).

The values of $n(a)$ and $v(a)$ are as follows:

	20-24	25-29	30-34	35-39	40-44	45-49
$n(a)$	0.460	0.431	0.395	0.322	0.167	0.024
$v(a)$	0.000	-2.279	-0.677	-1.042	-1.414	-1.671

Jakarta's values of the index of fertility control (m) calculated for the year 1967-71, 1972-73 and 1976, by using the formula of Coale and Trussel, show an increasing trend (see Table 30), which suggested that the fertility decline in Jakarta, could be attributed partly to fertility control (family

planning program). When we compare the average m values of Jakarta with those of province in Java and Bali, we can see that for the early 1970's period, Jakarta exhibited the second highest value after East Java province (see Table 30). This means that the recent fertility control in Jakarta has been better than other provinces in Java and Bali, except East Java.

TABLE 30
INDEX OF FERTILITY CONTROL FOR VARIOUS PROVINCES IN JAVA - BALI
IN VARIOUS PERIOD.

Province and period	Values of m for age intervals				Average
	25-29	30-34	35-39	40-44	
Jakarta					
1967-71	0.070	0.152	0.365	0.013	0.150
1972-73	0.056	0.745	0.394	0.352	0.387
1976	0.159	0.572	1.271 ^r	0.655	0.664
West Java					
1967-71	-0.012	0.149	0.164	-0.197	0.026
1972-73	-0.004	0.371	0.125	0.215	0.177
1976	0.053	0.988	0.704	0.504	0.562
Central Java					
1967-71	0.012	0.134	0.309	0.231	0.172
1972-73	0.047	0.315	0.457	0.418	0.309
1976	0.072	0.390	0.526	0.772	0.440
D.I.Yogyakarta					
1967-71	0.408	0.180	0.114	0.070	0.193
1972-72	-0.102	-0.026	0.394	0.175	0.110
1976	0.219	0.780	0.815	0.636	0.613
East Java					
1967-71	0.051	0.504	0.385	0.148	0.272
1972-73	0.101	0.552	0.593	0.569	0.454
1976	0.199	1.151	1.398	0.682	0.858
B a l i					
1967-71	0.024	0.341	0.293	0.032	0.173
1972-73	-0.022	0.409	0.684	0.092	0.291
1976	0.004	1.157	0.994	0.442	0.649

CHAPTER 6

POPULATION PROJECTION

This chapter is concerned with the determination of the projections of demographic parameters into the future in an attempt to provide some guidelines for development planners and policy makers and also to establish a firmer foundation for further research. However, it must be stressed that population projections are not forecasts yielding completely realistic pictures of the future development of a population, rather, they are a purely formal calculation, showing the implications of assumed assumptions concerning the future course of fertility, mortality and migration.

Obtaining precision in population projections of subnational areas is much more difficult than the national population projections. In preparing projections for a province or city, like Jakarta, the component of migration becomes highly important and often outweighs fertility in importance.

In this study, two attempts are made to project the population of Jakarta. One is the projection of the population of Jakarta as a proxy, and the second is the projection of the population of Jabotabek, an area of a future Jakarta resettlement (see Chapter 1).

6.1. Estimation of Base Population by Sex and Age.

The base population by sex and age has been taken from the 1971 population census. As in the case of other developing countries, however, these data suffer from errors. Therefore, before we use them for the projections, we have to adjust them for the inaccuracies. The adjustment has been done in three stages. The first is the adjustment of population

aged 0-4 and 5-9 years by estimating the births which occurred during the ten years preceding the 1971 census using the reverse survival method. Secondly, the adjustment of population 10-69 years of age is made. This adjustment has been done by using the 5-term moving average of the single year age data, thereafter regrouping them into 5 years age group: 3-7, 8-12etc. By using the Sprague multipliers we split them into single ages. Finally, the adjustment is made for population aged 70 years and over using the quasi-stable population model. The adjustment yielded a smoothed population for Jakarta and Jabotabek (see Table 31). It should be noted that there is no single year age data available for Jabotabek's population. Therefore, the adjustment of Jabotabek's population has been done by using the 5 year age group data only and resulting a different adjusted figures than that of Jakarta's population. The population of Jabotabek in this study consists of the whole population of Jakarta plus population of 16 subdistricts of Bogor, nine subdistricts of Tangerang and 7 subdistricts of Bekasi (see Appendix D, Table D.1).

TABLE 31

PERCENTAGE DISTRIBUTION OF UNADJUSTED AND ADJUSTED POPULATION BY SEX AND AGE FOR JAKARTA AND JABOTABEK, 1971.

Age group	J a k a r t a				J a b o t a b e k			
	M a l e s		F e m a l e s		M a l e s		F e m a l e s	
	Un- adjust- ed	Adjust- ed	Un- adjust- ed	Adjust- ed	Un- adjust- ed	Adjust- ed	Un- adjust- ed	Adjust- ed
0-4	17.0	18.0	17.0	18.0	17.0	16.9	17.0	16.9
5-9	14.5	13.6	14.2	13.6	14.5	14.4	14.2	14.2
10-14	11.8	11.6	11.9	12.0	11.8	12.2	11.9	12.3
15-19	10.6	10.7	11.8	11.5	10.6	10.3	11.8	11.5
20-24	9.4	9.7	10.1	10.4	9.4	9.5	10.1	10.3
25-29	9.0	8.8	9.0	8.8	9.0	8.8	9.0	9.7
30-34	7.5	7.7	7.3	7.3	7.5	7.6	7.3	7.3
35-39	6.4	6.2	6.0	5.7	6.4	6.2	6.0	5.9
40-44	5.0	4.8	4.2	4.2	5.0	5.0	4.2	4.1
45-49	3.2	3.3	2.7	2.8	3.2	3.4	2.7	2.9
50-54	2.3	2.2	2.1	1.9	2.3	2.2	2.1	2.0
55-59	1.3	1.4	1.1	1.3	1.3	1.5	1.1	1.3
60-64	0.9	0.9	1.1	1.0	0.9	0.8	1.1	1.0
65-69	0.5	0.5	0.6	0.6	0.5	0.6	0.6	0.7
70-74	0.4	0.6*	0.5	0.8*	0.4	0.6*	0.5	0.9*
75+	0.3	-	0.4	-	0.3	-	0.4	-
Total								
%	100.1	100.0	100.0	100.0	100.1	100.0	100.0	100.0
Number	2,297,194		2,249,298		3,517,381		3,440,986	

Note : * = 70 years and over.

6.2. Assumptions and Method Adopted.

6.2.1. Assumptions.

A number of assumptions or sets of assumptions for the future course of fertility, mortality and migration are feasible. Therefore, the assumptions are a matter of choice. Three alternative assumptions regarding the future course of fertility and net migration gains and one set of mortality assumption are made starting with the current levels of fertility, mortality and migration gains. These sets of assumptions are as follows :

(1). Fertility Assumptions.

Available data indicate that fertility has been declining from the late 1960's to 1976 in Jakarta. The TFR had declined from 5.1 to approximately 4.5, while the CBR had declined from 43 to 39 per 1000 persons. Use of family planning had increased rapidly from 1971 to 1976. The number of acceptors increased from 25,646 in 1970/71 to 107,840 in 1975/76. The target of the Family Planning Program is to reduce the fertility rate by 50 per cent by the year 2001. As a result, three sets of fertility assumptions have been made based on knowledge of the present situation. These assumptions provide for fertility decline in the future. The T.F.R. estimate for Jakarta and Jabotabek in 1971 was 5.1 and 5.7 respectively. The T.F.R. values used in the projections are presented in Table 32.

Fertility Assumption I: The T.F.R. would decline linearly by 30 per cent by the year 2001.

Fertility Assumption II: The T.F.R. would rapidly decline linearly by 50 per cent by the year 2001.

Fertility Assumption III: The T.F.R. would more rapidly decline linearly by 60 per cent by the year 2001.

TABLE 32
TOTAL FERTILITY RATE VALUES USED IN PROJECTIONS FOR JAKARTA
AND JABOTABEK, 1971 - 2001.

	Assumption I		Assumption II		Assumption III	
	Jakarta	Jabotabek	Jakarta	Jabotabek	Jakarta	Jabotabek
1971 - 76	5.10	5.70	5.10	5.70	5.10	5.70
1976 - 81	4.79	5.36	4.59	5.13	4.49	5.01
1981 - 86	4.49	5.01	4.08	4.56	3.88	4.33
1986 - 91	4.18	4.67	3.57	3.99	3.26	3.65
1991 - 96	3.88	4.33	3.06	3.42	2.65	2.96
1996 - 2001	3.57	3.99	2.55	2.85	2.04	2.28

(2). Mortality Assumption.

Mortality has also been declining in Jakarta, but at a slower pace than fertility from the late 1960's to early 1970's (see Chapter 3). However, it appears that mortality decline would accelerate further in the coming years. The United Nations suggested that countries which had an expectation of life at birth of less than 55 years might expect a quinquennial gain of 2.5 years in the expectancy of life (U.N.1956:28). On the other hand, a recent review of the decline in the ECAFE region indicated that the actual rate of gain was considerable higher (U.N.1969:48). In this study, therefore, a mortality assumption has been made of a 3 year quinquennial gain in the expectancy of life at birth for the period 1971 to 1986 and 2.5 years gain per 5 years thereafter up to 2001. The life expectancy at birth for Jakarta is estimated at 53.88 years for females and 48.75 years for males for the period of 1971 (see Chapter 3), while for Jabotabek it is estimated as 52.55 years for females and 48.19 years for males (Cho et al,1976:63). The values of life expectancy at birth used in the projection are presented in Table 33.

(3). Migration Assumption.

Migration has been the most important component of population growth in Jakarta, but because of the multiplicity of factors, both demographic and non-demographic, that govern the magnitude and pattern of migration,

TABLE 33
LIFE EXPECTANCY AT BIRTH VALUES USED IN PROJECTIONS FOR JAKARTA
AND JABOTABEK, 1971 - 2001.

Period	Jakarta		Jabotabek	
	Male	Female	Male	Female
1971 - 76	48.75	53.88	48.19	52.55
1976 - 81	51.75	56.88	51.19	55.55
1981 - 86	54.75	59.88	54.19	58.55
1986 - 91	57.75	62.88	57.19	61.55
1991 - 96	60.25	65.38	59.69	64.05
1996 - 2001	62.75	67.88	62.19	66.55

it is very difficult to estimate it. However, Jakarta experienced a net migration of around 100,000 persons annually in the 1950's (Heeren,1955;713), and an average of around 110,000 persons annually during 1966-71 (B.P.S., 1974, Series E, No.09: Table 24) consisting of 51 per cent male and 49 female migrants. The net migration to Jabotabek is assumed to be the same as that to Jakarta. Three sets of assumptions are made as follows (see Table 34):

Assumption I : The net migration will remain constant throughout the projection years, i.e. at 110,000 persons annually.

Assumption II : The net migration will increase linearly from 110,000 persons in 1971 to 160,000 persons annually in 2001.

Assumption III: The net migration will decrease linearly from 110,000 persons in 1971 to 60,000 persons annually in 2001.

In addition to these three assumptions, the age and sex distributions of net migrants are assumed identical to those of recent net migrants obtained from the 1971 census data.

6.2.2. Method of Projection.

In this study projections are made by the "component method" in which future numbers of males and females in each age group are estimated separately and the total population is obtained by summing up the results (U.N., 1956:2-3).

TABLE 34
ANNUAL NET-MIGRANTS VALUES USED IN PROJECTIONS FOR JAKARTA
AND JABOTABEK, 1971 - 2001 (IN THOUSAND).

Period	Assumption I		Assumption II		Assumption III	
	Male	Female	Male	Female	Male	Female
1971 - 76	56.1	53.9	56.1	53.9	56.1	53.9
1976 - 81	56.1	53.9	61.2	58.8	51.0	49.0
1981 - 86	56.1	53.9	66.3	63.7	45.9	44.1
1986 - 91	56.1	53.9	71.4	68.6	40.8	39.2
1991 - 96	56.1	53.9	76.5	73.5	35.7	34.3
1996 - 2001	56.1	53.9	81.6	78.4	30.6	29.4

The projection is preceded by taking the adjusted 1971 census population as the base population. We have postulated that the population enumerated in 1971 was complete for both males and females. The base population is shifted, then, to mid-year population by interpolation. The calculations are made for quinquennial age groups. The number of persons in each age-sex group who will survive to the next age group, 5 years later, is calculated on the basis of the survival ratios applicable to that age as indicated by the life table for Jakarta 1971. For later period, the survival ratio were selected from the West Family of Model Life Table suitable for the assumed expectancy of life. Migration makes additions to cohort size during the period. The proportion of migrants who survive to the end of the period counting from the time of their migration depends upon the length of time they are exposed to the risk of death after migration. For further calculation we assume that all members of a five-year cohort have the same risks of dying per unit of time irrespective of age differences within the five-year age range of the cohort. We also assume that migrants are distributed equally over the five-year period. The following expression, therefore, can be used to make the five-year population projection, considering migration:

$$C_{s.c}^5 = C_{s.c}^0 \cdot S_{s.c} + Mig_{s.c} \left(\frac{1 + S_{s.c}}{2} \right)$$

where C = population quantity of the cohort c ,

s = sex,

S = survival ratio

Mig = net migration quantity of cohort c ,

c = cohort 0-4; 5-9;75+

Finally, a further calculation is necessary to estimate the number of births in the future and the proportion of these children who will survive to each age. The basic population data, the mortality, fertility and migration assumptions were fed into a computer "Fivfiv" program (Shorter and Pasta, 1975), and nine sets of projected populations classified by sex and age were obtained.

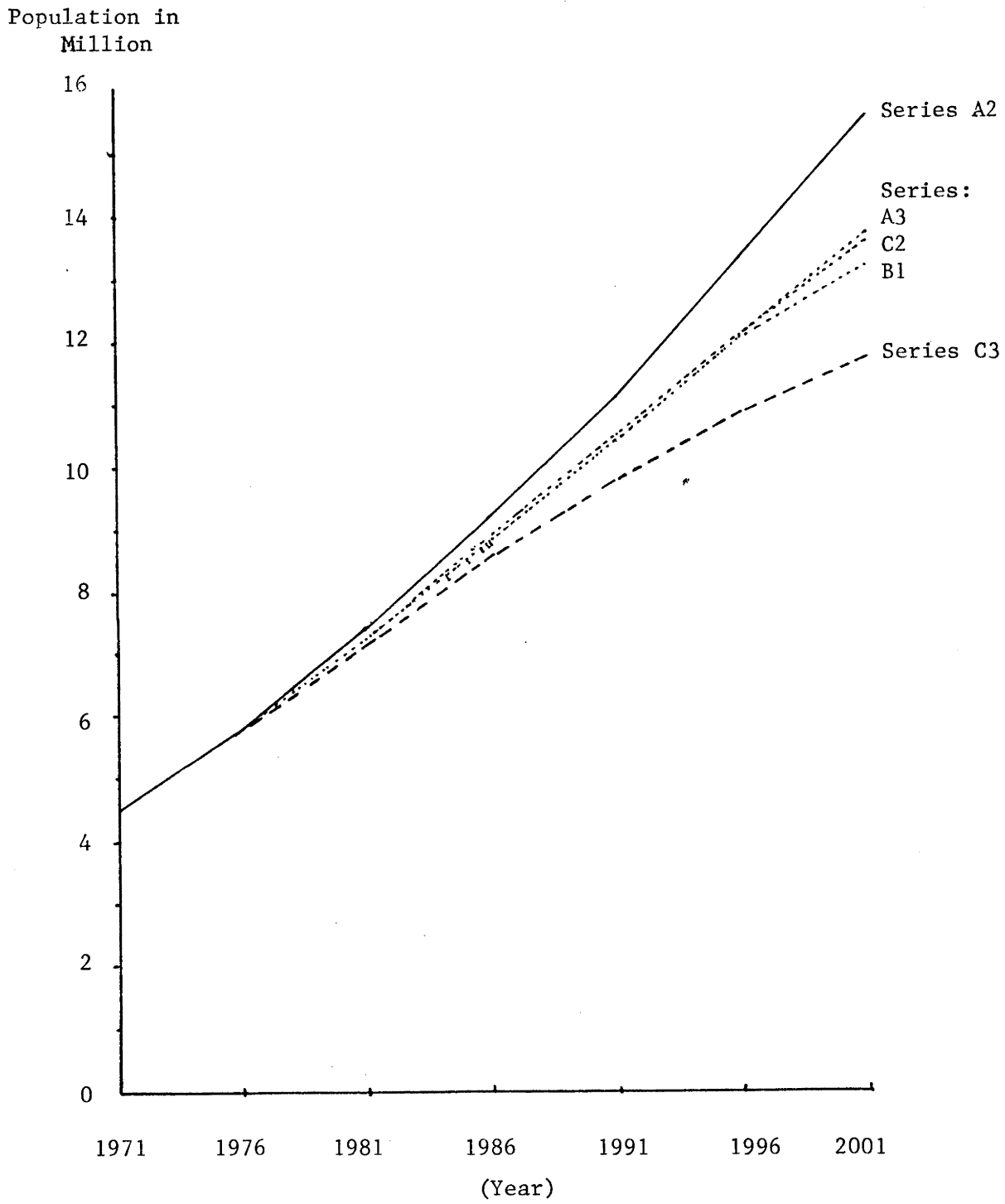
In order to simplify the presentation of the summary results of the projections, the discussion, which follows, will refer to the series A2, A3, B1, C2 and C3. Series A2 assumes a linear decline in TFR by 30 per cent at the end of projection period (2001) accompanied by a linear increase in net migration by 160,000 yearly at the same period. Series A3 assumes the same fertility level as above accompanied by a linear decline in net migration by 60,000 persons yearly at the end of the projection period. Series B1 assumes a linear decline in TFR by 50 per cent accompanied by a constant net migration of 110,000 persons yearly. Series C2 and C3 assume a linear decline in TFR by 60 per cent either accompanied by a linear increase in net migration by 160,000 persons and a linear decrease in net migration by 60,000 persons yearly at 2001. Series A2 is considered the high projection, series C3 the low projection, while series A3, B1 and C2 represent the medium projections. The projected populations of Jakarta are presented in Appendix D, Table D.2 - D.10.

6.3. The Projected Population of Jakarta For 1971 - 2001.

6.3.1. Total Population (Mid-year Population).

The projected sizes of total population in Jakarta up to 2001 are presented in Table 35 and Figure 7. Four of five series of projections show

FIGURE 7
PROJECTED MID-YEAR TOTAL POPULATION OF JAKARTA, 1971 - 2001.



that the population of Jakarta would pass the mark of 10 million by 1991. Under series A2, the population would double by 1986, while under the other four series the population would double by 1991, a period of less than 25 years. If the target of the Family Planning Program was reached by 2001 (i.e. the fertility is reduced by 50 per cent), and the yearly net migration remains constant, we would have around 13 million people in 2001, or nearly three times the 1971 population. On the other hand, if the Family Planning Program just reaches 60 per cent of its target (or the fertility declines by 30 per cent), the total population is expected to be: 14.6 million if the yearly net migration remains constant up to 2001 (Appendix D, Table D.2) and 11.6 million if the yearly net migration remains constant during 1971 - 76 and no migration thereafter (Appendix D, Table D.11).

TABLE 35

PROJECTED MID-YEAR TOTAL POPULATION, JAKARTA, 1971 - 2001 (IN THOUSAND).

Assumption	1971	1976	1981	1986	1991	1996	2001
Series A2	4493.3	5836.3	7401.8	9164.5	11121.1	13273.0	15616.8
Series A3	4493.3	5836.3	7290.9	8811.3	10381.1	11995.5	13647.5
Series B1	4493.3	5836.3	7297.0	8817.0	10364.4	11897.1	13362.2
Series C2	4493.3	5836.3	7327.3	8905.9	10525.6	12126.7	13627.6
Series C3	4493.3	5836.3	7217.3	8560.2	9815.5	10931.1	11839.7

1. The same mortality assumption is applied for all the series, i.e. $e^0 = 53.88$ years for females and 48.75 years for males in 1971, 3-year quinquennial gain for the period of 1971-86 and 2.5 years gain thereafter up to 2001.
2. Series A2: The TFR decline linearly by 30 per cent and the net migration increase linearly to 160,000 persons yearly in 2001.
3. Series A3: The TFR decline linearly by 30 per cent and the net migration decrease linearly to 60,000 persons yearly in 2001.
4. Series B1: The TFR decline linearly by 50 per cent and the net migration remains constant at 110,000 persons yearly in 2001.
5. Series C2: The TFR decline linearly by 60 per cent and the net migration increase linearly to 160,000 persons yearly in 2001.
6. Series C3: The TFR decline linearly by 60 per cent and the net migration decrease linearly to 60,000 persons yearly in 2001.

