DEMOCRATIC RESEARCH IN INDONESIA:
A REVIEW
GRAEME HUGO
DEMOGRAPHIC RESEARCH IN
INDONESIA:
A REVIEW

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Figure 1. Provinces of the Republic of Indonesia
### Glossary and Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tr>
<td>ani-ani</td>
<td>knife for cutting rice stalks.</td>
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<tr>
<td>BKKBN</td>
<td>Baden Ko-ordinasi Keluarga Berencana Nasional - National Family Planning Co-ordinating Board.</td>
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<tr>
<td>CBR</td>
<td>Crude Birth Rate.</td>
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<tr>
<td>CDR</td>
<td>Crude Death Rate.</td>
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<tr>
<td>Kabupaten</td>
<td>regency (administrative unit).</td>
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<tr>
<td>Kecamatan</td>
<td>sub-district (administrative unit).</td>
</tr>
<tr>
<td>KAP Survey</td>
<td>Knowledge, Attitude and Practice of Family Planning Surveys.</td>
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<tr>
<td>Lembaga Demografi</td>
<td>Demographic Institute, Faculty of Economics, University of Indonesia, Jakarta.</td>
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<tr>
<td>LEKNAS</td>
<td>Lembaga Penelitian Ekonomi dan Kemasyarakatan National - National Institute of Economic and Social Research, Jakarta.</td>
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<tr>
<td>Manteri Statistik</td>
<td>kecamatan official responsible for collection of statistics from villages.</td>
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<tr>
<td>Merantau</td>
<td>literally means to leave one's homeland - especially refers to the mobility of the Minangkabau of West Sumatra.</td>
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<tr>
<td>Sawah</td>
<td>wet rice field.</td>
</tr>
<tr>
<td>Skripsi</td>
<td>dissertation.</td>
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<tr>
<td>TFR</td>
<td>Total Fertility Rate.</td>
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INTRODUCTION

As is the case in much of the Third World, demographers carrying out research in Indonesia are confronted with the twin dilemmas of a lack of statistics for some of the most basic demographic measures, and the existence of errors of unknown size and direction in much of what is available. Accordingly, the demographer's expertise must be brought to bear not only on the analysis and interpretation of available statistics, but also on what Keyfitz (1964, p.1) calls the "ascertainment of the facts" as a basis for research. The logistic problems that confound census and survey takers in underdeveloped countries are exacerbated in Indonesia by its huge population (the fifth largest country in the world—119 million in 1971), which is distributed unevenly through the world's largest island complex and between more than 300 distinct ethno-linguistic groups.

President Suharto's "New Order" regime has placed heavy stress on economic development. The formulation of the First and Second Five Year Development Plans, together with the massive penetration of international aid and development agencies, and "joint-venture" enterprises with foreign companies, has created an urgent and pressing demand for information concerning the size, distribution and composition of the population of Indonesia and its various regions. Demographers are being called upon to ascertain the rates of change in these, and more importantly to give reasons for such changes and their future implications. The result has been an unprecedented burgeoning of data collection and research activity.

DEMOGRAPHIC RESEARCH INSTITUTIONS IN INDONESIA

The collection of demographic data on a national scale is chiefly in the hands of the Central Bureau of Statistics. Through its central office in Jakarta and regional offices in the 26 Provinces (Figure 1) it conducts national population (as well as agricultural and industrial) censuses, sample surveys and, since 1968, collects regional registration statistics. In addition, each kabupaten (regency)\(^1\) has a census and statistics office to collect information for provincial offices as well as for the kabupaten's planning and other departments. Such data usually emanate from the Manteri Statistik, an official in each kecamatan (sub-district) who collects statistics from the 15 or so desa villages) within the kecamatan. In each village, an administrative officer is required to maintain a series of registers.

\(^1\) An outline of the administrative hierarchy is given in Appendix 1.
The Central Bureau of Statistics has a research section. There is also a Demographic Section of the National Institute of Social and Economic Research (LEKNAS) whose research is oriented to "issues that arise in economic planning, and in administrative activities of the several ministries" (Keyfitz, 1964, p.2). The Institute's research has a social demographic bias, the major current project being a study entitled Internal Migration and Urbanization. Demographic research is also undertaken within the National Planning Agency (BAPPENAS) although it usually seeks information from more specialized groups such as LEKNAS or the Demographic Institute of the Faculty of Economics, University of Indonesia.

The Demographic Institute (hereafter referred to as Lembaga Demografi) is a highly productive centre of demographic research and training. Two groups of "lecturer level" academic staff from universities throughout Indonesia have undergone demographic training at the Institute and returned to their provinces to teach demography or population studies courses and conduct research projects (Iskander and Jones, 1974). There is a stress on formal demography at the Institute with the major recent research project being the National Fertility and Mortality Survey. The Institute of Population Studies at Gadjah Mada University, Yogyakarta, is principally concerned with research. Established in 1973 by Dr. Maari Singarimbun, it has undertaken an energetic programme of research - mainly in the field of social demography (particularly in fertility and family planning), and also regular seminars, translation and publication.

Population Studies or Demographic Institutes are planned for other major centres in Indonesia, with one being established in Medan. There are, however, courses with substantive demographic content being taught in many other universities and teachers' colleges throughout Indonesia.¹ In these institutions both academics and senior students are engaged in population research. To give some impression of this type of research a selected list of skripsi (dissertations) recently submitted to departments of economics, geography, agriculture and planology in various tertiary institutions in Bandung, West Java, is included as Appendix 2.

Various central government departments and instrumentalities also undertake demographic research or commission others to do it on their behalf