Considering the various sets of assumptions, attention should be drawn to the fact that migration factors seem to play a more important role in the growth of Jakarta's population in the future than the fertility factor. For example, under series A3 where the fertility would decline by 30 per cent

and the migration would decline by 60,000 persons yearly by 2001 the expected total population of Jakarta would be 13.6 million. Under series C2, on the other hand, although the fertility would rapidly decline by 60 per cent and the migration which is assumed to increase by 160,000 persons yearly by 2001, would result in a total population of 13.6 million too.

Finally, it is interesting to note that the sex ratios of the total population under all series of assumptions show declining trends. Under the high projection the sex ratio will range from 102 in 1971 to 100 in 2001, while under the low projection the sex ratio will decline to 99 in 2001.

6.3.2. Population Growth.

The estimated rate of population growth of 4.76 per cent per year during 1961-71 would rise to 5.25 per cent in 1971-76 and decline thereafter to between 3.26 and 1.60 per cent during 1976-2001. The decrease is attributed to decline in the rates of natural increase and net migration as well (see Table 36). The rate of natural increase shows striking differences which reflects the different fertility assumptions under which the population was projected. Under the high projection (series A2) the rate of growth would decline from 5.25 per cent in 1971-76 to 3.26 per cent in 1996-2001, a reduction of 36.5 per cent. On the other hand, in the medium projections (series A3, B1 and C3) the rate of growth would decline to around 2.4 per cent. This implies a decline of 54.3 per cent. Finally, under the low projection (series C3) the rate of growth would decline by 1.6 per cent in 1996-2001, a decline of about 70 per cent.

The projections also imply that the vital rates would also be affected by changes in fertility, mortality and migration. The high and the low projections would provide a decline in birth rates by about 35 and 60 per cent respectively in 2001. The death rate, on the other hand, would decline by about 4.7 per cent in 2001, either for the high or the low projection.

TABLE 36

PROJECTED YEARLY RATES PER THOUSAND POPULATION, JAKARTA, 1971 - 2001.

Series and rates	1971-76	1976-81	1981-86	1986-91	1991-96	1996-2001
<u>High projection</u>						
<u>Series A2</u>						
Birth rate	44.1	40.9	37.0	33.6	30.9	28.5
Death rate	13.1	11.5	10.0	8.7	7.8	7.0
Natural increase	31.0	29.4	27.1	24.9	23.1	21.5
Net migration rate	21.5	18.3	15.8	13.9	12.3	11.1
Population increase	52.5	47.7	42.8	38.8	35.4	32.6
G.F.R.	184.7	170.8	156.7	143.5	132.9	123.3
G.R.R.*	2.5	2.3	2.2	2.0	1.9	1.7
N.R.R.*	1.9	1.9	1.8	1.8	1.7	1.6
<u>Medium Projection</u>						
<u>Series A3</u>						
Birth rate	44.1	40.8	36.7	33.1	30.4	28.2
Death rate	13.1	11.5	9.9	8.6	7.7	7.0
Natural increase	31.0	29.3	26.7	24.5	22.7	21.2
Net migration rate	21.5	15.3	11.2	8.4	6.3	4.7
Population increase	52.5	44.6	38.0	32.9	28.9	25.8
G.F.R.	184.7	170.8	156.5	143.3	133.0	123.9
G.R.R.*	2.5	2.3	2.2	2.0	1.9	1.7
N.R.R.*	1.9	1.9	1.8	1.8	1.7	1.6
<u>Series B1</u>						
Birth rate	44.1	39.3	33.9	29.3	25.3	21.5
Death rate	13.1	11.3	9.7	8.4	7.6	6.9
Natural increase	31.0	28.0	24.2	20.9	17.7	14.5
Net migration rate	21.5	16.8	13.7	11.5	9.9	8.7
Population increase	52.5	44.8	37.9	32.4	27.6	23.3
G.F.R.	184.7	163.7	142.3	122.5	104.9	88.3
G.R.R.*	2.5	2.2	2.0	1.7	1.5	1.2
N.R.R.*	1.9	1.8	1.7	1.5	1.3	1.1
<u>Series C2</u>						
Birth rate	44.1	38.5	32.6	27.3	22.6	17.8
Death rate	13.1	11.2	9.6	8.3	7.5	6.9
Natural increase	31.0	27.3	23.0	19.0	15.1	10.9
Net migration rate	21.5	18.3	16.1	14.5	13.3	12.4
Population increase	52.5	45.6	39.1	33.5	28.4	23.4
G.F.R.	184.7	160.1	135.4	111.9	90.9	70.5
G.R.R.*	2.5	2.2	1.9	1.6	1.3	1.0
N.R.R.*	1.9	1.8	1.6	1.4	1.2	0.9
<u>Low Projection</u>						
<u>Series C3</u>						
Birth rate	44.1	38.4	32.3	26.9	22.3	17.6
Death rate	13.1	11.2	9.6	8.2	7.5	6.9
Natural increase	31.0	27.2	22.7	18.7	14.8	10.7
Net migration rate	21.5	15.4	11.4	8.7	6.8	5.3
Population increase	52.5	42.6	34.2	27.4	21.5	16.0
G.F.R.	184.7	160.1	135.2	111.7	90.9	70.9
G.R.R.*	2.5	2.2	1.9	1.6	1.3	1.0
N.R.R.*	1.9	1.8	1.6	1.4	1.2	0.9

Note : * G.R.R. and N.R.R. = per women
 G.F.R. = birth per 1000 female 15-44 years of age.

The fertility indices, i.e. the GRR, NRR and GFR would continuously decline during the period of the projection. Under series A2 and A3 the GRR and the NRR would decline similarly during the period of the projections. Only the GFR would show very little difference in series A2 and A3 during the same period. Under series A2, the GRR, NRR and GFR would decline at the slower pace (by 28, 16 and 33 per cent) as compared with that under series C3 (by 60, 53 and 65 per cent) in 2001. The infant mortality rate for females would decline by 59 per cent in 2001 for all series of projections, while the rate for males would decline by 53 per cent.

6.3.3. Population Composition.

Apart from the size of the population, a knowledge of the shape of age structure is essential for an understanding of future trends in demographic parameters. The age distribution of a population itself, however, at a specific point in time is the product of the past trends in the components of growth. Therefore, population composition, especially the age structure, is important for planning, policy making and research.

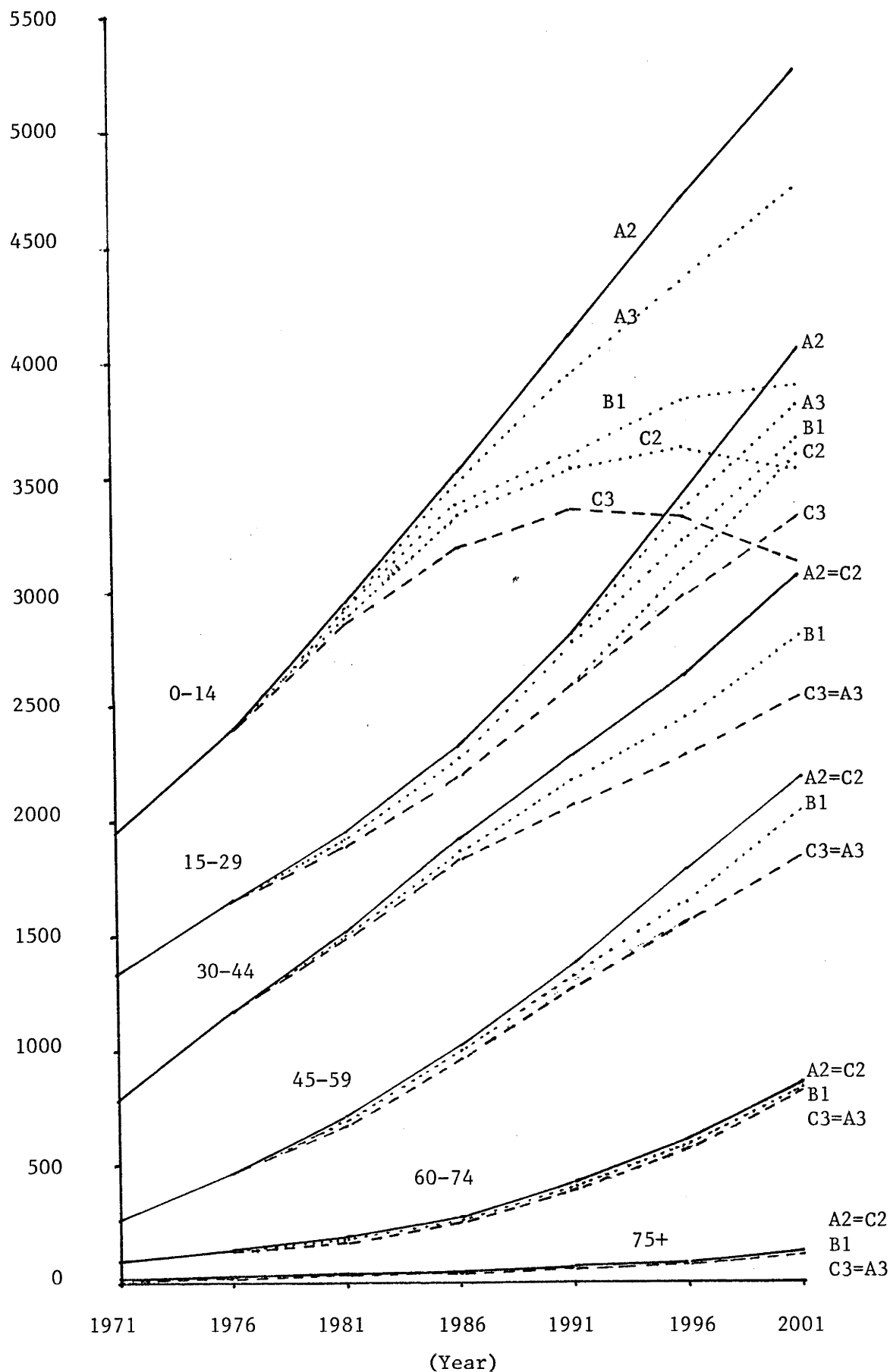
Figure 8 shows the growth of the different fifteen-year age groups of population. Under series A2 and A3 the 0-14 year age group would increase rapidly between 1971 and 2001 as a result of the large cohorts born during the sixties and the period of the projection. Under series B1 between 1971 and 1981 the 0-14 year age group increases rapidly, thereafter the rate of increase continuously declines between 1981 and 2001. Under series C2 and C3, on the other hand, this age group starts with the same pattern as others up to 1981, thereafter the rate of increase declines until reaching the top (1991 under series C3 and 1996 under series C2) and then under both series the 0-14 year age group population declines.

The 15-29 year age group shows a continuous rise during the period of the projections. The series A2 and A3 show the same pattern between

FIGURE 8

PROJECTED POPULATION BY BROAD AGE GROUP OF JAKARTA, 1971 - 2001

Population (000)



1971 and 1991, thereafter under series A3 the rate of growth declines slightly compared with that under series A2. Under series C2 and C3, up to 1991, the 15-29 year age group indicates the same pattern of growth, thereafter under series C3 the 15-29 year age group continues the growth with a slightly lower growth rate than that under series C2.

The 30-44 and 45-59 year age groups more or less increase in parallel with the two previous age groups. In the 30-44 and 45-59 year age groups, however, the growth of each age group under series A2 shows the same pattern as the growth under series C2 and conversely, the growth under series C3 shows the same pattern as under series A3.

Finally, the 60-74 and 75 years and over age groups increase slightly from 1971 to 2001. The rapid increase in the 60-74 year age group appears from 1986 onward.

However, when we study the age composition in the form of per cent distribution, it shows an interesting picture. The shifts in the age structure as indicated by the projections under varying fertility assumptions exhibit the effect of changes in fertility on the age distribution of the population. Table 37 presents the percentage sex and age distribution (broad age groups) for the five series of projections. It can be seen that the estimated percentage of the population 0-14 and 15-29 year age groups decreases during the period of the projections. On the other hand, the percentage of population 30 years and over increases in this period for all five series of projections.

Under series A2 the projected proportion of the population in the 0-14 year age group decreases from 43.3 per cent for males and 43.6 per cent for females in 1971 to 34.2 and 33.4 per cent respectively at the end of this century. The corresponding proportions of the latter figures under series A3, B1, C2 and C3 indicate the extent to which this segment of the age structure is affected by the differential changes in fertility and migration.

TABLE 37
PERCENTAGE DISTRIBUTION OF THE PROJECTED MID-YEAR POPULATION BY SEX AND AGE,
JAKARTA, 1971 - 2001.

Series and age group	1971		1976		1981		1986		1991		1996		2001	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Series A2														
0 - 14	43.3	43.6	41.2	41.1	40.2	40.0	38.8	38.5	37.4	36.8	35.7	35.1	34.2	33.4
15 - 29	29.3	30.8	27.6	29.3	25.8	27.1	25.0	25.9	25.1	25.6	25.6	26.0	25.7	26.1
30 - 44	18.6	17.1	20.4	19.4	21.1	20.8	21.1	21.4	20.6	21.1	20.0	20.3	19.9	20.0
45 - 59	6.9	6.0	8.6	7.5	10.2	9.1	11.6	10.7	12.8	12.0	13.5	13.2	14.0	14.0
60 - 74	1.7	1.9	2.0	2.2	2.5	2.6	3.1	3.1	3.8	3.8	4.7	4.7	5.5	5.6
75+	0.3	0.5	0.3	0.4	0.3	0.5	0.4	0.6	0.4	0.6	0.6	0.8	0.7	0.9
Series A3														
0 - 14	43.3	43.6	41.2	41.1	40.5	40.3	39.4	39.1	38.1	37.5	36.5	35.8	35.1	34.1
15 - 29	29.3	30.8	27.6	29.3	25.7	27.0	24.9	25.6	25.2	25.6	26.1	26.3	26.5	26.5
30 - 44	18.6	30.8	20.4	19.4	20.9	20.6	20.6	21.0	19.7	20.4	18.8	19.4	18.5	18.8
45 - 59	6.9	6.0	8.6	7.5	10.2	9.1	11.6	10.7	12.6	12.0	13.3	13.3	13.5	13.8
60 - 74	1.7	1.9	2.0	2.2	2.5	2.6	3.1	3.1	3.9	3.8	4.8	4.8	5.7	5.8
75+	0.3	0.5	0.3	0.4	0.3	0.5	0.4	0.5	0.4	0.6	0.6	0.8	0.8	1.0
Series B1														
0 - 14	43.3	43.6	41.2	41.1	39.9	39.7	37.9	37.6	35.4	34.9	32.5	31.8	29.5	28.8
15 - 29	29.3	30.8	27.6	29.3	25.9	27.2	25.5	26.2	26.1	26.5	27.0	27.4	27.4	27.5
30 - 44	18.6	17.1	20.4	19.4	21.1	20.8	21.3	21.6	20.9	21.5	20.6	21.1	21.1	21.3
45 - 59	6.9	6.0	8.6	7.5	10.3	9.2	11.8	10.9	13.2	12.5	14.3	14.0	15.1	15.2
60 - 74	1.7	1.9	2.0	2.2	2.5	2.6	3.1	3.1	4.0	3.9	5.0	5.0	6.1	6.2
75+	0.3	0.5	0.3	0.4	0.3	0.5	0.4	0.6	0.5	0.7	0.6	0.8	0.8	1.0
Series C2														
0 - 14	43.3	43.6	41.2	41.4	39.6	39.4	37.0	36.7	33.8	33.3	30.2	29.6	26.3	25.6
15 - 29	29.3	30.8	27.6	29.3	26.0	27.4	25.8	26.6	26.5	27.1	27.4	27.9	27.7	28.0
30 - 44	18.6	17.1	20.4	19.4	21.3	21.0	21.7	22.0	21.8	22.3	21.9	22.2	22.8	22.9
45 - 59	6.9	6.0	8.6	7.5	10.3	9.2	12.0	11.0	13.5	12.7	14.8	14.4	16.1	16.0
60 - 74	1.7	1.9	2.0	2.2	2.5	2.6	3.2	3.2	4.0	4.0	5.1	5.1	6.3	6.4
75+	0.3	0.5	0.3	0.4	0.3	0.5	0.4	0.6	0.5	0.7	0.6	0.8	0.8	1.1
Series C3														
0 - 14	43.3	43.6	41.2	41.4	39.9	39.7	37.7	37.3	34.5	34.0	30.9	30.2	27.1	26.3
15 - 29	29.3	30.8	27.6	29.3	25.9	27.2	25.7	26.4	26.7	27.0	28.0	28.1	28.6	28.5
30 - 44	18.6	17.1	20.4	19.4	21.1	20.8	21.2	20.7	20.9	21.6	20.7	21.2	21.4	21.6
45 - 59	6.9	6.0	8.6	7.5	10.3	9.2	11.9	11.0	13.4	12.7	14.6	14.4	15.6	15.9
60 - 74	1.7	1.9	2.0	2.2	2.5	2.6	3.2	3.2	4.1	4.0	5.2	5.2	6.5	6.7
75+	0.3	0.5	0.3	0.4	0.3	0.5	0.4	0.6	0.5	0.7	0.6	0.8	0.9	1.1

The 15-29 year age group declines from 29.3 per cent for males and 30.8 per cent for females in 1971 to 25.7 and 26.1; 26.5 and 26.5; 27.4 and 27.5; 27.7 and 28.0 and 28.6 and 28.5 per cent respectively for males and females under series A2, A3, B1, C2 and C3.

The proportion of the male population aged 30-44 years declines slightly only under series A3. Under series A2, B1, C2 and C3 the proportion of this sex-age group increases in 2001. The increment ranges between 1.3 and 4.8 per cent. The female population of the same age group increases from 17.7 per cent in 1971 to 20.0; 18.8; 21.3; 22.9 and 21.6 per cent under series A2, A3, B1, C2 and C3.

The proportion of the older age segment continues to increase rapidly during the projection periods as a result of a decline in mortality due to better health conditions and better standards of living.

Those expected trends suggest that the age structure of the Jakarta population would undergo a substantive and consistent transformation in the next thirty years.

6.4. The Implications of the Population Projection.

This section will highlight some of the socio-economic implications of possible trends in population growth as indicated by the population projections. Three subjects will be discussed in this section, i.e. school age population, working age population and the dependency ratio.

6.4.1. The School Age Population.

As mentioned previously, the school system in Indonesia consists of a kindergarten (2 years), primary school (6 years), junior high school (3 years), senior high school (3 years) and university level of education. The school age population in this study is defined as persons 6 years of age and over who are either required by law or are eligible to attend schools at a certain level (U.N., 1966: 12). In the following subsections we will discuss the

pre-school age population, primary-school age population and the secondary-school age population.

(1). Pre-school Age Population.

For the purpose of the following discussion we define pre-school age population as persons 0-5 years of age. The pre-school age population is expected to increase in size as follows:

Base (pre-school) population, 1971 : 943 (thousand)							
Population (in thousand)				Percent change			
1986		2001		1971-86	1986-2001	1971-2001	
number	%	number	%				
Series A2	1632.3 (17.8)	2310.5 (14.8)		73.1	41.5	145.0	
Series A3	1575.4 (17.9)	2032.0 (14.9)		67.1	29.0	115.5	
Series B1	1465.6 (16.6)	1546.9 (11.6)		55.4	5.5	64.0	
Series C2	1422.9 (16.0)	1323.5 (9.7)		50.8	-7.0	40.3	
Series C3	1373.0 (16.0)	1159.1 (9.8)		45.6	-15.6	22.9	

The size of the pre-school age population in 2001 could not be reduced to anything smaller than 1.1 million, even under the extreme condition, where fertility would decline very rapidly accompanied by a decline in net migration (see Appendix D, Table D.12). The proportion of pre-school age in the total population, however, would decrease from 21 per cent in 1971 to between 16.0 and 17.8 per cent in 1986 and between 9.7 and 14.8 per cent in 2001. The impact of this rapidly growing population will be felt especially by the health, social and educational resources of the city. The effect will be felt even more in the opposite extreme condition, where fertility would decline slowly accompanied by an increase in net migration. Special attention therefore, should be paid, in terms of providing better and sufficient child health care, nurseries and kindergartens.

(2). The Primary-school Age Population.

The primary-school age population in this study is defined as persons aged 6-12 years. The age limit employed here conforms with the system of education in Indonesia, where formal education starts at the age

of 6 years for a 6 year period. Thereafter a child is eligible to take the final examination of the primary school. The primary school population, according to the projections will be as follows:

Base (primary-school) population, 1971 : 821.9 (thousand)

	<u>Population (in thousand)</u>				<u>Percent change</u>		
	1986		2001		1971-86	1971-2001	
	number	%	number	%	1986-2001		
Series A2	1535.2	(16.8)	2356.5	(15.1)	86.8	53.5	186.7
Series A3	1514.9	(17.2)	2129.1	(15.6)	84.3	40.5	159.0
Series B1	1490.0	(16.9)	1832.5	(13.7)	81.3	23.0	123.0
Series C2	1482.3	(16.6)	1713.2	(12.6)	80.4	15.6	108.4
Series C3	1462.4	(17.1)	1539.9	(13.0)	77.9	5.3	87.4

The projected primary-school age population can be seen in Appendix D, Table D.12.

The primary-school age attendance rate for both sexes in 1971 was 59.7 per cent (see Chapter 2). If this rate remains constant from 1971 to 2001, the number of children who would be able to attend primary school would increase from 512 thousand in 1971 to 1407 thousand in 2001 under series A2. It implies that 950 thousand children would not be able to attend primary school, an increase of 1.8 times from 1971. It should be noted, however, that President Suharto in the 1978 People Council Assembly declared that a compulsory education system will be executed from 1981. This implies that the primary school attendance rate, hopefully, would increase from 1981 upward. Assuming that this rate would increase by 80 per cent in 2001 with a pupil-teacher ratio of 42¹⁾, Jakarta in 2001 would need about 45 thousand primary school teachers under series A2 or 29 thousand teachers under series C3. The average of the ratio of pupils per institution during 1963-75 was 344.2 (Census and Statistical Office, Jakarta, 1976:67). In order to maintain this ratio, with the above school attendance assumption

1). The average pupil-teacher ratio during 1963-75 was 42.44 children per teacher (Census and Statistical Office, Jakarta, 1976:1976:67).

(80 per cent), Jakarta in 2001 would need between 5.5 and 3.6 thousand primary schools under series A2 and C3 respectively. In 1975 there were 1838 primary schools in Jakarta (Census and Statistical Office, Jakarta, 1976:67). Another 1.8 to 3.7 thousand primary schools should be built within the next 25 years.

(3). The Secondary-school Age Population.

This age group is defined as persons 13-18 years of age.

The secondary-school age population is expected to increase as follows:

Base (secondary-school) population, 1971: 613.2 (thousand)

		Population (in thousand)				Percent change		
		1986		2001		1971-86		1971-2001
		number	%	number	%	1986-2001		
Series A2		1069.8	(11.7)	1928.7	(12.4)	74.5	80.3	214.5
Series A3		1042.5	(11.8)	1639.3	(12.0)	70.0	57.2	167.3
Series B1		1061.0	(12.0)	1540.1	(11.5)	73.0	45.2	151.2
Series C2		1073.4	(12.1)	1522.2	(11.2)	75.0	41.8	148.2
Series C3		1050.8	(12.3)	1155.8	(9.8)	71.4	10.0	88.5

The percentage of this age group to the total population is expected to decline from 13.6 per cent in 1971 to between 11.7 and 12.3 per cent in 1986 and to between 9.8 and 12.4 per cent in 2001.

In 1971, the school attendance rate of this age group was 43.2 per cent (see Chapter 2) for both sexes. Let us assume that the school attendance rate of this age group would increase by 70 per cent in 2001. Under series A2, then, the expected number of children in secondary school by 2001 will be 1350 thousand. The average pupil-teacher ratio during 1968-75 was 16.7 children per teacher and the average of the ratio of students per institution was 278.7 (Census and Statistical Office, Jakarta, 1976:71-74). Suppose we use these ratios for 2001, then Jakarta in 2001 would need about 81 thousand secondary school teachers and about 5 thousand secondary schools under series A2. On the other hand, with the same school attendance, pupil-teacher ratio and students per institution assumptions, Jakarta would need 48 thousand secondary school teachers and 3 thousand secondary schools in 2001 under series C3. This perhaps, will be very

hard to achieve, viewed in the light of available facilities and other resources to be spent on it. In the light of these conditions, therefore, a large proportion of children in the 13-18 age group will undoubtedly have to miss secondary education.

6.4.2. Working Age Population.

Every country in the world undoubtedly recognizes the need for a man power program in an effort to raise the nation's economic conditions. Therefore, one of the social and moral obligations of a responsible government is to provide productive employment for adults in the working ages. If the government fails to do this it creates social and economic problems in the society.

In 1971 census Jakarta's working age population (persons aged 15-64 years) was enumerated as 2,516,882 whereas 1,225,278 persons (51.3 per cent) were in the economically active group. The male population of the same group was 1,273,690 persons whereas only 1,001,776 males (78.7 per cent) were economically active. Among the 1,243,192 female population aged 15-64 years, only 289,828 females (23.3 per cent) were in the economically active group (B.P.S., 1974, Series E, No. 09:150-154). The working age population of Jakarta is expected to double in 1986 and triple before reaching 2001 under any series of assumption. The working age population would increase to 9774, 8414, 8929, 9523 and 8172 thousand under series A2, A3, B1, C2 and C3 respectively (Appendix D, Table D.13).

The 1971 census also reveals that 5.5 per cent of total Jakarta's population aged 10 years and over was enumerated as unemployed (see Chapter 2). According to the Urban Unemployment Survey conducted in three large cities in Java in 1972 (Jakarta, Surabaya and Bandung), there is an indication that the proportion of unemployed among Jakarta's economically active population was rising (Iskandar ed, 1972:16-27). With such a massive growth of working age

population, Jakarta in 2001 is expected to feed at least half a million unemployed inhabitants. The job requirements put more and more pressure on the employment market. Also there are instances in which an increase in the number of crimes has been attributed to the demoralizing effects of unemployment. Therefore, it is of great importance to the development planners, politicians and research workers to pay special attention to this matter.

6.4.3. Dependency Ratio.

The 1961 and 1971 censuses indicate that the total dependency ratios for Jakarta was 71.2 and 80.6 respectively (see Chapter 2). According to the projections, although the population would increase rapidly, the proportion of the population which is non-productive (under 15 years of age and 65 years and over) as compared to the productive population (15-64 years of age) will be pressed down to between 43 and 62 per cent. Such a condition could lighten up the retardation of economic advancement. The projections indicate a decline in the total dependency ratios to 59.9, 62.3, 49.8, 43.2 and 45 in 2001 under series A2, A3, B1, C2 and C3 respectively (see Table 38).

TABLE 38
PROJECTED DEPENDENCY RATIO, JAKARTA, 1971 - 2001.

Assumption	1971	1976	1981	1986	1991	1996	2001
Series A2	81.0	74.1	71.5	68.2	65.2	62.2	59.9
Series A3	81.0	74.1	72.5	70.0	67.3	64.4	62.3
Series B1	81.0	74.1	70.8	65.8	60.2	54.6	49.8
Series C2	81.0	74.1	69.8	63.5	56.3	49.5	43.2
Series C3	81.0	74.1	70.7	65.1	58.2	51.2	45.0

6.5. The Projected Population of Jabotabek for 1971-2001.

As mentioned previously Jabotabek is a future extension area of Jakarta. The population of Jabotabek in 1971 was reported as being 6,958,367 persons, consisting of 4,546,492 persons in Jakarta, 1,894,177 persons in Bogor, 1,066,695 persons in Tangerang and 692,817 persons in Bekasi (B.P.S. unpublished 1971 census data).

Although Jabotabek is not our concern in this study, presenting these additional information data about this area, hopefully, is valuable for the program planners and decision makers.

6.5.1. Total Population.

Under series A2 the population of Jabotabek would increase to 21 million in 2001, while under series C3 the population is expected to increase to 16.6 million in 2001. The medium projections yielded figures ranging from 18.4 to 19.3 million in 2001.

This implies that within 30 years the population of Jabotabek would increase between 242 and 310 per cent under five series of assumptions (see Appendix D, Table D.14). Such a rapid increase in Jabotabek's population will cause many social, economic and political problems. The government should therefore concentrate on two activities, create resettlement centers in Bogor, Tangerang, Bekasi, Depok, Serpong, Cikarang etc. and spread out trade and industrial centers to conform with the development pattern of the above resettlement policy.

6.5.2. Population Growth.

Under the same fertility and migration assumptions as made for Jakarta, the Jabotabek population would grow at the following rates: under series A2 the estimated CBR of 45.2 per 1000 persons in 1971-76

would decline to 30.3 per 1000 persons in 1996-2001. The estimated CDR would decline from 14 per 1000 persons in 1971-76 to 7.3 per 1000 persons in 1996-2001. Under such conditions it would provide a natural increase of 3.1 per cent in 1971-76 and 2.3 per cent in 1996-2001. Considering the migration assumption, the rate of population growth is expected to be 4.5 per cent in 1971-76 and it would decline to 3.1 per cent in 1996-2001. The GFR is expected to decline from 190 for women aged 15-44 years in 1971-76 to about 133 per 1000 women 15-44 years of age. Under series C3 the corresponding figure for CBR which is 45.2 per 1000 persons at the beginning of the period of projection would decline to 19.0 per 1000 persons at the end of the period of projection. The CDR would decline from 14 to 7 per 1000 persons. The natural increase from this condition, 3.1 per cent in 1971-76, would decline to 1.2 per cent in 1996-2001. The rate of population growth would decline from 4.5 per cent in 1971-76 to 1.6 per cent in 1996-2001. Under the medium projections the natural increase would vary between 1.2 and 2.3 per cent, the population growth rate would vary between about 2.1 and 2.6 per cent in 1996-2001 (see Appendix D, Table D.15).

6.5.3. Population Composition.

Under series A2 the estimated proportion of population under 15 years of age would drop from 43.5 per cent in 1971 to 35.8 per cent in 2001. A comparison of the latter figure with the corresponding proportion under series A3, B1, C2 and C3 indicates the effect of the fertility differential on this age segment. The 15-29 age group would also decline (slightly) under all five assumptions, from 29.6 per cent in 1971 to between 29.2 and 26.5 per cent. On the contrary, the proportion for 30 years and over age groups would continuously increase, and this would be caused by an improvement in health and standards of living expected in the coming years. The extent of the shift of the age structure depends largely on the rate of change in fertility. If the fertility rapidly declines in the next 30 years, Jabotabek's population would become older as we progress towards the year 2001.

CHAPTER 7

SUMMARY AND CONCLUSION

This study is an attempt to fill the gaps in existing knowledge on the demography of Jakarta. By assembling, estimating and describing the demographic parameters and vital rates we provided a sound basis for examining the change in the population growth in Jakarta.

The analysis of the size and the rate of growth of Jakarta's population, particularly before the nineteenth century (Chapter 2), was one of the first attempts to put all the available historical material together.

For the recent population, analysis of the three components of population change has been carried out mainly by use of the 1961 and 1971 census statistics. Despite limitations and shortcomings in the published data, this study has succeeded to a large extent in throwing light on the demographic aspect of Jakarta's population.

The findings presented in this study indicate that the population of Jakarta city has grown very rapidly, particularly from the fifth decade of the twentieth century. The average annual increase in the fourth, fifth and sixth decades of this century was 88,726, 124,973 and 153,060 persons respectively. The accelerating population growth annually has been attributed to in-migration. Slightly less than one half of the rate of growth was attributed to natural increase.

Although vital data based on accurate and complete estimations are not available, this study succeed in observing that Jakarta experienced a high fertility level in the past. However, the fertility indices demonstrate a declining trend since 1961. It has been found that the reduction in birth rate was due to the declining fertility in the ages 15-24 years. The main reason for this was the postponement of marriage. If marital fertility is

considered, there was a decreasing trend observed in the older age groups. The decline was probably a result of the progress in the number of women practicing family planning. An analysis of fertility differentials exhibited some interesting features. There was a negative association between education attainment and the level of parity. The higher the level of education attainment the lower the level of average parity. A positive association between economic status and fertility has also been observed. The higher the income, the higher the level of average parity. In addition, other cultural differentials, like ethnic and religion differences were also observed. The fertility of Jakarta's population has been declining and this probably has been the effect of the family planning program as evidenced by the current users of any types of contraceptives which has been increasing over time.

The discussion on mortality indicates that Jakarta's population experienced a high rate of mortality in the earlier decades of the twentieth century. The mortality pattern deteriorated during the second world war and then gradually returned to prewar levels. According to our estimate, mortality has been declining in Jakarta since the sixth decade of this century. There were sex differences in the pattern of mortality. The general feature shows an excess of male over female death rates in the entire span of age groups. The sex-age pattern of mortality conforms to the standard pattern of mortality (Chapter 3). The age differential in the decline of mortality has also been observed in this study. However, some peculiar features of the changes in the age-specific-death rates might be due partly to inaccuracies in the statistics, particularly in the young age groups. On the other hand, it is a matter of fact that the health conditions and the standard of living have improved during the period under discussion. To some extent, improvement in these conditions has attributed to the reduction in mortality rates. In this study, two sets of life tables have been constructed,

one based on the census statistics and the other based on the registered vital statistics for Jakarta in 1971. By using Brass' Logit System, those two sets of life tables are converted to a plausible abridged life table for Jakarta. The causes of death are also examined in this study. The statistics indicate that during the sixth decade of this century the respiratory- and gastro-intestinal-tract infections still dominated the causes of death in Jakarta.

The patterns and trends in population movement have also been examined in this study. Although international migration into Jakarta has little meaning in terms of size, compared with internal migration, the evidence indicates that international migration has been occurring since the ancient time, when people from Kampuchea, India and China came to Java (Chapter 2). Internal migration, however, played the greatest role in the rapidity of population growth in Jakarta. The acceleration of the speed of migration has become more obvious since Jakarta became the capital city of the United Republic of Indonesia (1950) which enabled it to play the role of a center for all types of national interest. It was observed that 48 per cent of Jakarta's population were lifetime in-migrants in 1961, while in 1971 the percentage was reduced to about 40 per cent. The yearly average in-migrants to Jakarta during the early 1950's were observed to be around 100 thousand persons. In the 1960's, however, the yearly average increased to 110 thousand persons. According to our estimates, around 81 per cent of the lifetime migrants in 1971 came from Java, particularly from West- and Central-Java. Educational differentials among lifetime migrants into Jakarta indicate that, in general, the migrants had a better educational background than that of the natives, particularly migrants from outside Java. Those who migrated to Jakarta were either persons who were seeking a higher education or persons who were seeking a better job or a better income. The average age of migrants when they migrated into Jakarta was observed to be

around 19 years for both sexes and the average (median) duration of residence in Jakarta was between 7 and 9 years in 1971.

Population growth and its implications for Jakarta after 1971 would very much depend on the stability of the socio-economic and political conditions. If the government neglects in the improvement of the health of the population, in the execution of family planning programs, and in limiting the flow of migrants into Jakarta, it would face a catastrophic condition in the future. However, we believe that no single responsible government will neglect the effort to improve socio-economic and political conditions of her own population. With this in mind we have made estimates of the future population of Jakarta to 2001, under one set of mortality assumptions, and 3 sets each of fertility and migration assumptions. The following implications can be expected in the projections of Jakarta's population:

- (1). With the high projection, we could expect 15.6 million persons in 2001, of which 34 per cent would be the children under 15 years of age, 62 per cent working population and the remaining 4 per cent older people of 65 years and over.
- (2). The medium projections would provide between 13.3 and 13.7 million people, depending on the assumption made. The percentage of children under 15 years of age would be between 26 and 35, while the working age population would comprise between 62 and 70 per cent of the total population.
- (3). With the low projection, on the other hand, the expected population in 2001 would be around 11.8 million, 27 per cent of whom be the children under 15 years of age, 69 per cent working age population and 4 per cent aged people.
- (4). The number of persons enrolled in school and in labour force would be determined by the pattern of the school enrolment rate and the labour force participation rate. Those rates would depend on the socio-economic and educational resources available in the future.

Considering all factors, we support the idea to extend the resettlement area of Jakarta to Jabotabek, in order to lighten the population pressure on Jakarta. However, the most important thing is to redistribute or to spread the centers of education, trade and commerce, industry and so forth, from Java, especially from Jakarta, to provinces outside Java. Also we have to rethink maintaining Jakarta as the capital city of Indonesia. It would be wiser if the Indonesian Government took steps to plan and develop another ideal city as the future capital city of Indonesia. In the meantime, the restriction on migration into Jakarta should be tightened. On the other hand, comprehensive demographic and other social research should be conducted to provide more accurate information for further development.

Finally, we only hope that the present study could provide a stepping stone for more detailed and valuable studies on the population of Jakarta.

REFERENCES

- Abdoel Djalal, 1977a : *The Family Planning Program as a Part of Population Policy in Indonesia*, unpublished paper presented for Department of Demography, R.S.S.S., A.N.U., Canberra.
- , 1977b : 'Perkembangan Penduduk Jakarta Abad 16 - 20' (The Growth of Jakarta's Population, 16th - 20th century), *Widyapura*, 1 (9-10):9-15.
- Abdoel Djalal and Harjoto Sidik, 1974 : *Peranan Pendidikan Kependudukan Dalam Menanggulangi Masalah Kependudukan di Indonesia* (The Role of Population Education to Overcome the Population Problems in Indonesia) unpublished Master Thesis, Faculty of Public Health, University of Indonesia, Jakarta.
- Agarwala S.N. and Venkatacharya K., 1970 : 'A Method for Estimating Annual Birth Saved by the Use of Various Family Planning Methods' in Bose A. et al (eds): *Studies in Demography*, The University of North Carolina Press, Chapel Hill, George Allen and Unwin, Ltd, London.
- Ajami I, 1976 : 'Differential Fertility in Peasant Communities: a Study of Six Iranian Villages', *Population Studies*, 30, (3):453-463.
- Badan Perencana Pembangunan (BAPPEDA) DKI Jakarta, 1972 : *Djakarta Membangun* (Jakarta in Progress), Pemerintahan DKI Jakarta, Jakarta.
- Berelson et al, 1966 : 'KAP Studies on Fertility', *Family Planning and Population Program: a Review of World Development*, University of Chicago Press, Chicago.
- Biro Pusat Statistik (B.P.S.), 1963a : *Sensus Penduduk 1961 DKI Jakarta Raya, angka-angka tetap* (Population Census 1961, Jakarta Raya, Fixed Figures), Biro Pusat Statistik, Jakarta.
- , 1963b : *Sensus Penduduk 1961 Republik Indonesia, angka-angka sementara* (Population Census 1961, Republic of Indonesia, Preliminary Figures), Biro Pusat Statistik, Jakarta.
- , 1968 : *Survey Penduduk Ronde ke III, tahun 1974* (Population Survey, Third Round, 1974), Biro Pusat Statistik, Jakarta.
- , 1974 : *Sensus Penduduk 1971, Seri E, No. 01-26* (Population Census, 1971, Series E, No. 01-26), Biro Pusat Statistik, Jakarta.
- , 1975a : *Sensus Penduduk 1971, Penduduk Indonesia, Seri D* (Population Census 1971, Population of Indonesia, Series D), Biro Pusat Statistik, Jakarta.
- , 1975b : *Sensus Penduduk 1971, Keadaan Tempat Tinggal di Indonesia, Seri F* (Population Census 1971, Housing Condition in Indonesia, Series F), Biro Pusat Statistik, Jakarta.
- , 1976 : *Analysis and Evaluation of the First Year Result of the Sample Vital Registration Project*, Biro Pusat Statistik, Jakarta.
- B.K.K.B.N. DKI Jakarta, 1974 : *Laporan Perkembangan Program Keluarga Berencana di DKI Jakarta Selama Pelita I, 1969-1974* (Report on the Development of Family Planning Program in Jakarta During the First Year of the Five Year Development Plan, 1969-1974), BKKBN DKI Jakarta, Jakarta.

- Blau P.M. and Duncan O.D., 1967 : *The American Occupational Structure*, John Wiley, New York.
- Brand W., 1940 : 'Sterfte te Batavia 1929-1931' (Mortality in Batavia 1929-1931), *Geneeskundig Tijdschrift voor Nederlandsch-Indie*, 80:1470-1477.
- Brass W., 1975 : *Method for Estimating Fertility and Mortality from Limited and Defective Data*, The University of North Carolina, Chapel Hill.
- Castles L., 1967 : 'The Ethnic Profile of Jakarta', *Indonesia*, 1:153-204, Modern Indonesia Project, Cornell University, Ithaca, New York.
- Census and Statistical Office (C.S.O.), Jakarta, 1976 : *Statistical Yearbook of Jakarta*, Census and Statistical Office Jakarta, Jakarta.
- Cho L.J. ed., 1976 : *Introduction to Census of Asia and the Pacific 1970-1974*, East West Population Institute, East West Center, Honolulu, Hawaii.
- Cho L.J. et al 1976 : *Estimates of Fertility and Mortality in Indonesia Based on the 1971 Population Census*, Biro Pusat Statistik, Jakarta.
- Clark C., 1967 : *Population Growth and Land Use*, MacMillan, London.
- Coale A.J., 1971 : 'Age Patterns of Marriage', *Population Studies*, 25,(2):193-214
- Coale A.J. and Demeny P., 1966 : *Regional Model Life Table and Stable Population*, Princeton University Press, Princeton, New Jersey.
- Coale A.J. and Trussel T.J., 1974 : 'Model Fertility Schedules: Variations in the Age Structure of Childbearing in Human Populations', *Population Index*, 40,(2):185-258.
- DCI Djakarta, 1972 : *Djakarta Dalam Data Pembangunan* (Djakarta in Development Data), DCI Djakarta, Djakarta.
- de Haan ed. 1922 : *Oud Batavia, deel 1 en 2* (Old Batavia vol.1 and 2), G.Kolff & Co, Batavia.
- de Haas J.H., 1936 : 'Over de Zuigelingensterfte in de Stad Batavia in 1934' (On the Infant Mortality in the City of Batavia in 1934), *Geneeskundig Tijdschrift voor Nederlandsch Indie*, 76:2186-2203.
- , 1938 : 'Zuigelingsterfte in Batavia II: Bewerking der Gegevens over 1935 en 1936' (Infants Mortality in Batavia II: Analysis of 1935 and 1936 Data), *Geneeskundig Tijdschrift voor Nederlandsch Indie*, 79:707-726.
- de Vries E., 1946 : 'Geboorte en Sterfte Onder de Japansche Bezetting' (Birth and Death During the Japanese Occupation), *Economisch Weekblad voor Nederlandsch Indie*, 12:60-61.
- Departement van Landbouw, Nijverheid en Handel, 1933 : *Volkstelling 1930, Deel 1, Inheemsche Bevolking van West Java* (Population Census of 1930, Vol.1, Native Population in West Java), Dept. van Landbouw, Nijverheid en Handel, Batavia.
- D.K.K. DKI Jakarta : *Annual Report 1966-1970* (Mimeo).
- Driver E.P., 1963 : *Differential Fertility in Central India*, Princeton University Press, Princeton.
- Hajnal J., 1953 : 'Age at Marriage and Proportions Marrying', *Population Studies*, 7,(2):111-136.
- Harbison F. and Myers C.A., 1964 : *Education, Man Power and Economic Growth*, Mc Graw Hill Book Company, New York.

- Haryono Suyono, 1974 : *Religions Differential Fertility of Jakarta Women, an Exploratory Study*, Biro Pusat Statistik, Jakarta.
- Heeren H.J., 1955 : 'The Urbanization of Djakarta', *Ekonomi dan Keuangan*, 8, (11) : 696-736.
- Henry L., 1961 : 'Some Data on Natural Fertility', *Eugenics Quarterly*, 8, (2) : 81-91.
- Hull T.H. and Hull V.J., 1976 : *The Relation of Economic Class and Fertility, an Analysis of Some Indonesian Data*, Population Institute Gadjah Mada University, Yogyakarta, Indonesia.
- Iskandar N. ed. 1972 : *Report on the Urban Unemployment Survey in DKI Jakarta, Kodya Surabaya and Kodya Bandung*, Lembaga Demografi, Fakultas Ekonomi, Universitas Indonesia, Jakarta.
- , ed. 1974 : *Demographic Factbook of Indonesia* (second edition), Lembaga Demografi, Fakultas Ekonomi, Universitas Indonesia, Jakarta.
- Jain S.P., 1939 : *Relationship Between Fertility and Economic and Social Status*, Board of Economic Enquiry, Lahore.
- Kannisto V., 1963 : *Population Increase in Indonesia*, Central Bureau of Statistics, Djakarta.
- Kementerian Kesehatan R.I., 1959 : *Laporan Kelahiran dan Kematian, tahunan, 1958, Daerah Djawa dan Madura* (Annual Report on Births and Deaths 1958, Java and Madura), Mimeo, Ministry of Health, Djakarta.
- Knodel J., 1977 : 'Family Limitation and the Fertility Transition: Evidence from the Age Patterns of Fertility in Europe and Asia', *Population Studies*, 31, (2) : 219-249.
- Koentjaraningrat, 1975 : *Masyarakat Desa di Selatan Jakarta* (Rural Society in Southern of Jakarta), LIPI Jakarta, Jakarta.
- Koloniaal Verslag 1815-1917 (The Colonial Report 1815-1917).
- Krom N.J., 1926 : *Hindoe-Javaansche Geschiedenis* (The History of Javanese Hindus), s'Gravenhage, Martinus Nyhoff.
- L.D.F.E.U.I., 1971 : *Current Fertility, Jakarta 1970*, Lembaga Demografi, Fakultas Ekonomi, Universitas Indonesia, Jakarta.
- Liem Tjay Tie and de Haas J.H., 1939 : 'Over de Zuigelingensterfte in Eenige Onderdistricten van het Regenschap Tasikmalaja, West Java, in 1935, 1936 en 1937' (Concerning Infant Mortality in Some Subdistricts of Tasikmalaja Regency, West Java, in 1935, 1936 en 1937), *Geneeskundig Tijdschrift voor Nederlandsch Indie*, 79:5015-5038.
- Massey D.S and Tedrow L.M., 1976 : 'Economic Development and Fertility: a Methodological Reevaluation', *Population Studies*, 30, (3) : 429-437.
- McDonald P.F. et al, 1976 : *Levels and Trends in Fertility and Childhood Mortality in Indonesia*, Lembaga Demografi, Fakultas Ekonomi, Universitas Indonesia, Jakarta.
- McNicoll G. and Mamas S.G.M., 1976 : *Keadaan Demografi di Indonesia* (The Demographic Situation in Indonesia), paper of the East West Population Institute translated in Indonesian Language, Lembaga Kependudukan, Universitas Gadjah Mada, Yogyakarta dan Biro Pusat Statistik, Jakarta.

- Mertens W., 1976 : 'Jakarta, a Country in a City: A Demographic Introduction to Jakarta', *Majalah Demografi Indonesia*, 3, (6): 50-109.
- Milone P.D., 1966 : *Queen City of the East: The Metamorphosis of a Colonial City*, PhD Thesis (History), University of California, University of Microfilms, Inc., Ann Arbor, Michigan.
- Mochtar R. and Soedarjono R., 1957 : 'A General Public Health Survey Within the Demonstration and Study Center for Public Health and Preventive Medicine in Djakarta City', *Madjalah Kedokteran Indonesia*, 7, (12): 375-399.
- National Family Planning Institute of Indonesia (NFPII), 1970 : *Djakarta KAP-Survey, 1968*, IPPA, Djakarta.
- Notestein F., 1963 : 'Class Differences in Fertility' in Bendix R. and Lipset S.M. (eds): *Class, Status and Power*, The Free Press, Glencol.
- Ouwenhand C.D., 1912 : 'Mortaliteit te Batavia' (Mortality in Batavia), *Geneeskundig Tijdschrift voor Nederlandsch Indie*, 12: 296-309.
- Peper B. 1967 : *Groote en Groei van Java's Inheemsche Bevolking in de Negentiende Eeuw* (The Size and Growth of Java's Native Population in the Nineteenth Century), Afdeling Zuid- en Zuidoost-Azie, Anthropologisch-Sociologisch Centrum, Universiteit van Amsterdam.
- Potter R.G. 1969 : 'Estimating Births Averted in a Family Planning Program' in Behrman S.J. et al (eds): *Fertility and Family Planning*, University of Michigan Press, Ann Arbor.
- Pressat R. 1972 : *Demographic Analysis: Methods, Results, Applications*, Aldine-Atherton, Chicago and New York.
- Raffles S.T.S. 1965 : *The History of Java*, vol.1 and 2, Oxford Historical Reprint (First print 1817).
- Shryock H.S. and Siegel J.S. 1971 : *The Methods and Materials of Demography*, U.S. Department of Commerce, Bureau of the Census, Washington D.C.
- Shorter F.C. and Pasta D. 1974 : *Computer Methods for Population Projections: With Particular Reference to Development Planning*, The Population Council, New York.
- Sinquefield J. and Bambang Sungkono 1977 : *Fertility and Family Planning in Java and Bali: Based on 1976 Indonesian Fertility Survey and Other Sources*, (preliminary draft prior publication), Central Bureau of Statistics, Jakarta.
- Speare A.Jr. 1975 : 'Interpreting the Migration Data from the 1971 Census' *Majalah Demografi Indonesia*, 2, (3): 66-85.
- Suharso et al 1975 : *Migration and Education in Jakarta*, National Institute of Economic and Social Research, Indonesian Institute of Science, Jakarta.
- Suharto S. and Abdulmadjid M. 1973 : *Progress Report on 1971 Population Census of Indonesia*, Biro Pusat Statistik, Jakarta.
- Sundrum R.M. 1976 : 'Inter-Provincial Migration', *Bulletin of Indonesian Economic Studies*, 12, (1): 70-92.
- Temple G.P. 1975 : 'Migration to Jakarta', *Bulletin of Indonesian Economic Studies*, 11, (1): 76-81.
- Tesch J.W. 1948 : 'The Hygiene Study Ward Centre at Batavia: Planning and Preliminary Results (1937-41)', *Acta Leidensia Edita Cura et Sumptibus Scholae Medicine Tropicae*, vol.19.

- The Liang Gie, 1958 : *Sedjarah Pemerintahan Kota Djakarta* (The History of the Government of the City of Jakarta), Kotapradja Djakarta Raya, Djakarta.
- Titus M.J. 1972 : 'Differential Fertility and Mortality in Djakarta Raya, Indonesia, a Socio-spatial Analysis of the 1961 Census Based on the Demographic Transition Model', *Bulletin Sociale Geografie Ontwikkelingslanden*, Series II, (2):7-47.
- Tjandrasasmita U. and Hadisutjipto, 1971 : *Djakarta dan Sekitarnya, Dari Zaman Prasedjarah Hingga Keradjaan Padjadjaran* (Djakarta and Environs from the Prehistoric time up to The Padjadjaran Kingdom), DCI Djakarta, Dinas Musium dan Sedjarah, Djakarta.
- Ueda K., 1964 : *Analysis of the Results of the One Per Cent Sample Tabulation of the Population Census of Indonesia, 1961*, Central Bureau of Statistics, Statistical Research and Development Centre, Djakarta.
- , 1965 : *Population Increase in Indonesia, the First and Second Demographic Survey in Indonesia*, Biro Pusat Statistik, Djakarta.
- United Nations, 1956 : 'Manual III, Methods for Population Projections by Sex and Age', *Population Studies No.25*, United Nations, Department of Economic and Social Affairs, New York.
- , 1958 : 'Multilingual Demographic Dictionary', *Population Studies No.29*, United Nations, Department of Economic and Social Affairs, New York.
- , 1962 : 'Demographic Aspect of Man Power, Report I, Sex and Age Pattern of Participation in Economic Activity', *Population Studies No.33*, United Nations, Department of Economic and Social Affairs, New York.
- , 1963 : *Population Bulletin No.6*, with Special Reference to the Situation and Recent Trends of Mortality in the world, United Nations, Department of Economic and Social Affairs, New York.
- , 1966 : 'Estimating Future School Enrolment in Developing Countries, a Manual of Methodology', *Population Studies No.40*, United Nations, UNESCO, New York.
- , ECAFE, 1969 : *Draft Report on Working Group on Projections of Population as Sub-National Areas*, United Nations, ECAFE, Bangkok.
- , 1970 : 'Manual VI: Methods of Measuring Internal Migration', *Population Studies No.47*, United Nations, Department of Economic and Social Affairs, New York.
- , 1973 : 'The Determinants and Consequences of Population Trends', *Population Studies No.50, vol.1*, U.N., Dept. of Economic and Social Affairs.
- Walch-Sorgdrager G.B. 1931 : 'Onderzoek naar de Kinderen, Die in 1929 te Batavia Geboren zijn met Behulp van Vroedvrouwen van Boedi Kemoeliaan, eerste gedeelte' (Investigation of the Children who were Born in 1929 in Batavia with the Assistance of Midwives of Boedi Kemoeliaan, first part, *Geneeskundig Tijdschrift voor Nederlandsch Indie*, 71:841-861.
- Widjojo Nitisastro, 1970 : *Population Trends in Indonesia*, Cornell University Press, Ithaca and London.
- Widodo Talogo et al, 1977 : *Survei PSP Jakarta 1975, buku II* (KAP Survey, Jakarta 1975, vol.II), Bagian Ilmu Kesehatan Masyarakat dan Ilmu Kedokteran Pencegahan, Universitas Indonesia dan BKKBN DKI Jakarta.
- Wrong D.H., 1967 : *Population and Society*, Random House, New York.
- Zachariah K.C., 1968 : *Migrants in Greater Bombay*, Asian Publishing House, London.

APPENDICES

APPENDIX "A"

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TABLE A.1.

SEX RATIOS OF THE TOTAL POPULATION OF JAKARTA, URBAN AREAS OF PROVINCES
IN JAVA - BALI, AND URBAN INDONESIA, 1961 AND 1971.

Urban areas	S e x R a t i o	
	1 9 6 1	1 9 7 1
J a k a r t a	103.9	102.1
W e s t J a v a	96.1	98.5
C e n t r a l J a v a		93.7
D . I . Y o g y a k a r t a		98.7
E a s t J a v a		93.6
B a l i	not available	100.6
I n d o n e s i a	100.8	101.4

Source : B.P.S., 1963a : Table 2.

B.P.S., 1963b : Table 2.2.

B.P.S., 1974, Series E, No.09-14: Table 01.

B.P.S., 1975a, Series D: Table 01.

TABLE A.2.

QUARTILE AGE DISTRIBUTION OF POPULATION IN URBAN AREAS OF VARIOUS
PROVINCES, 1961 AND 1971.

Urban areas	1961 Quartile Age			1971 Quartile Age		
	Q1	Q2	Q3	Q1	Q2	Q3
J a k a r t a	7.7	19.9	31.4	7.8	18.1	31.5
W e s t J a v a	8.5	21.0	35.2	8.0	17.8	33.3
C e n t r a l J a v a				9.2	19.4	37.5
D . I . Y o g y a k a r t a				10.2	20.0	36.9
E a s t J a v a				9.3	20.2	36.8
B a l i	not available			8.4	19.0	34.0
I n d o n e s i a	8.1	20.6	35.2	8.3	18.3	34.0

Source : B.P.S., 1963a : Table 2.

B.P.S., 1963b : Table 2.2. and 2.3.

B.P.S., 1974, Series E, No.09-14: Table 02.

B.P.S., 1975a, Series D; Table 02.

TABLE A.3
 PERCENTAGE OF POPULATION BY MARITAL STATUS AND SEX, JAKARTA, 1961 AND
 1971, URBAN AREAS OF VARIOUS PROVINCES IN JAVA - BALI AND
 URBAN INDONESIA, 1971.

Urban areas	Sex	Single	Married	Widowed	Divorced
<u>1 9 6 1</u>					
Jakarta	Male	40.6	57.0	0.9	1.5
	Female	26.2	57.0	10.4	6.4
	Both sexes	33.6	57.0	5.5	3.9
<u>1 9 7 1</u>					
Jakarta	Male	47.6	50.1	1.5	0.8
	Female	34.7	52.8	9.0	3.5
	Both sexes	41.3	51.3	5.2	2.2
West Java	Male	47.7	50.1	1.5	0.7
	Female	35.3	51.2	9.8	3.7
	Both sexes	41.4	50.6	5.7	2.2
Central Java	Male	47.5	49.3	2.3	0.9
	Female	35.5	47.5	14.0	3.0
	Both sexes	41.2	48.4	8.4	2.0
DI Yogyakarta	Male	55.8	41.6	2.1	0.5
	Female	42.1	41.7	13.7	2.5
	Both sexes	48.9	41.7	7.9	1.5
East Java	Male	44.9	52.1	2.2	0.9
	Female	31.8	49.0	15.8	3.4
	Both sexes	38.0	50.5	9.3	2.2
Bali	Male	50.1	47.0	2.2	0.7
	Female	42.2	47.0	9.0	1.8
	Both sexes	46.1	47.0	5.7	1.2
Indonesia	Male	48.9	48.3	2.0	0.8
	Female	36.7	48.8	11.7	2.8
	Both sexes	42.7	48.6	6.9	1.8

Source : B.P.S., 1974, Series E, No. 09-14 : Table 07.
 B.P.S., 1975a, Series D : Table 08.

TABLE A.4
PERCENTAGE DISTRIBUTION OF POPULATION BY MARITAL STATUS,
AGE AND SEX, JAKARTA, 1961 AND 1971.

Age group	Single		Married		Widowed		Divorced		Population (000)	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
<u>1 9 6 1</u>										
10-14	99.6	98.6	0.3	1.1	0.0	0.1	0.0	0.2	129	129
15-19	94.2	55.8	5.0	37.3	1.3	0.1	0.7	5.6	143	145
20-24	58.6	16.6	38.5	72.3	2.8	0.4	2.5	8.4	174	173
25-34	14.8	4.6	82.2	82.2	0.6	5.1	2.3	8.0	280	267
35-44	3.3	2.1	94.6	74.7	0.9	15.2	1.2	8.1	169	135
45-54	1.9	1.5	94.8	54.9	2.1	36.5	1.2	7.0	76	67
55-64	1.5	1.3	92.0	35.1	4.8	58.3	1.7	5.3	34	34
65-74	2.0	1.4	85.4	20.8	10.3	73.9	2.3	4.0	11	14
75+	4.4	2.3	75.1	12.2	17.5	82.4	3.0	3.1	5	8
Total	40.6	26.2	57.0	57.0	0.9	10.4	1.5	6.4	1481	1426
<u>1 9 7 1</u>										
10-14	99.2	98.3	0.5	1.3	0.2	0.2	0.2	0.2	270	267
15-19	96.1	68.5	3.4	28.1	0.2	1.0	0.3	2.4	243	264
20-24	70.7	26.1	27.9	66.7	0.6	2.4	0.9	4.8	215	227
25-34	20.4	7.8	76.8	84.1	1.3	4.5	1.4	4.6	379	365
35-44	4.4	2.2	92.7	79.3	1.9	13.1	1.0	5.4	261	229
45-54	3.1	1.6	93.0	62.1	3.1	31.0	0.8	5.3	126	108
55-64	2.5	1.1	88.7	43.0	7.8	52.2	1.0	3.7	50	50
65-74	1.7	0.9	83.6	26.6	13.6	69.2	1.2	3.4	20	24
75+	2.9	0.5	76.3	15.6	19.7	80.3	1.1	3.7	6	9
Total	47.6	34.7	50.1	52.8	1.5	9.0	0.8	3.6	1569	1542

Source : B.P.S., 1963a : Table 5.
B.P.S., 1974, Series E, No. 09: Table 07.

TABLE A.5

PERCENTAGE DISTRIBUTION OF HOUSEHOLD MEMBERS BY SEX AND RELATIONSHIP TO HEAD, JAKARTA AND URBAN AREA OF INDONESIA, 1971.

Relationship to head	J a k a r t a			Urban Indonesia		
	Both sexes	Male	Female	Both sexes	Male	Female
All members	100.0	100.0	100.0	100.0	100.0	100.0
H e a d	18.7	32.7	4.5	18.8	32.3	5.5
S p o u s e	15.3	-	30.9	14.9	-	29.5
C h i l d	49.5	51.3	47.6	49.7	51.7	47.8
P a r e n t	1.1	0.4	1.8	1.4	0.5	2.3
Grandchild	1.4	1.5	1.4	2.7	2.8	2.6
Child in law	0.7	0.7	0.6	0.9	1.1	0.8
Parent in law	0.7	0.2	1.2	0.8	0.2	1.3
Other relatives	8.6	10.2	7.0	6.8	7.5	6.2
Non relatives	4.0	3.0	5.0	4.0	3.9	4.0

Source : Calculated from B.P.S.,1974, Series E, No.09:Table 03; and B.P.S.,1975a, Series D : Table 04.

TABLE A.6

PERCENTAGE DISTRIBUTION OF HEAD OF HOUSEHOLD BY MARITAL STATUS, SEX AND AGE, JAKARTA, 1971.

Age of heads	M a l e s					F e m a l e s				
	Sin	Marr	Wid	Div	Total	Sin	Marr	Wid	Div	Total
All ages	4.8	93.2	0.5	1.5	100.0	4.0	31.2	12.9	51.9	100.0
15-24	1.4	5.3	-	-	6.7	1.1	3.8	1.3	0.9	7.1
25-34	2.1	34.0	0.2	0.3	36.6	1.4	9.9	4.1	5.8	21.2
35-44	0.8	30.6	0.2	0.4	32.0	0.7	9.7	4.4	14.9	29.7
45-54	0.4	15.1	0.1	0.3	15.9	0.4	4.9	2.0	15.1	22.4
55-64	0.1	5.5	-	0.2	5.8	0.2	1.8	0.6	9.8	12.4
65-74	-	2.0	-	0.2	2.2	0.1	0.5	0.3	4.1	5.0
75+	-	0.7	-	0.1	0.8	0.1	0.5	0.2	1.3	2.1

Source : Calculated from B.P.S.,1974, Series E, No.09:Table 06.
N o t e : Sin = Single; Marr = Married; Wid = Widowed
Div = Divorced.

TABLE A.7

PROPORTION OF POPULATION BY CITIZENSHIP, JAKARTA 1961 AND 1971, URBAN AREAS OF PROVINCES IN JAVA - BALI AND INDONESIA, 1971.

Urban areas	C i t i z e n s h i p						Total urban Population (100%)
	Indo	Chin	Ind	Pak	Arab	Others	
<u>1 9 6 1</u>							
J a k a r t a	95.9	3.5	0.1		0.1	0.4	2,906,533
<u>1 9 7 1</u>							
J a k a r t a	97.1	2.6	0.1	*	*	0.2	4,546,492
W e s t J a v a	97.5	2.4	*	*	*	*	2,683,123
Central Java	98.0	1.9	*	*	*	*	2,345,190
D.I.Yogyakarta	98.6	1.3	*	—	—	*	406,337
E a s t J a v a	96.8	3.1	0.1	*	*	*	3,694,311
B a l i	96.1	3.6	0.2	*	*	0.1	208,047
Indonesia	96.3	3.5	0.1	*	*	0.1	15,918,885

Source : B.P.S., 1963a : Table 7 and 8.

B.P.S., 1974, Series E, No.09-14 : Table 09.

B.P.S., 1975a, Series D : Table 10.

Note : Indo = Indonesian; Chin = Chinese; Ind = Indian;

Pak = Pakistani; Arab = Arabian.

* = less than 0.1 per cent.

TABLE A.8

PERCENTAGE DISTRIBUTION OF POPULATION BY PLACE OF BIRTH, JAKARTA 1961 AND 1971, URBAN AREAS OF PROVINCES IN JAVA - BALI AND INDONESIA, 1971.

Urban areas	P l a c e o f b i r t h							Total urban Population (100%)
	Jak	Java	Sum	Kal	Sul	Others	Abroad	
<u>1961</u>								
Jakarta	51.0	41.0	3.8	0.5	0.9	0.5	1.1	2,906,533
<u>1971</u>								
Jakarta	59.9	31.8	5.1	0.8	1.2	0.6	0.6	4,546,492
West Java	0.9	96.8	1.2	0.2	0.3	0.2	0.4	2,683,123
Central Java	0.4	98.2	0.5	0.2	0.2	0.2	0.3	2,345,190
D.I.Yogyakarta	0.8	95.4	2.5	0.2	0.3	0.4	0.3	406,337
East Java	0.2	97.4	0.4	0.5	0.5	0.5	0.1	3,694,311
Bali	0.2	4.5	0.3	0.1	0.6	94.0	0.3	208,047
Indonesia	0.4	58.0	20.9	6.4	8.8	5.0	0.5	15,918,885

Source : B.P.S., 1963a : Table 20; and B.P.S., 1974, Series E, No.01-26: Table

Note : Jak = Jakarta; Sum = Sumatra; Kal = Kalimantan;

Sul = Sulawesi; Others = Other islands.

TABLE A. 9

PERCENTAGE DISTRIBUTION OF POPULATION BY RELIGION, JAKARTA, 1961 AND 1971,
URBAN AREAS OF PROVINCES IN JAVA - BALI AND INDONESIA, 1971.

Urban areas	R e l i g i o n								Total urban Population (100%)
	Other								
	Islam	Prot	Cath	Chris	Hind	Budd	Conf	Others	
<u>1 9 6 1</u>									
J a k a r t a	84.7	3.1	1.7			7.8		2.7 ¹⁾	2,906,533
<u>1 9 7 1</u>									
J a k a r t a	84.3	3.9	2.6	1.5	0.2	5.8	1.6	0.1	4,546,492
West Java	89.0	2.2	1.6	2.1	0.1	1.9	3.0	0.1	2,683,123
Central Java	84.1	3.8	5.4	1.9	0.1	0.6	3.8	0.2	2,345,190
D.I.Yogyakarta	83.9	3.9	9.3	1.0	0.2	0.3	1.4	0.1	406,337
East Java	88.1	2.1	2.3	2.7	0.2	0.5	3.6	0.1	3,694,311
B a l i	18.8	1.6	1.0	0.7	71.9	5.4	0.6	*	208,047
Indonesia	81.6	6.2	3.2	1.9	1.2	2.5	3.2	0.3	15,918,885

Source : B.P.S., 1963a : Table 14.

B.P.S., 1974, Series E, No. 09-14 ; Table 22.

B.P.S., 1975a, Series D : Table 12.

Note : Prot = Protestant; Cath = Catholic; Other Chris = Other Christianity; Hind = Hinduism; Budd = Buddhism; Conf = Confucius.

1) = includes other christianity.

* = less than 0.1 per cent.

TABLE A.10

PERCENTAGE DISTRIBUTION OF POPULATION BY RELIGION AND REGION,
JAKARTA, 1971.

R e l i g i o n	M u n i c i p a l i t y					Jakarta
	Central-	South-	West-	North-	East-	
I s l a m	80.6	91.7	75.4	85.5	88.4	84.3
Protestant	5.4	3.6	2.3	3.8	3.7	3.9
Catholic	3.5	2.1	3.1	1.6	2.2	2.6
Other Christianity	1.8	0.5	2.2	1.5	1.6	1.5
Hinduism	0.3	0.2	0.1	*	0.1	0.2
Buddhism	5.3	1.2	15.3	6.4	2.3	5.8
Confucius	3.0	0.6	1.3	1.1	1.6	1.6
Others	0.1	0.1	0.3	0.1	0.1	0.1
T o t a l	100.0	100.0	100.0	100.0	100.0	100.0

Source : B.P.S., 1974, Series E, No. 09 : Table 12.

Note : * = less than 0.1 per cent.

TABLE A.11

PERCENTAGE DISTRIBUTION OF POPULATION BY LANGUAGE SPOKEN, JAKARTA,
URBAN AREAS OF PROVINCES IN JAVA - BALI AND INDONESIA, 1971.

Urban areas	L a n g u a g e			Total urban Population (100%)
	Indonesian	Local	Foreign	
J a k a r t a	89.9	9.8	0.3	4,546,492
West Java	55.2	44.7	0.1	2,683,123
Central Java	55.7	44.2	0.1	2,345,190
D.I.Yogyakarta	57.5	42.4	0.1	406,337
East Java	60.0	39.8	0.2	3,694,311
B a l i	60.8	39.1	0.1	208,047
Indonesia	66.7	32.7	0.6	15,918,885

Source : B.P.S.,1974, Series E, No.09-14 : Table 13.
B.P.S.,1975a, Series D : Table 14.

TABLE A.12

PERCENTAGE DISTRIBUTION OF POPULATION AGED 10 YEARS AND OVER BY EDUCATIONAL
ATTAINMENT, JAKARTA, URBAN AREAS OF PROVINCES IN JAVA - BALI AND
INDONESIA, 1971.

Urban areas	Educational attainment						Total urban Population (100%)
	No school	Not yet finished E.school	Elemen tary school	Junior high school	Senior high school	Uni ver sity	
J a k a r t a	22.6	29.1	26.0	11.4	8.5	2.3	3,126,414
West java	16.1	30.9	31.8	12.2	7.5	1.5	1,860,096
Central Java	25.4	28.6	24.6	12.9	7.1	1.4	1,707,923
D.I.Yogyakarta	21.4	23.1	22.4	15.7	13.4	3.9	308,085
East Java	28.1	26.7	25.8	12.1	6.2	1.2	2,704,572
B a l i	28.9	25.9	25.0	11.5	7.3	1.3	146,824
Indonesia	22.3	29.6	27.3	12.5	7.0	1.3	11,257,796

Source : B.P.S.,1974, Series E, No.09-14 : Table 16.
B.P.S.,1975a, Series D : Table 18.

TABLE A.13
PERCENTAGE DISTRIBUTION OF POPULATION 10 YEARS OF AGE AND OVER BY SEX AND
TYPE OF ACTIVITY DURING THE WEEK BEFORE ENUMERATION, JAKARTA, 1961
AND 1971, URBAN AREAS OF PROVINCES IN JAVA - BALI
AND INDONESIA, 1971.

Urban areas and S e x	Economically active			Economically non active					T o t a l
	Employed	Unemployed	T o t a l	Attending school	House-keeping	Income- recipient	O t h e r s	Not stated	
1 9 6 1									
J a k a r t a									
Male	71.7	4.9	76.6	16.6	1.0	1.3	4.5		23.4
Female	18.7	2.4	21.1	12.7	59.5	0.7	6.0		78.9
Both sexes	45.9	3.7	49.6	14.7	29.5	1.0	5.2		50.4
1 9 7 1									
J a k a r t a									
Male	58.6	7.1	65.7	21.0	2.0	1.7	8.7	0.9	34.3
Female	16.5	3.9	20.4	16.4	52.3	1.0	8.4	1.5	79.6
Both sexes	37.7	5.5	43.2	18.8	27.0	1.3	8.5	1.2	56.8
West java									
Male	49.6	9.1	58.7	24.8	2.3	2.9	10.4	0.9	41.3
Female	13.3	6.0	19.3	19.0	49.1	1.5	9.6	1.5	80.7
Both sexes	31.1	7.5	38.7	21.9	26.1	2.2	10.0	1.2	61.4
Central Java									
Male	54.1	4.6	58.7	27.0	3.3	3.1	7.5	0.4	41.3
Female	31.1	2.8	33.9	19.0	37.9	1.8	6.9	0.5	66.1
Both sexes	42.0	3.6	45.6	22.8	21.6	2.4	7.1	0.5	54.3
D.I.Yogyakarta									
Male	46.2	3.1	49.3	40.1	1.8	3.6	5.0	0.2	50.7
Female	33.2	2.1	35.3	27.3	29.3	2.1	5.7	0.3	64.7
Both sexes	39.6	2.6	42.2	33.7	15.7	2.9	5.3	0.2	57.8
East Java									
Male	57.2	5.9	63.2	24.4	2.2	2.6	7.2	0.4	36.8
Female	26.2	3.7	29.9	17.4	42.7	1.6	7.8	0.6	70.1
Both sexes	40.9	4.8	45.8	20.8	23.5	2.1	7.5	0.5	54.2
B a l i									
Male	55.1	4.5	59.6	26.1	3.6	1.3	9.0	0.4	40.4
Female	25.2	3.1	28.3	18.4	43.4	0.8	8.6	0.5	71.7
Both sexes	40.0	3.7	43.7	22.2	23.8	1.1	8.8	0.4	56.3
Indonesia									
Male	53.6	6.5	60.1	26.1	2.4	2.4	8.2	0.8	39.9
Female	20.0	4.0	24.0	19.6	46.0	1.5	7.9	1.2	76.0
Both sexes	36.5	5.2	41.7	22.8	24.6	1.9	8.1	1.0	57.9

Source : B.P.S., 1963a : Table 30.

B.P.S., 1974, Series E, No. 09-14 : Table 29.

B.P.S., 1975a, Series D : Table 36.

TABLE A.14
PERCENTAGE DISTRIBUTION OF ECONOMICALLY ACTIVE POPULATION BY SEX AND STATUS,
JAKARTA, 1961 AND 1971, URBAN AREAS OF PROVINCES IN JAVA - BALI
AND INDONESIA, 1971.

Urban areas and sex	Own account workers	Employers	Employees	Unpaid family workers	Seeking work for the first time	Total Population (100%)
<u>1 9 6 1</u>						
J a k a r t a						
Male	23.7	2.0	61.1	1.1	12.1	783,355
Female	12.2	0.9	66.0	2.9	18.0	205,158
Both sexes	21.3	1.8	62.1	1.4	13.4	988,513
<u>1 9 7 1</u>						
J a k a r t a						
Male	20.6	3.3	67.8	4.5	3.8	1,036,024
Female	19.0	1.7	61.0	9.5	8.8	315,370
Both sexes	20.2	2.9	66.2	5.7	5.0	1,351,394
West Java						
Male	21.8	5.4	62.5	5.0	5.3	536,633
Female	19.2	3.3	51.9	11.5	14.1	182,956
Both sexes	21.1	4.9	59.8	6.6	7.5	719,589
Central Java						
Male	19.5	4.3	68.5	4.9	2.8	474,686
Female	31.5	2.1	50.5	9.1	2.5	304,711
Both sexes	24.2	3.5	63.0	6.5	2.7	779,397
D.I.Yogyakarta						
Male	23.5	4.7	63.4	4.3	2.1	74,825
Female	36.3	2.1	50.5	9.1	2.5	55,121
Both sexes	28.8	3.6	58.9	6.4	2.3	129,946
East Java						
Male	24.2	3.6	64.4	4.2	3.6	813,612
Female	31.6	1.8	51.5	10.0	5.1	423,848
Both sexes	26.8	3.0	60.0	6.2	4.0	1,237,460
B a l i						
Male	28.7	3.8	58.2	7.4	1.9	43,234
Female	36.1	1.8	42.3	16.3	3.5	20,996
Both sexes	31.1	3.2	53.0	10.3	2.4	64,230
Indonesia						
Male	25.4	3.9	60.0	7.1	3.6	3,327,468
Female	28.5	2.0	47.4	15.4	6.7	1,372,587
Both sexes	26.3	3.3	56.3	9.6	4.5	4,700,055

Source : B.P.S., 1963a : Table 32.

B.P.S., 1974, Series E, No. 09-14 : Table 32.

B.P.S., 1975a, Series D : Table 38.

APPENDIX "B"

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TABLE B.1
GENERAL VIEW OF MIGRATION DATA OF JAKARTA, 1971.

Type of migration	Number	Percent
<u>Lifetime Migration</u>		
1. Indonesia born population of Jakarta	4,516,294	100.0
2. Jakarta born population of Jakarta	2,724,659	60.3
3. Lifetime in-migrants (1) - (2)	1,791,635	39.7
4. Jakarta born population of Indonesia	2,856,874	63.3
5. Lifetime out-migrants (4) - (2)	132,215	2.9
6. Net lifetime migrants (3) - (5)	1,659,420	36.7
<u>Inter-provincial Migration.</u>		
7. Current residents of Jakarta with previous residence in Indonesia	4,517,542	100.0
8. Non-migrants born in Jakarta	2,679,857	59.3
9. Population of Jakarta with previous residence in Jakarta	3,180,096	70.4
10. Inter-provincial in-migrants (7) - (8)	1,837,685	40.7
11. Inter-provincial out-migrants (9) - (8)	500,239	11.1
12. Net inter-provincial migrants (10) - (11)	1,337,446	29.6
<u>Return Lifetime Migration.</u>		
13. Indonesian born population of Jakarta	4,516,294	100.0
14. Jakarta born population return to Jakarta (2) - (8)	44,802	1.0
15. Population born outside Jakarta, resided in Jakarta but returning to other place (11) - (5)	368,024	8.2

Source : Calculated from B.P.S., 1974, Series E, No. 09: Table 22 and B.P.S., 1975a, Series D: Table 23 and 24.

TABLE B.2
PERCENTAGE DISTRIBUTION OF INTER-ISLAND MIGRANTS INTO JAKARTA
BY DURATION OF RESIDENCE, 1971.

Years of residence	Place of Previous Residence					Total
	Java	Sumatra	Kalimantan	Sulawesi	Other Island	
less than 1	4.59	4.06	4.82	4.38	4.70	4.52
1	6.85	7.75	8.83	6.34	5.73	6.98
2	7.45	8.97	5.96	7.09	6.04	7.59
3	6.92	8.44	9.89	7.73	9.33	7.24
4	5.74	7.54	7.37	6.60	9.04	6.09
5	6.09	7.23	4.85	7.96	7.97	6.30
6	5.00	7.36	6.80	5.81	6.82	5.40
7	4.73	5.93	6.08	5.29	5.18	4.94
8	4.10	4.41	4.32	6.07	3.75	4.20
9	3.16	4.31	3.38	5.18	3.54	3.38
10+	45.37	34.00	37.70	37.55	37.90	43.36
Total	100.00	100.00	100.00	100.00	100.00	100.00
	(1,472,785)	(241,136)	(39,206)	(56,472)	(28,086)	(1,837,685)

Source : Calculated from B.P.S., 1974, Series E, No. 09: Table 25.

TABLE B.3
SEX RATIO OF VERY RECENT IN-MIGRANTS* AND NON-MIGRANTS**
FOR JAKARTA, 1971

Age group	Very recent in-migrants	Non-migrants
0-4	100	103
5-9	95	105
10-14	79	105
15-19	78	99
20-24	111	91
25-29	120	88
30-34	106	88
35-39	109	90
40-44	104	105
45-49	86	111
50-54	84	96
55-59	65	108
60-64	45	83
65-69	43	86
70-74	62	74
75+	28	75
Not stated	109	80
Total	96	100

Source : Calculated from B.P.S., 1974, Series E, No. 09: Table 24.

Note : * Recent in-migrants migrating 0-4 years preceding the census date.

** includes the return lifetime migrants.

TABLE B.4
PERCENTAGE DISTRIBUTION OF VERY RECENT IN-MIGRANTS* AND NON-MIGRANTS**
BY SEX AND AGE, JAKARTA, 1971.

Age group	Recent in-migrants			Non-migrants		
	Male	Female	Both sexes	Male	Female	Both sexes
0-4	7.4	7.1	7.3	27.0	26.4	26.7
5-9	8.7	8.7	8.7	21.1	20.1	20.6
10-14	9.4	11.5	10.5	15.5	14.7	15.1
15-19	18.4	22.5	20.5	10.7	10.8	10.8
20-24	22.5	19.5	21.0	6.1	6.7	6.4
25-29	14.2	11.3	12.7	4.3	4.9	4.6
30-34	6.9	6.2	6.5	3.7	4.2	4.0
35-39	4.8	4.2	4.5	3.3	3.7	3.5
40-44	3.1	2.9	3.0	2.7	2.6	2.7
45-49	1.6	1.8	1.7	1.8	1.6	1.7
50-54	1.2	1.4	1.3	1.3	1.3	1.3
55-59	0.5	0.8	0.6	0.7	0.7	0.7
60-64	0.4	0.8	0.6	0.6	0.8	0.7
65-69	0.2	0.4	0.3	0.3	0.4	0.4
70-74	0.2	0.3	0.3	0.2	0.3	0.3
75+	0.1	0.2	0.2	0.2	0.3	0.2
Not stated	0.4	0.4	0.4	0.3	0.3	0.3
Total	100.0 (286,888)	100.0 (300,009)	100.0 (586,897)	100.0 (1,364,355)	100.0 (1,360,304)	100.0 (2,724,659)

Source : Calculated from B.P.S., 1974, Series E, No. 09: Table 24.

Note : * Recent In-migrants migrating during 0-4 years preceding the census date.

** Includes the return lifetime migrants.

TABLE B.5
MEAN AGE OF MIGRANTS AT PRESENT AND AT THE TIME OF MOVES BY SEX AND
DURATION OF RESIDENCE, JAKARTA, 1971.

Years of residence	Mean age at present			Mean age at the time of moves		
	Male	Female	Both sexes	Male	Female	Both sexes
less than 1	19.5	20.6	20.1	19.0	20.1	19.6
1	20.6	21.1	20.9	19.6	20.1	19.9
2	21.8	21.5	21.6	19.8	19.5	19.6
3	23.1	22.9	23.0	20.1	19.9	20.0
4	23.7	23.3	23.5	19.7	19.3	19.5
5	25.2	24.7	25.0	20.2	19.7	20.0
6	26.4	25.2	25.8	20.4	19.2	19.8
7	26.8	25.5	26.8	19.8	18.5	19.8
8	28.0	26.7	27.4	20.0	18.7	19.4
9	29.0	26.9	28.0	20.0	17.9	19.0
10+	37.2	36.0	36.6	-	-	-
Total	30.1	29.0	29.6	-	-	-

Source : Calculated from B.P.S., 1974, Series E, No. 09: Table 24.

Note : Mean age at the time of moves = Mean age at present - years of residence. (Less than 1 year residence = 0.5 year).

TABLE B.6
EDUCATIONAL DIFFERENTIAL AMONG LIFETIME IN-MIGRANTS AND NON-MIGRANTS
AGED 10 YEARS AND OVER, JAKARTA, 1971.
(PERCENTAGE).

Place of birth	Educational level			T o t a l (100 %)
	No Education	Low Education	High Education	
<u>M a l e</u>				
Jakarta	15.0	78.0	7.0	707,849
J a v a	13.9	70.0	16.1	666,392
Sumatra	1.6	56.4	42.0	121,106
Kalimantan	5.7	69.0	25.3	17,036
Sulawesi	6.7	59.9	33.4	31,533
Other Islands	2.5	58.4	39.0	14,853
Indonesia	13.1	72.2	14.7	1,558,769
<u>F e m a l e</u>				
Jakarta	30.7	65.4	3.9	727,880
J a v a	38.1	54.7	7.2	679,223
Sumatra	7.3	68.2	24.6	88,628
Kalimantan	13.5	72.6	13.9	14,665
Sulawesi	14.3	65.8	19.9	21,225
Other Islands	7.0	66.6	26.4	6,886
Indonesia	32.1	60.9	7.9	1,538,507

Source : Calculated from B.P.S., 1974, Series E, No. 09: Table 23.

Note : Low Education includes: Not yet finished elementary school, elementary school and junior high school.
High Education includes: senior high school, academy and university.

TABLE B.7
AVERAGE NUMBER OF CHILDREN BORN ALIVE TO MOTHERS BY AGE AND DURATION OF
RESIDENCE AT PRESENT PROVINCE, JAKARTA, 1971.

Years of residence	Age of mothers							Mean CBA*)	N
	15-19	20-24	25-29	30-34	35-39	40-44	45-49		
0-4	0.6	1.2	2.0	2.9	3.7	3.9	4.4	2.5	141,189
5-9	1.0	2.0	2.8	3.4	4.3	4.3	4.3	3.1	130,348
10+	0.8	2.1	3.6	4.7	5.4	5.2	5.2	3.8	603,370
T o t a l	0.8	1.8	3.2	4.3	5.1	5.0	5.3	3.5	874,907

*) . Mean number of children born alive standardized for age.

A P P E N D I X "C"

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TABLE C.1
PERCENTAGE DISTRIBUTION OF RESPONDENTS WHO WERE ASKED TO RATE THE
EFFECTIVENESS OF FAMILY PLANNING METHODS, JAKARTA,
1968 AND 1975.

Specific method of Family Planning	Respondent's ability to rate the effectiveness of the family planning methods						Number of respondent (N)	
	1968			1975			1968	1975
	A	B	C	A	B	C		
<u>Modern:</u>								
Pill	25	41	34	76	3	21	468	2202
I.U.D.	33	37	30	69	7	24	253	1999
Injection	17	40	43	39	11	50	270	331
Menstrual regulation	NA	NA	NA	52	12	36	NA	127
<u>Conventional:</u>								
Diaphragma	39	20	41	40	23	37	191	105
Condom	44	22	34	63	6	31	456	2030
Foam tablet	33	26	41	33	20	47	80	217
Jelly	29	25	46	28	33	39	134	147
Sterilization	NA	NA	NA	59	8	33	NA	428
<u>Traditional:</u>								
Rhythm	43	40	17	69	9	22	386	859
Sponge	48	6	46	42	17	41	54	36
Douche	50	11	39	59	13	28	100	103
Withdrawal	72	12	16	30	36	34	204	277
<u>Folk:</u>								
Herb	23	53	24	67	7	26	307	504
Massage	35	38	27	33	26	41	354	333

Source : NFPII, 1970 : Table 7

Widodo Talogo et al, 1977 : Table 4.0.A.

Note : NA = Not Available.

A = Correct rating

B = Incorrect rating

C = Don't know.

TABLE C.2
SOURCE OF COMMUNICATION ON FAMILY PLANNING METHODS FOR RESPONDENTS
WHO HAVE USED A FIRST METHOD AND/OR CURRENT METHOD BY THEIR
EDUCATIONAL LEVEL, JAKARTA, 1968 AND 1975.

Source of information	Educational level of respondents in number of years				Total Percent
	None	1-6	7-9	10 or more	
	1968 MALE,N = 249				
Inter-personal	2.2	11.5	6.5	18.9	39.1
Medical personnel	0.8	2.4	5.9	24.6	33.7
Mass Media	-	2.1	5.6	19.5	27.2
Total percent	3.0	16.0	18.0	63.0	100.0
	1968 FEMALE,N = 198				
Inter-personal	8.0	20.3	12.4	13.6	54.3
Medical personnel	1.0	11.6	9.5	11.3	33.4
Mass media	-	3.1	5.1	4.1	12.3
Total percent	9.0	35.0	27.0	29.0	100.0
	1975 MALE,N = 271				
Inter-personal	0.8	18.8	13.3	11.4	44.3
Medical personnel	1.1	12.2	10.0	17.7	41.0
Mass media	-	0.7	4.4	9.6	14.8
Total percent	1.9	31.7	27.7	38.7	100.0
	1975 FEMALE,N = 566				
Inter-personal	7.3	20.5	14.0	15.8	57.6
Medical personnel	3.7	12.3	11.6	13.8	42.0
Mass media	-	0.2	-	0.3	0.5
Total percent	11.0	33.6	25.6	29.9	100.0

Source : NFPII, 1970 : Table 9.

Widodo Talogo et al, 1977 : Table 44.0.A.

TABLE C.3
PERCENTAGE DISTRIBUTION OF RESPONDENTS BY CONTRACEPTIVE METHODS
AND SOURCE OF INFORMATION, JAKARTA, 1975.

First method used	Source of information			T o t a l percent
	Interpersonal	Medical personnel	Mass media	
<u>M A L E</u>				
Modern	11.1	26.7	4.3	42.2
Conventional	11.7	8.6	4.8	25.1
Traditional	8.8	5.4	12.0	26.2
Folk method	6.6	-	-	6.6
Total percent	38.2	40.7	21.1	100.0
<u>F E M A L E</u>				
Modern	11.0	43.2	0.7	54.9
Conventional	6.6	7.6	1.2	15.3
Traditional	8.0	6.0	2.0	16.0
Folk method	13.8	-	-	13.8
Total method	39.4	56.8	3.9	100.0

Source : Widodo Talago et al, 1977 : Table 43.4.A.

Note : Number of respondents for Male: N=351, Female : N=701

TABLE C.4
RESPONDENT'S ATTITUDE TOWARD FAMILY PLANNING ACCORDING TO THE EDUCATIONAL LEVEL, JAKARTA, 1968 AND 1975.

Respondent's attitude toward	Educational level of respondents in number of years									
	1 9 6 8									
	None	1-6	7-9	10 or more	Total	None*	1-6	7-9	10 or more	Total
Family Planning										
	(N = 1110)									
	M A L E									
Strong disapproval	2.1	7.1	0.9	0.3	10.4	0.5	0.7	0.0	0.0	1.2
Moderate disapproval	0.8	2.8	0.3	0.6	4.5	0.2	0.5	0.0	0.0	0.7
Neutral **	8.0	12.2	2.2	2.1	24.5	4.9	12.2	1.2	1.0	19.3
Moderate approval	3.2	8.9	3.8	3.8	19.7	1.0	3.1	1.6	0.7	6.4
Strong approval	4.9	16.0	7.8	12.2	40.9	4.5	28.9	15.8	23.2	72.4
Total percent	19.0	47.0	15.0	19.0	100.0	11.1	45.4	18.6	24.9	100.0
	(N = 1126)									
	F E M A L E									
Strong disapproval	7.8	3.8	0.7	0.1	12.4	3.5	2.5	0.1	0.0	6.0
Moderate disapproval	2.3	2.3	0.4	0.0	5.0	1.5	1.9	0.2	0.1	3.7
Neutral **	14.3	6.1	1.2	0.4	22.0	7.7	4.3	0.6	0.4	13.0
Moderate approval	6.0	4.9	0.9	0.5	12.3	3.7	5.5	2.4	1.7	13.3
Strong approval	15.6	20.9	5.8	6.0	48.3	9.9	26.2	12.9	15.0	64.0
Total percent	46.0	38.0	9.0	7.0	100.0	26.3	40.4	16.2	17.2	100.0

Source : NFPII, 1970 : Table 11.

Widodo Talogo et al, 1977 : Table 22.0.A.

Note : * = None includes the informal educations.

**= Neutral includes don't know.

TABLE C.5
REASONS FOR RESPONDENT'S DISAPPROVAL OF FAMILY PLANNING BY EDUCATIONAL LEVEL, JAKARTA, 1968 AND 1975.

Reasons for disapproval of	Educational level of respondents in number of years									
	1968					1975				
	None	1-6	7-9	10+	Total	None*	1-6	7-9	10+	Total
Family Planning	(N=167)					(N=185)				
Religions	15.2	48.1	5.2	5.1	73.6	21.0	31.5	-	-	52.5
Want more children	2.4	10.4	0.6	-	13.4	5.4	-	-	-	5.4
Birth control is harmful to health	0.6	3.9	1.1	1.3	6.9	-	10.7	-	-	10.7
O t h e r s	1.2	1.3	1.1	0.6	4.2	-	15.8	-	-	15.8
Don't know the reason	0.6	1.3	-	-	1.9	10.6	5.0	-	-	15.6
Total percent	20.0	65.0	8.0	7.0	100.0	37.0	63.0	-	-	100.0
	(N=19)					(N=192)				
Religions	44.1	23.1	3.5	**	70.7	27.0	20.2	1.8	-	49.0
Want more children	4.1	3.2	1.2	-	8.5	0.5	2.7	-	-	3.2
Birth control is harmful to health	5.8	6.0	0.6	-	12.4	3.5	5.0	0.6	-	9.1
O t h e r s	1.2	1.0	0.6	-	2.8	4.0	6.8	-	**	10.8
Don't know the reason	2.8	1.7	1.1	-	5.6	16.0	10.3	0.6	-	27.0
Total percent	58.0	35.0	7.0	**	100.0	50.0	45.0	3.0	**	100.0

Source : NFPII, 1970 : Table 13.

Widodo Talogo et al, 1977 : Table 29.0.A.

Note : * = none includes informal education.

** = figure is too small.

TABLE C.6
IDEAL NUMBER OF CHILDREN DESIRED BY THE RESPONDENTS, BY SEX AND AGE
OF RESPONDENTS, JAKARTA, 1975.

Age of respondent	Number of children desired		Total per cent
	Less than 3	More than 3	
Male (N= 230)			
20-24	2.6	-	2.6
25-29	3.0	7.1	10.1
30-34	14.8	16.9	31.7
35-39	7.4	16.9	23.3
40-44	3.1	12.1	15.2
45-49	2.6	6.5	9.1
50+	2.2	4.8	7.0
Total per cent	35.7	64.3	100.0
Female (N= 390)			
20-24	1.8	2.0	3.8
25-29	6.7	13.3	20.0
30-34	12.0	18.0	30.0
35-39	10.0	12.6	22.6
40-44	4.9	9.7	14.6
45-49	2.0	3.4	5.4
50+	0.5	3.1	3.6
Total per cent	37.9	62.1	100.0

Source : Calculated from Widodo Talogo et al,1977: Table 60.17.A.

TABLE C.7
CURRENT USERS OF FAMILY PLANNING BY AGE OF RESPONDENTS, JAKARTA, 1975.

Age group	Male (N= 346)			Female (N= 586)		
	Program	Non-program	Total percent	Program	Non-program	Total percent
15-19	-	-	-	0.3	0.5	0.8
20-24	0.6	0.9	1.5	8.8	3.8	12.6
25-29	4.1	2.0	6.1	15.8	6.2	22.0
30-34	13.6	4.0	17.6	18.9	8.0	26.9
35-39	25.1	7.5	32.6	15.5	7.5	23.0
40-44	14.4	8.7	23.1	5.5	5.0	10.5
45-49	10.4	4.0	14.4	1.1	3.1	4.2
50+	3.2	1.5	4.7	-	-	-
Total percent	71.4	28.6	100.0	59.9	34.1	100.0

Source : Widodo Talogo,1977:Table 43.14.A.

TABLE C.8
CURRENT USERS OF FAMILY PLANNING BY EDUCATIONAL LEVEL OF
RESPONDENTS, JAKARTA, 1975.

Educational level in number of years	Male (N= 346)			Female (N= 588)		
	Program	Non- program	Total percent	Program	Non- program	Total percent
None*	1.7	-	1.7	5.7	5.9	11.6
1-6	26.9	5.8	32.7	21.4	11.2	32.6
7-9	17.4	9.5	26.9	17.3	7.0	24.3
10+	25.4	13.3	28.7	21.8	9.7	31.5
Total percent	71.4	28.6	100.0	66.2	33.8	100.0

Source : Widodo Talogo, 1977: Table 43.13.A.

Note : * = none includes informal education.

TABLE C.9
PERCENTAGE DISTRIBUTION OF NEW ACCEPTORS PER FISCAL YEAR
BY UNITS, JAKARTA, 1969/75 TO 1975/76.

Fiscal year	Units of Family Planning Services				Total new acceptors (100 %)
	Department of Health	Armed Forces	Other Departments	Private Agencies	
1969/70	65.4	13.4	2.1	19.1	15,848
1970/71	65.5	14.8	4.9	14.8	25,646
1971/72	63.1	19.5	5.9	11.5	34,991
1972/73	71.9	12.5	5.2	10.4	61,801
1973/74	69.4	13.6	4.6	12.4	77,981
1974/75	67.0	11.3	6.2	15.5	89,399
1975/76	70.8	9.8	5.4	14.0	107,840

Source : Census and Statistical Office, Jakarta, 1976:
Table 3.34.

APPENDIX "D"

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TABLE D.1
POPULATION OF BOGOR, TANGERANG AND BEKASI WHICH ARE INCLUDED IN THE PROJECTION OF JABOTABEK, BASED ON THE
(UNPUBLISHED) 1961 AND 1971 CENSUS DATA.

B O G O R				T A N G E R A N G				B E K A S I			
Subdistrict	1961	1971	r	Subdistrict	1961	1971	r	Subdistrict	1961	1971	r
Ciampea	57,205	70,395	2.1	Curug	39,735	53,021	2.9	S e t u	49,088	55,446	1.2
Semplak	59,870	80,126	3.0	Legok	42,235	52,596	2.2	Babelan	37,749	46,033	2.0
Ciomas	109,074	138,911	2.5	Serpong	46,740	55,480	1.7	Cibitung	54,981	64,930	1.7
Cijeruk	55,708	67,681	2.0	Ciputat	54,013	69,917	2.6	Tambun	69,551	83,874	1.9
Kedung Halang	55,444	81,835	4.0	Cileduk	56,842	75,161	2.8	Pondok Gede	55,711	65,659	1.7
C i a w i	73,134	99,363	2.6	Tangerang	91,724	120,768	2.8	Bekasi	94,072	123,264	2.7
Cileungsi	57,362	68,064	1.7	Sepatan	65,586	82,430	2.3	Cilincing	16,899	20,649	2.0
Citeureup	56,817	71,963	2.4	Batu Ceper	58,177	80,896	3.4				
Gunung Putri	30,873	35,979	1.5	Teluk Naga	54,617	67,656	2.2				
Cibinong	50,092	70,719	3.5								
Cimanggis	33,343	51,305	4.4								
D e p o k	76,874	99,342	2.6								
Sawangan	43,061	52,682	2.0								
P a r u n g	50,083	60,204	1.9								
Gunung Sindur	20,578	25,127	2.0								
Kodya Bogor*	154,092	195,882	2.4								
T o t a l	983,610	1,264,578	2.5		509,670	657,925	2.6		378,051	459,855	2.0

Source : Unpublished 1961 and 1971 Census Data.
Note : * = Municipality of Bogor.

SUMMARY OF THE ASSUMPTIONS USED IN THE PROJECTIONS OF THE POPULATION OF
JAKARTA AND JABOTABEK, 1971 - 2001.

1. The assumptions used in the projections of the population of Jakarta are the same as that used for the population of Jabotabek. They differ only in the value of the Total Fertility Rate and the Life Expectancy at Birth.
 - a). For Jakarta, the 1971 estimate of TFR = 5.1 and the Life Expectancy at Birth for females = 53.88 years and for males = 48.75 years.
 - b). For Jabotabek, the 1971 estimate of TFR = 5.7 and the Life Expectancy at Birth for females = 52.55 years and for males = 48.19 years.
2. The mortality assumptions are also the same for all series : a three-year quinquennial gain in the life expectancy at birth for the period 1971 to 1986 and 2.5 years gain per five years thereafter up to 2001.
3. Series A1 : The T.F.R. declines linearly by 30 per cent by the year 2001, the net migration remains constant at 110,000 persons yearly up to 2001.
4. Series A2 : The T.F.R. declines linearly by 30 per cent by the year 2001, the net migration increases linearly to 160,000 persons yearly in 2001.
5. Series A3 : The T.F.R. declines linearly by 30 per cent by the year 2001, the net migration decreases linearly to 60,000 persons yearly in 2001.
6. Series B1 : The T.F.R. declines linearly by 50 per cent by the year 2001, the net migration remains constant at 110,000 persons yearly up to 2001.
7. Series B2 : The T.F.R. declines linearly by 50 per cent by the year 2001, the net migration increases linearly to 160,000 persons yearly in 2001.
8. Series B3 : The T.F.R. declines linearly by 50 per cent by the year 2001, the net migration decreases linearly to 60,000 persons yearly in 2001.
9. Series C1 : The T.F.R. declines linearly by 60 per cent by the year 2001, the net migration remains constant at 110,000 persons yearly up to 2001.
10. Series C2 : The T.F.R. declines linearly by 60 per cent by the year 2001, the net migration increases linearly to 160,000 persons yearly in 2001.
11. Series C3 : The T.F.R. declines linearly by 60 per cent by the year 2001, the net migration decreases linearly to 60,000 persons yearly in 2001.
12. Series D : The T.F.R. declines linearly by 30 per cent by the year 2001, the net migration remains constant at 110,000 persons during 1971-76 and no migration thereafter up to 2001.

TABLE D.2
PROJECTED POPULATION FOR JAKARTA BY SEX AND AGE, 1971 - 2001
UNDER SERIES A1 (IN HUNDRED).

Age group	1971	1976	1981	1986	1991	1996	2001
<u>Male</u>							
0-4	4107.4	4987.5	6015.8	6866.0	7656.0	8473.0	9273.7
5-9	3076.1	3974.3	4847.0	5875.6	6746.1	7560.7	8411.6
10-14	2644.2	3154.1	4046.4	4916.8	5944.8	6817.6	7637.5
15-19	2438.3	2815.5	3323.5	4210.9	5080.7	6108.1	6985.2
20-24	2204.2	2721.8	3098.8	3606.4	4490.3	5359.8	6390.1
25-29	1998.3	2573.3	3085.9	3465.4	3975.8	4857.2	5730.3
30-34	1734.8	2353.6	2920.5	3431.5	3816.7	4330.8	5214.0
35-39	1407.6	2015.8	2622.4	3184.0	3696.0	4086.2	4605.9
40-44	1072.8	1617.0	2208.3	2804.1	3361.9	3873.7	4270.5
45-49	750.6	1200.7	1723.1	2296.6	2881.0	3432.2	3944.0
50-54	493.3	815.7	1239.8	1737.4	2289.8	2856.7	3398.2
55-59	316.6	517.6	813.3	1206.4	1673.2	2195.2	2737.3
60-64	202.7	310.2	487.2	750.4	1104.8	1529.4	2010.4
65-69	119.5	183.3	272.5	420.9	644.8	949.1	1319.4
70-74	64.9	97.0	144.9	213.4	328.9	504.9	748.5
75+	73.8	83.7	111.9	159.9	233.4	353.8	544.6
Total	22705.2	29421.2	36961.4	45145.7	53924.1	63288.4	73221.2
<u>Female</u>							
0-4	4003.0	4880.9	5875.0	6691.8	7447.3	8229.1	8993.1
5-9	3017.0	3915.1	4788.3	5785.6	6622.3	7401.1	8214.0
10-14	2681.1	3114.6	4008.0	4880.7	5880.3	6722.1	7509.4
15-19	2580.3	2905.7	3339.6	4230.2	5104.3	6105.9	6954.2
20-24	2303.7	2920.6	3248.1	3648.2	4573.9	5449.8	6456.3
25-29	1959.9	2672.2	3284.1	3616.4	4058.0	4948.2	5829.7
30-34	1622.2	2285.2	2988.1	3597.8	3936.9	4383.6	5276.6
35-39	1267.2	1874.1	2526.2	3222.1	3831.5	4176.2	4629.2
40-44	914.3	1448.0	2042.2	2684.7	3374.6	3982.1	4332.9
45-49	623.7	1026.2	1544.5	2125.4	2757.8	3439.1	4044.3
50-54	422.7	691.3	1077.7	1578.5	2144.0	2762.2	3432.6
55-59	294.1	456.6	710.3	1077.5	1557.0	2101.3	2701.0
60-64	213.1	305.4	455.0	690.0	1032.9	1482.9	1998.5
65-69	137.9	212.3	293.9	427.0	637.5	946.1	1354.7
70-74	79.2	126.1	186.8	254.5	365.7	542.1	803.1
75+	108.1	125.7	172.4	244.4	337.2	476.2	693.9
Total	22227.4	28960.1	36540.2	44790.8	53661.0	63148.1	73223.5
Grand total	44932.6	58381.3	73501.6	89936.5	107585.1	126436.5	146444.7

TABLE D.3
PROJECTED POPULATION FOR JAKARTA BY SEX AND AGE, 1971 - 2001
UNDER SERIES A2 (IN HUNDRED).

Age group	1971	1976	1981	1986	1991	1996	2001
<u>Male</u>							
0-4	4107.4	4987.5	6049.9	6996.6	7924.2	8901.7	9878.1
5-9	3076.1	3974.3	4853.7	5921.9	6893.2	7850.0	8867.2
10-14	2644.2	3154.1	4057.6	4945.9	6024.4	7008.6	7981.3
15-19	2438.3	2815.5	3343.4	4261.8	5169.1	6266.6	7274.5
20-24	2204.2	2721.8	3130.7	3689.8	4636.3	5575.2	6707.3
25-29	1998.3	2573.3	3125.9	3576.8	4178.2	5162.0	6144.7
30-34	1734.8	2353.6	2959.2	3548.1	4042.3	4685.2	5709.3
35-39	1407.6	2015.8	2653.9	3284.8	3904.7	4434.0	5113.1
40-44	1072.8	1617.0	2233.1	2884.2	3534.4	4176.8	4735.6
45-49	750.6	1200.7	1740.4	2355.0	3010.0	3668.2	4324.9
50-54	493.3	815.7	1250.9	1775.9	2378.4	3024.0	3679.5
55-59	316.6	517.6	820.1	1230.2	1729.2	2304.7	2927.7
60-64	202.7	310.2	490.8	763.5	1136.6	1593.7	2126.9
65-69	119.5	183.3	274.5	427.9	661.8	983.9	1384.1
70-74	64.9	97.0	146.0	217.1	337.5	522.4	781.2
75+	73.8	83.7	112.8	163.0	240.3	367.1	568.5
Total	22705.2	29421.2	37243.2	46042.4	55800.7	66524.2	78204.0
<u>Female</u>							
0-4	4003.0	4880.9	5908.3	6819.1	7708.3	8645.6	9579.3
5-9	3017.0	3915.1	4795.4	5832.1	6768.1	7686.2	8661.4
10-14	2681.1	3114.6	4020.9	4913.6	5965.4	6919.1	7858.3
15-19	2580.3	2905.7	3363.8	4291.4	5209.5	6287.3	7271.3
20-24	2303.7	2920.6	3283.8	3779.5	4741.9	5697.6	6816.1
25-29	1959.9	2672.2	3323.1	3729.6	4269.3	5270.8	6271.3
30-34	1622.2	2285.2	3022.6	3705.1	4152.1	4730.8	5769.5
35-39	1267.2	1874.1	2553.5	3310.5	4018.9	4497.7	5109.2
40-44	914.3	1448.0	2062.4	2751.8	3522.0	4247.4	4751.1
45-49	623.7	1026.2	1558.0	2172.0	2863.7	3637.1	4371.7
50-54	422.7	691.3	1086.9	1609.7	2216.3	2901.1	3670.3
55-59	294.1	456.6	716.1	1097.7	1603.9	2193.3	2862.7
60-64	213.1	305.4	458.7	702.7	1062.6	1541.3	2102.9
65-69	137.9	212.3	296.6	435.6	656.8	983.3	1420.5
70-74	79.2	126.1	188.3	259.9	377.5	564.5	842.0
75+	108.1	125.7	174.0	249.8	349.2	498.3	731.6
Total	22227.4	28960.1	36812.5	45660.4	55485.5	66301.2	78089.2
Grand total	44932.6	58381.3	74055.7	91702.8	111286.2	132825.4	156293.1

TABLE D.4
PROJECTED POPULATION FOR JAKARTA BY SEX AND AGE, 1971 - 2001
UNDER SERIES A3 (IN HUNDRED).

Age group	1971	1976	1981	1986	1991	1996	2001
<u>Male</u>							
0-4	4107.4	4987.5	5981.5	6734.9	7387.1	8043.6	8668.7
5-9	3076.1	3974.3	4840.4	5829.1	6598.5	7270.9	7955.4
10-14	2644.2	3154.1	4035.2	4887.7	5865.0	6626.1	7293.1
15-19	2438.3	2815.5	3303.7	4160.1	4992.2	5949.3	6695.5
20-24	2204.2	2721.8	3066.9	3523.0	4344.3	5144.4	6072.6
25-29	1998.3	2573.3	3045.8	3353.9	3773.4	4552.5	5315.9
30-34	1734.8	2353.6	2881.8	3314.9	3591.1	3976.4	4718.8
35-39	1407.6	2015.8	2590.9	3083.3	3487.3	3738.5	4098.8
40-44	1072.8	1617.0	2183.5	2723.9	3189.5	3570.6	3805.4
45-49	750.6	1200.7	1705.8	2238.3	2752.0	3196.3	3563.1
50-54	493.3	815.7	1288.7	1698.9	2201.2	2689.4	3116.8
55-59	316.6	517.6	806.5	1182.6	1617.2	2085.7	2546.9
60-64	202.7	310.2	483.6	737.3	1073.0	1465.1	1893.9
65-69	119.5	183.3	270.5	414.0	627.9	914.3	1254.7
70-74	64.9	97.0	143.8	209.7	320.3	487.3	715.7
75+	73.8	83.7	110.9	156.8	226.4	340.5	520.6
Total	22705.2	29421.2	36679.5	44248.4	52046.3	60050.8	68235.9
<u>Female</u>							
0-4	4003.0	4880.9	5841.5	6563.9	7185.7	7812.1	8406.3
5-9	3017.0	3915.1	4781.3	5738.9	6476.0	7115.4	7766.0
10-14	2681.1	3114.6	3995.0	4847.8	5795.0	6524.8	7160.0
15-19	2580.3	2905.7	3315.5	4169.1	4999.0	5924.3	6636.7
20-24	2303.7	2920.6	3212.3	3588.8	4406.0	5202.0	6096.4
25-29	1959.9	2672.2	3245.1	3503.3	3846.7	4625.6	5388.1
30-34	1622.2	2285.2	2953.6	3490.4	3721.6	4036.4	4783.7
35-39	1267.2	1874.1	2499.0	3133.7	3644.0	3854.7	4149.3
40-44	914.3	1448.0	2022.0	2617.6	3227.2	3716.9	3914.8
45-49	623.7	1026.2	1531.0	2078.8	2651.9	3241.2	3716.9
50-54	422.7	691.3	1068.6	1547.3	2071.7	2623.4	3194.9
55-59	294.1	456.6	704.5	1057.4	1510.1	2009.3	2539.2
60-64	213.1	305.4	451.3	677.3	1003.2	1424.6	1894.2
65-69	137.9	212.3	291.2	418.3	618.2	908.8	1288.9
70-74	79.2	126.1	185.2	249.2	353.9	519.8	764.1
75+	108.1	125.7	170.7	239.0	325.3	454.0	656.1
Total	22227.4	28960.1	36267.7	43920.7	51835.4	59993.3	68355.5
Grand total	44932.6	58381.3	72947.3	88169.1	103881.7	120044.1	136591.4

TABLE D.5
PROJECTED POPULATION FOR JAKARTA BY SEX AND AGE, 1971 - 2001
UNDER SERIES B1 (IN HUNDRED).

Age group	1971	1976	1981	1986	1991	1996	2001
<u>Male</u>							
0-4	4107.4	4987.5	5765.7	6241.3	6542.4	6664.9	6527.1
5-9	3076.1	3974.3	4847.0	5634.3	6139.0	6471.8	6632.4
10-14	2644.2	3154.1	4046.4	4916.8	5705.8	6215.2	6555.3
15-19	2438.3	2815.5	3323.5	4210.9	5080.7	5871.3	6387.4
20-24	2204.2	2721.8	3098.8	3606.4	4490.3	5359.8	6156.0
25-29	1998.3	2573.3	3085.9	3465.4	3975.8	4857.2	5730.3
30-34	1734.8	2353.6	2920.5	3431.5	3816.7	4330.8	5214.0
35-39	1407.6	2015.8	2622.4	3184.0	3696.0	4086.2	4605.9
40-44	1072.8	1617.0	2208.3	2804.1	3361.9	3873.7	4270.5
45-49	750.6	1200.7	1723.1	2296.6	2881.0	3432.2	3944.0
50-54	493.3	815.7	1239.8	1737.4	2289.8	2856.7	3398.2
55-59	316.6	517.6	813.3	1206.4	1673.2	2195.2	2737.3
60-64	202.7	310.2	487.2	750.4	1104.8	1529.4	2010.4
65-69	119.5	183.3	272.5	420.9	644.8	949.1	1319.4
70-74	64.9	97.0	144.9	213.4	328.9	504.9	748.5
75+	73.8	83.7	111.9	159.9	233.4	353.8	544.6
Total	22705.2	29421.2	36711.3	44279.7	51964.4	59552.2	66781.4
<u>Female</u>							
0-4	4003.0	4880.9	5630.7	6082.9	6364.1	6473.1	6329.7
5-9	3017.0	3915.1	4788.3	5548.3	6026.9	6336.0	6478.0
10-14	2681.1	3114.6	4008.0	4880.7	5644.9	6130.6	6449.3
15-19	2580.3	2905.7	3339.6	4230.2	5104.3	5872.2	6365.7
20-24	2303.7	2920.6	3248.1	3684.2	4573.9	5449.8	6224.3
25-29	1959.9	2672.2	3284.1	3616.4	4058.0	4948.2	5829.7
30-34	1622.2	2285.2	2988.1	3597.8	3936.9	4383.6	5276.6
35-39	1267.2	1874.1	2526.2	3222.1	3831.5	4176.2	4629.2
40-44	914.3	1448.0	2042.2	2684.7	3374.6	3982.1	4332.9
45-49	623.7	1026.2	1544.5	2125.4	2757.8	3439.1	4044.3
50-54	422.7	691.3	1077.7	1578.5	2144.0	2762.2	3432.6
55-59	294.1	456.6	710.3	1077.5	1557.0	2101.3	2701.0
60-64	213.1	305.4	455.0	690.0	1032.9	1482.9	1998.5
65-69	137.9	212.3	293.9	427.0	637.5	946.1	1354.7
70-74	79.2	126.1	186.8	254.5	365.7	542.1	803.1
75+	108.1	125.7	172.4	244.4	337.2	476.2	693.9
Total	22227.4	28960.1	36295.9	43944.7	51747.1	59501.8	66943.5
Grand total	44932.6	58381.3	73007.2	88224.4	103711.5	119054.0	133724.9

TABLE D.6
PROJECTED POPULATION FOR JAKARTA BY SEX AND AGE, 1971 - 2001
UNDER SERIES B2 (IN HUNDRED).

Age group	1971	1976	1981	1986	1991	1996	2001
<u>Male</u>							
0-4	4107.4	4987.5	5798.5	6360.4	6772.5	7004.9	6961.3
5-9	3076.1	3974.3	4853.7	5679.3	6274.9	6723.7	7000.8
10-14	2644.2	3154.1	4057.6	4945.9	5784.1	6395.1	6862.1
15-19	2438.3	2815.5	3343.4	4261.8	5169.1	6028.6	6665.7
20-24	2204.2	2721.8	3130.7	3689.8	4636.3	5575.2	6472.1
25-29	1998.3	2573.3	3125.9	3576.8	4178.2	5162.0	6144.7
30-34	1734.8	2353.6	2959.2	3548.1	4042.3	4685.2	5709.3
35-39	1407.6	2015.8	2653.9	3284.8	3904.7	4434.0	5113.1
40-44	1072.8	1617.0	2233.1	2884.2	3534.4	4176.8	4735.6
45-49	750.6	1200.7	1740.4	2355.0	3010.0	3668.2	4324.9
50-54	493.3	815.7	1250.9	1775.9	2378.4	3024.0	3679.5
55-59	316.6	517.6	820.1	1230.2	1729.2	2304.7	2927.7
60-64	202.7	310.2	490.8	763.5	1136.6	1593.7	2126.9
65-69	119.5	183.3	274.5	427.9	661.8	982.9	1384.1
70-74	64.9	97.0	146.0	217.1	337.5	522.4	781.2
75+	73.8	83.7	112.8	163.0	240.3	367.1	568.5
Total	22705.2	29421.2	36991.7	45163.7	53790.4	62649.6	71457.4
<u>Female</u>							
0-4	4003.0	4880.9	5662.7	6199.1	6588.0	6803.4	6750.9
5-9	3017.0	3915.1	4795.4	5593.5	6161.8	6584.6	6840.2
10-14	2681.1	3114.6	4020.9	4913.6	5728.8	6316.6	6761.9
15-19	2580.3	2905.7	3363.8	4291.4	5209.5	6052.3	6672.0
20-24	2303.7	2920.6	3283.8	3779.5	4741.9	5697.6	6582.8
25-29	1959.9	2672.2	3323.1	3729.6	4269.3	5270.8	6271.3
30-34	1622.2	2285.2	3022.6	3705.1	4152.1	4730.8	5769.5
35-39	1267.2	1874.1	2553.5	3310.5	4018.9	4497.7	5109.2
40-44	914.3	1448.0	2062.4	2751.8	3522.0	4247.4	4751.1
45-49	623.7	1026.2	1558.0	2172.0	2863.7	3637.1	4371.7
50-54	422.7	691.3	1086.9	1609.7	2216.3	2901.1	3670.3
55-59	294.1	456.6	716.1	1097.7	1603.9	2193.3	2862.7
60-64	213.1	305.4	458.7	702.7	1062.6	1541.3	2102.9
65-69	137.9	212.3	296.6	435.6	656.8	983.3	1420.5
70-74	79.2	126.1	188.3	259.9	377.5	564.5	842.0
75+	108.1	125.7	174.0	249.8	349.2	498.3	731.6
Total	22227.4	28960.1	36566.9	44801.7	53522.2	62520.1	71510.6
Grand total	44932.6	58381.3	73558.6	89965.4	107312.6	125169.7	142968.0

TABLE D.7
PROJECTED POPULATION FOR JAKARTA BY SEX AND AGE, 1971 - 2001
UNDER SERIES B3 (IN HUNDRED).

Age group	1971	1976	1981	1986	1991	1996	2001
<u>Male</u>							
0-4	4107.4	4987.5	5732.7	6121.7	6311.7	6324.3	6092.4
5-9	3076.1	3974.3	4840.4	5589.2	6002.7	6219.3	6263.6
10-14	2644.2	3154.1	4035.2	4887.7	5627.3	6034.9	6248.0
15-19	2438.3	2815.5	3303.7	4160.1	4992.2	5713.8	6108.8
20-24	2204.2	2721.8	3066.9	3523.0	4344.3	5144.4	5839.9
25-29	1998.3	2573.3	3045.8	3353.9	3773.4	4552.5	5315.9
30-34	1734.8	2353.6	2881.8	3314.9	3591.1	3976.4	4718.8
35-39	1407.6	2015.8	2590.9	3083.3	3487.3	3738.5	4098.8
40-44	1072.8	1617.0	2183.5	2723.9	3189.5	3570.6	3805.4
45-49	750.6	1200.7	1705.8	2238.3	2752.0	3196.3	3563.1
50-54	493.3	815.7	1228.7	1698.9	2201.2	2689.4	3116.8
55-59	316.6	517.6	806.5	1182.6	1617.2	2085.7	2546.9
60-64	202.7	310.2	483.6	737.3	1073.0	1465.1	1893.9
65-69	119.5	183.3	270.5	414.0	627.9	914.3	1254.7
70-74	64.9	97.0	143.8	209.7	320.3	487.3	715.7
75+	73.8	83.7	110.9	156.8	226.4	340.5	520.6
Total	22705.2	29421.2	36430.7	43395.3	50137.3	56453.3	62103.5
<u>Female</u>							
0-4	4003.0	4880.9	5598.5	5966.4	6139.6	6142.3	5908.1
5-9	3017.0	3915.1	4781.3	5502.8	5891.6	6086.8	6115.2
10-14	2681.1	3114.6	3995.0	4847.6	5560.9	5944.2	6136.3
15-19	2580.3	2905.7	3315.5	4169.1	4999.0	5691.8	6059.1
20-24	2303.7	2920.6	3212.3	3588.8	4406.0	5202.0	5865.6
25-29	1959.9	2672.2	3245.1	3503.3	3846.7	4625.6	5388.1
30-34	1622.2	2285.2	2953.6	3490.4	3721.6	4036.4	4783.7
35-39	1267.2	1874.1	2499.0	3133.7	3644.0	3854.7	4149.3
40-44	914.3	1448.0	2022.0	2617.6	3227.2	3716.9	3914.8
45-49	623.7	1026.2	1531.0	2078.8	2651.9	3241.2	3716.9
50-54	422.7	691.3	1068.6	1547.3	2071.7	2623.4	3194.9
55-59	294.1	456.6	704.5	1057.4	1510.1	2009.3	2539.2
60-64	213.1	305.4	451.3	677.3	1003.2	1424.6	1894.2
65-69	137.9	212.3	291.2	418.3	618.2	908.8	1288.9
70-74	79.2	126.1	185.2	249.2	353.9	519.8	764.1
75+	108.1	125.7	170.7	239.0	325.3	454.0	656.1
Total	22227.4	28960.1	36024.7	43087.1	49970.9	56481.9	62374.5
Grand total	44932.6	58381.3	72455.5	86482.4	100108.3	112935.2	124477.9

TABLE D.8
PROJECTED POPULATION FOR JAKARTA BY SEX AND AGE, 1971 - 2001
UNDER SERIES C1 (IN HUNDRED).

Age group	1971	1976	1981	1986	1991	1996	2001
<u>Male</u>							
0-4	4107.4	4987.5	5640.6	5936.5	5976.4	5765.2	5185.1
5-9	3076.1	3974.3	4847.0	5513.7	5842.9	5918.3	5747.2
10-14	2644.2	3154.1	4046.4	4916.8	5586.3	5921.4	6005.4
15-19	2438.3	2815.5	3323.5	4210.9	5080.7	5752.9	6095.8
20-24	2204.2	2721.8	3098.8	3606.4	4490.3	5359.8	6039.0
25-29	1998.3	2573.3	3085.9	3465.4	3975.8	4857.2	5730.3
30-34	1734.8	2353.6	2920.5	3431.5	3816.7	4330.8	5214.0
35-39	1407.6	2015.8	2622.4	3184.0	3696.0	4086.2	4605.9
40-44	1072.8	1617.0	2208.3	2804.1	3361.9	3873.7	4270.5
45-49	750.6	1200.7	1723.1	2296.6	2881.0	3432.2	3944.0
50-54	493.3	815.7	1239.8	1737.4	2289.8	2856.7	3398.2
55-59	316.6	517.6	813.3	1206.4	1673.2	2195.2	2737.3
60-64	202.7	310.2	487.2	750.4	1104.8	1529.4	2010.4
65-69	119.5	183.3	272.5	420.9	644.8	949.1	1319.4
70-74	64.9	97.0	144.9	213.4	328.9	504.9	748.5
75+	73.8	83.7	111.9	159.9	233.4	353.8	544.6
Total	22705.2	29421.2	36586.2	43854.4	50982.8	57687.0	63595.7
<u>Female</u>							
0-4	4003.0	4880.9	5508.6	5786.0	5813.6	5599.4	5028.4
5-9	3017.0	3915.1	4788.3	5429.6	5736.4	5794.7	5614.2
10-14	2681.1	3114.6	4008.0	4880.7	5527.2	5842.1	5910.6
15-19	2580.3	2905.7	3339.6	4230.2	5104.3	5755.3	6078.7
20-24	2303.7	2920.6	3248.1	3684.2	4573.9	5449.8	6108.3
25-29	1959.9	2672.2	3284.1	3616.4	4058.0	4948.2	5829.7
30-34	1622.2	2285.2	2988.1	3597.8	3936.9	4383.6	5276.6
35-39	1267.2	1874.1	2526.2	3222.1	3831.5	4176.2	4629.2
40-44	914.3	1448.0	2042.2	2684.7	3374.6	3982.1	4332.9
45-49	623.7	1026.2	1544.5	2125.4	2757.8	3439.1	4044.3
50-54	422.7	691.3	1077.7	1578.5	2144.0	2762.2	3432.6
55-59	294.1	456.6	710.3	1077.5	1557.0	2101.3	2701.0
60-64	213.1	305.4	455.0	690.0	1032.9	1482.9	1998.5
65-69	137.9	212.3	293.9	427.0	637.5	946.1	1354.7
70-74	79.2	126.1	186.8	254.5	365.7	542.1	803.1
75+	108.1	125.7	172.4	244.4	337.2	476.2	693.9
Total	22227.4	28960.1	36173.8	43529.0	50788.5	57681.4	63836.6
Grand total	44932.6	58381.3	72760.0	87383.4	101771.3	115368.3	127432.3

TABLE D.9
PROJECTED POPULATION FOR JAKARTA BY SEX AND AGE, 1971 - 2001
UNDER SERIES C2 (IN HUNDRED).

Age group	1971	1976	1981	1986	1991	1996	2001
<u>Male</u>							
0-4	4107.4	4987.5	5672.7	6050.1	6187.2	6060.9	5534.5
5-9	3076.1	3974.3	4853.7	5558.1	5973.4	6151.4	6072.0
10-14	2644.2	3154.1	4057.6	4945.9	5664.0	6095.9	6293.3
15-19	2438.3	2815.5	3343.4	4261.8	5169.1	5909.6	6368.7
20-24	2204.2	2721.8	3130.7	3689.8	4636.3	5575.2	6354.4
25-29	1998.3	2573.3	3125.9	3576.8	4178.2	5162.0	6144.7
30-34	1734.8	2353.6	2959.2	3548.1	4042.3	4685.2	5709.3
35-39	1407.6	2015.8	2653.9	3284.8	3904.7	4434.0	5113.1
40-44	1072.8	1617.0	2233.1	2884.2	3534.4	4176.8	4735.6
45-49	750.6	1200.7	1740.4	2355.0	3010.0	3668.2	4324.9
50-54	493.3	815.7	1250.9	1775.9	2378.4	3024.0	3679.5
55-59	316.6	517.6	820.1	1230.2	1729.2	2304.7	2927.7
60-64	202.7	310.2	490.8	763.5	1136.6	1593.7	2126.9
65-69	119.5	183.3	274.5	427.9	661.8	983.9	1384.1
70-74	64.9	97.0	146.0	217.1	337.5	522.4	781.2
75+	73.8	83.7	112.8	163.0	240.3	367.1	568.5
Total	22705.2	29421.2	36866.0	44732.0	52783.3	60715.0	68118.4
<u>Female</u>							
0-4	4003.0	4880.9	5539.9	5896.6	6018.6	5886.7	5367.3
5-9	3017.0	3915.1	4795.4	5474.2	5866.0	6024.8	5933.9
10-14	2681.1	3114.6	4020.9	4913.6	5610.5	6022.8	6204.7
15-19	2580.3	2905.7	3363.8	4291.4	5209.5	5934.9	6379.7
20-24	2303.7	2920.6	3283.8	3779.5	4741.9	5697.6	6466.2
25-29	1959.9	2672.2	3323.1	3729.6	4269.3	5270.8	6271.3
30-34	1622.2	2285.2	3022.6	3705.1	4152.1	4730.8	5769.5
35-39	1267.2	1874.1	2553.5	3310.5	4018.9	4497.7	5109.2
40-44	914.3	1448.0	2062.4	2751.8	3522.0	4247.4	4751.1
45-49	623.7	1026.2	1558.0	2172.0	2863.7	3637.1	4371.7
50-54	422.7	691.3	1086.9	1609.7	2216.3	2901.1	3670.3
55-59	294.1	456.6	716.1	1097.7	1603.9	2193.3	2862.7
60-64	213.1	305.4	458.7	702.7	1062.6	1541.3	2102.9
65-69	137.9	212.3	296.6	435.6	656.8	983.3	1420.5
70-74	79.2	126.1	188.3	259.9	377.5	564.5	842.0
75+	108.1	125.7	174.0	249.8	349.2	498.3	731.6
Total	22227.4	28960.1	36444.1	44380.0	52538.8	60632.1	68254.5
Grand total	44932.6	58381.3	73310.1	89112.0	105322.1	121347.1	136372.9

TABLE D.10
PROJECTED POPULATION FOR JAKARTA BY SEX AND AGE, 1971 - 2001
UNDER SERIES C3 (IN HUNDRED).

Age group	1971	1976	1981	1986	1991	1996	2001
<u>Male</u>							
0-4	4107.4	4987.5	5608.3	5822.6	5765.2	5469.1	4835.4
5-9	3076.1	3974.3	4840.4	5469.2	5712.1	5684.9	5422.1
10-14	2644.2	3154.1	4035.2	4887.7	5508.4	5746.5	5717.0
15-19	2438.3	2815.5	3303.7	4160.1	4992.2	5596.1	5822.6
20-24	2204.2	2721.8	3066.9	3523.0	4344.3	5144.4	5723.5
25-29	1998.3	2573.3	3045.8	3353.9	3773.4	4552.5	5315.9
30-34	1734.8	2353.6	2881.8	3314.9	3591.1	3976.4	4718.8
35-39	1407.6	2015.8	2590.9	3083.3	3487.3	3738.5	4098.8
40-44	1072.8	1617.0	2183.5	2723.9	3189.5	3570.6	3805.4
45-49	750.6	1200.7	1705.8	2238.3	2752.0	3196.3	3563.1
50-54	493.3	815.7	1228.7	1698.9	2201.2	2689.4	3116.8
55-59	316.6	517.6	806.5	1182.6	1617.2	2085.7	2546.9
60-64	202.7	310.2	483.6	737.3	1073.0	1465.1	1893.9
65-69	119.5	183.3	270.5	414.0	627.9	914.3	1254.7
70-74	64.9	97.0	143.8	209.7	320.3	487.3	715.7
75+	73.8	83.7	110.9	156.8	226.4	340.5	520.6
Total	22705.2	29421.2	36306.3	42976.2	49181.3	54657.5	59071.2
<u>Female</u>							
0-4	4003.0	4880.8	5477.0	5674.9	5608.1	5311.7	4689.1
5-9	3017.0	3915.1	4781.3	5384.8	5606.5	5564.1	5294.1
10-14	2681.1	3114.6	3995.0	4847.8	5443.8	5661.0	5616.0
15-19	2580.3	2905.7	3315.5	4169.1	4999.0	5575.6	5777.3
20-24	2303.7	2920.6	3212.3	3588.8	4406.0	5202.0	5750.3
25-29	1959.9	2672.2	3245.1	3503.3	3846.7	4625.6	5388.1
30-34	1622.2	2285.2	2953.6	3490.4	3721.6	4036.4	4783.7
35-39	1267.2	1874.1	2499.0	3133.7	3644.0	3854.7	4149.3
40-44	914.3	1448.0	2022.0	2617.6	3227.2	3716.9	3914.8
45-49	623.7	1026.2	1531.0	2078.8	2651.9	3241.2	3716.9
50-54	422.7	691.3	1068.6	1547.3	2071.7	2623.4	3194.9
55-59	294.1	456.6	704.5	1057.4	1510.1	2009.3	2539.2
60-64	213.1	305.4	451.3	677.3	1003.2	1424.6	1894.2
65-69	137.9	212.3	291.2	418.3	618.2	908.8	1288.9
70-74	79.2	126.1	185.2	249.2	353.9	519.8	764.1
75+	108.1	125.7	170.7	239.0	325.3	454.0	656.1
Total	22227.4	28960.1	35903.3	42677.6	49037.2	54729.2	59417.0
Grand total	44932.6	58381.3	72209.6	85653.8	98218.6	109386.7	118488.3

TABLE D.11
PROJECTED POPULATION FOR JAKARTA BY SEX AND AGE, 1971 - 2001
UNDER SERIES D (IN HUNDRED).

Age group	1971	1976	1981	1986	1991	1996	2001
<u>Male</u>							
0-4	4107.4	4987.5	6005.3	6479.1	6622.0	6966.5	7452.1
5-9	3076.1	3974.3	4838.0	5791.9	6296.3	6475.6	6854.9
10-14	2644.2	3154.1	4046.7	4784.2	5738.0	6247.3	6435.1
15-19	2438.3	2815.5	3323.5	3992.6	4730.6	5684.1	6200.0
20-24	2204.2	2721.8	3098.8	3254.8	3923.5	4662.1	5617.9
25-29	1998.3	2573.3	3085.9	3023.5	3188.7	3856.7	4598.0
30-34	1734.8	2353.6	2920.5	3005.0	2957.2	3130.0	3799.4
35-39	1407.6	2015.8	2622.4	2863.5	2931.6	2895.7	3076.2
40-44	1072.8	1617.0	2208.3	2530.7	2750.8	2854.8	2831.3
45-49	750.6	1200.7	1723.1	2105.9	2427.5	2651.5	2765.0
50-54	493.3	815.7	1239.8	1614.7	1986.8	2303.1	2529.6
55-59	316.6	517.6	813.3	1131.2	1484.9	1839.0	2145.5
60-64	202.7	310.2	487.2	711.0	998.8	1322.0	1650.8
65-69	119.5	183.3	272.5	398.9	589.9	837.8	1121.1
70-74	64.9	97.0	144.9	201.0	299.8	450.3	649.5
75+	73.8	83.7	111.9	149.4	209.2	311.0	473.7
Total	22705.2	29421.2	36942.3	42010.3	47135.6	52487.5	58200.1
<u>Female</u>							
0-4	4003.0	4880.8	5864.7	6314.5	6441.3	6765.7	7226.4
5-9	3017.0	3915.1	4779.4	5697.7	6175.2	6333.6	6688.8
10-14	2681.1	3114.6	4008.3	4729.2	5650.3	6135.0	6303.8
15-19	2580.3	2905.7	3339.6	3964.7	4687.9	5611.1	6103.4
20-24	2303.7	2920.6	3248.1	3290.4	3917.2	4642.6	5569.9
25-29	1959.9	2672.2	3284.1	3186.9	3240.0	3868.7	4598.6
30-34	1622.2	2285.2	2988.1	3217.2	3133.3	3195.1	3826.5
35-39	1267.2	1874.1	2526.2	2921.6	3157.0	3083.9	3154.1
40-44	914.3	1448.0	2042.2	2461.7	2857.4	3096.9	3034.2
45-49	623.7	1026.2	1544.5	1976.6	2392.1	2785.6	3028.9
50-54	422.7	691.3	1077.7	1478.0	1900.3	2308.4	2698.4
55-59	294.1	456.6	710.3	1013.7	1398.0	1805.6	2203.5
60-64	213.1	305.4	455.0	649.4	933.4	1294.8	1682.1
65-69	137.9	212.3	293.9	397.2	571.8	827.8	1156.5
70-74	79.2	126.1	186.8	237.0	323.8	470.4	687.1
75+	108.1	125.7	172.4	225.8	295.8	403.5	580.3
Total	22227.4	28960.1	36521.4	41761.8	47074.7	52628.7	58542.6
Grand total	44932.6	58381.3	73463.6	83772.1	94210.3	105116.2	116742.7

TABLE D.12
PROJECTED PRE-SCHOOL, PRIMARY SCHOOL AND SECONDARY SCHOOL AGE
POPULATION, JAKARTA, 1971 - 2001 (IN THOUSAND).

Assumptions and age group	1971	1976	1981	1986	1991	1996	2001
<u>Series A2.</u>	<u>High Projection</u>						
0 - 5	943.0	1159.3	1403.1	1632.3	1850.0	2079.1	2310.5
6 - 12	821.9	1005.3	1260.9	1535.2	1819.2	2082.3	2356.5
13 - 18	613.2	696.9	846.0	1069.8	1298.7	1554.8	1928.7
<u>Series A3</u>	<u>Medium Projection</u>						
0 - 5	943.0	1159.3	1388.8	1575.4	1729.3	1883.3	2032.0
6 - 12	821.9	1005.3	1256.6	1514.9	1754.5	1944.7	2129.1
13 - 18	613.2	696.9	837.0	1042.5	1257.1	1473.3	1639.3
<u>Series B1</u>							
0 - 5	943.0	1159.3	1345.0	1465.6	1539.0	1572.4	1546.9
6 - 12	821.9	1005.3	1260.8	1490.0	1661.8	1769.2	1832.5
13 - 18	613.2	696.9	841.2	1061.0	1265.4	1433.7	1540.1
<u>Series C2</u>							
0 - 5	943.0	1159.3	1326.2	1422.9	1460.0	1437.1	1323.5
6 - 12	821.9	1005.3	1264.0	1482.3	1630.2	1704.8	1713.2
13 - 18	613.2	696.9	845.5	1073.4	1279.9	1433.8	1522.2
<u>Series C3</u>	<u>Low Projection</u>						
0 - 5	943.0	1159.3	1312.6	1373.0	1364.0	1299.9	1159.1
6 - 12	821.9	1005.3	1259.4	1462.4	1570.7	1588.0	1529.9
13 - 18	613.2	696.9	836.4	1050.8	1238.5	1354.7	1155.8

TABLE D.13
PROJECTED WORKING AGE POPULATION BY SEX, JAKARTA, 1971 - 2001.
(IN THOUSAND).

Assumptions and sex	1971	1976	1981	1986	1991	1996	2001
<u>Series A2</u>	<u>High Projection</u>						
Male	1261.9	1694.1	2174.9	2737.0	3371.9	4089.0	4874.3
Female	1220.1	1658.5	2142.9	2715.0	3366.0	4100.4	4899.6
Total	2482.0	3352.7	4317.7	5452.0	6737.9	8189.5	9773.9
<u>Series A3</u>	<u>Medium Projection</u>						
Male	1261.9	1694.1	2129.7	2601.6	3102.1	3636.8	4182.8
Female	1220.1	1658.5	2100.3	2586.4	3108.1	3665.8	4483.5
Total	2482.0	3352.7	4230.0	5188.0	6210.3	7302.6	8414.2
<u>Series B1</u>							
Male	1261.9	1694.1	2152.3	2669.3	3237.0	3839.3	4445.4
Female	1220.1	1658.5	2121.6	2650.7	3237.1	3859.8	4483.5
Total	2482.0	3352.7	4273.9	5320.0	6474.1	7699.0	8928.9
<u>Series C2</u>							
Male	1261.9	1694.1	2174.9	2737.0	3371.9	4053.3	4748.5
Female	1220.1	1658.5	2142.9	2715.0	3366.0	4065.2	4775.4
Total	2482.0	3352.7	4317.7	5452.0	6737.9	8118.5	9523.9
<u>Series C3</u>	<u>Low Projection</u>						
Male	1261.9	1694.1	2129.7	2601.6	3102.1	3601.5	4060.6
Female	1220.1	1658.5	2100.3	2586.4	3108.1	3631.0	4110.9
Total	2482.0	3352.7	4230.0	5188.0	6210.3	7232.5	8171.5

TABLE D.14
PROJECTED MID-YEAR TOTAL POPULATION BY BROAD AGE GROUP
FOR JABOTABEK, 1971-2001 (IN THOUSAND).

Assumptions and age group	1971	1976	1981	1986	1991	1996	2001
High Projection							
Series A2							
0-14	2992.8	3620.2	4353.8	5213.1	6009.0	6817.9	7642.2
15-29	2036.8	2435.1	2859.9	3302.5	3964.2	4740.8	5648.8
30-44	1242.1	1667.3	2113.3	2568.1	3024.0	3513.1	4027.0
45-59	456.6	698.7	1015.6	1391.3	1809.3	2257.0	2723.1
60-74	130.0	184.4	265.9	393.3	582.0	830.6	1129.2
75+	29.5	32.1	42.9	57.7	80.6	117.4	174.7
T o t a l	6887.7	8637.8	10651.5	12926.0	15469.1	18276.8	21345.0
Medium Projection							
Series A3							
0-14	2992.8	3620.2	4332.3	5128.9	5806.2	6443.3	7057.4
15-29	2036.8	2435.1	2821.8	3199.5	3780.1	4454.6	5219.9
30-44	1242.1	1667.3	2077.9	2456.3	2793.2	3126.4	3456.8
45-59	456.6	698.7	1002.9	1347.8	1710.1	2069.8	2409.2
60-74	130.0	184.4	263.0	383.2	558.5	784.0	1045.4
75+	29.5	32.1	42.4	56.0	76.9	110.4	162.5
T o t a l	6887.7	8637.8	10540.4	12571.7	14725.0	16988.4	19351.1
Series B1							
0-14	2992.8	3620.2	4268.8	4918.9	5335.4	5612.2	5715.0
15-29	2036.8	2435.1	2840.8	3251.0	3872.3	4527.3	5191.8
30-44	1242.1	1667.3	2095.6	2512.2	2908.6	3319.8	3741.9
45-59	456.6	698.7	1009.3	1369.6	1759.7	2163.4	2566.2
60-74	130.0	184.4	264.5	388.2	570.3	807.3	1087.3
75+	29.5	32.1	42.7	56.9	78.7	113.9	168.6
T o t a l	6887.7	8637.8	10521.6	12496.7	14525.0	16543.9	18470.8
Series C2							
0-14	2992.8	3620.2	4241.8	4830.5	5134.6	5248.9	5108.1
15-29	2036.8	2435.1	2859.9	3302.5	3964.4	4634.7	5280.8
30-44	1242.1	1667.3	2113.3	2568.1	3024.0	3513.1	4027.0
45-59	456.6	698.7	1015.6	1391.3	1809.3	2257.0	2723.1
60-74	130.0	184.4	265.9	393.3	582.0	830.6	1129.2
75+	29.5	32.1	42.9	57.7	80.6	117.4	174.7
T o t a l	6887.7	8637.8	10539.4	12543.4	14594.8	16601.6	18442.8
Low Projection							
Series C3							
0-14	2992.8	3620.2	4221.1	4754.0	4962.9	4958.8	4707.5
15-29	2036.8	2435.1	2821.8	3199.5	3780.3	4349.2	4859.3
30-44	1242.1	1667.3	2077.9	2456.3	2793.2	3126.4	3456.8
45-59	456.6	698.7	1002.9	1347.8	1710.1	2069.8	2409.2
60-74	130.0	184.4	263.0	383.2	558.5	784.0	1045.4
75+	29.5	32.1	42.4	56.0	76.9	110.4	162.5
T o t a l	6887.7	8637.8	10429.2	12196.8	13881.8	15398.6	16640.6

TABLE D.15

PROJECTED YEARLY RATES PER THOUSAND POPULATION, JABOTABEK, 1971 - 2001.

Series and Rates	1971-76	1976-81	1981-86	1986-91	1991-96	1996-2001
<u>High Projection</u>						
<u>Series A2</u>						
Birth rate	45.2	41.8	38.4	35.3	32.7	30.3
Death rate	14.1	12.4	10.7	9.3	8.3	7.3
Natural increase	31.1	29.5	27.7	26.1	24.5	23.0
Net migration rate	14.3	12.5	11.1	9.9	8.9	8.1
Population increase	45.4	42.0	38.8	36.0	33.4	31.1
G.F.R.	189.7	177.9	166.7	155.7	144.5	133.3
G.R.R.*	2.8	2.6	2.4	2.3	2.1	1.9
N.R.R.*	2.1	2.0	2.0	1.9	1.8	1.7
<u>Medium Projection</u>						
<u>Series A3</u>						
Birth rate	45.2	41.7	38.2	35.0	32.4	30.1
Death rate	14.1	12.3	10.7	9.2	8.2	7.3
Natural increase	31.1	29.4	27.5	25.8	24.2	22.8
Net migration rate	14.3	10.5	7.8	5.9	4.4	3.3
Population increase	45.4	39.9	35.3	31.7	28.6	26.1
G.F.R.	189.7	177.9	166.7	155.8	144.8	133.8
G.R.R.*	2.8	2.6	2.4	2.3	2.1	1.9
N.R.R.*	2.1	2.0	2.0	1.9	1.8	1.7
<u>Series B1</u>						
Birth rate	45.2	40.2	35.3	30.9	27.0	23.0
Death rate	14.1	12.2	10.4	9.0	8.0	7.2
Natural increase	31.1	28.0	24.9	21.9	19.0	15.8
Net migration rate	14.3	11.5	9.6	8.2	7.1	6.3
Population increase	45.4	39.5	34.4	30.1	26.0	22.0
G.F.R.	189.8	170.4	151.6	133.0	114.2	95.5
G.R.R.*	2.8	2.5	2.2	1.9	1.7	1.4
N.R.R.*	2.1	2.0	1.8	1.6	1.5	1.2
<u>Series C2</u>						
Birth rate	45.2	39.4	33.9	28.8	24.1	19.1
Death rate	14.1	12.1	10.3	8.9	7.9	7.2
Natural increase	31.1	27.3	23.6	20.0	16.1	11.9
Net migration rate	14.3	12.6	11.3	10.3	9.6	9.1
Population increase	45.4	39.9	34.9	30.3	25.8	21.0
G.F.R.	189.8	166.6	144.0	121.5	98.9	76.2
G.R.R.*	2.8	2.4	2.1	1.8	1.4	1.1
N.R.R.*	2.1	1.9	1.7	1.5	1.3	1.0
<u>Low Projection</u>						
<u>Series C3</u>						
Birth rate	45.2	39.3	33.7	28.6	23.8	19.0
Death rate	14.1	12.1	10.3	8.8	7.9	7.2
Natural increase	31.1	27.2	23.4	19.8	16.0	11.8
Net migration rate	14.3	10.5	8.0	6.1	4.8	3.7
Population increase	45.4	37.7	31.3	25.9	20.8	15.5
G.F.R.	189.8	166.6	144.0	121.6	99.1	76.5
G.R.R.*	2.8	2.4	2.1	1.8	1.4	1.1
N.R.R.*	2.1	1.9	1.7	1.5	1.3	1.0

Note : * G.R.R. and N.R.R. = per women

G.f.r. = birth per 100 women aged 15-44 years.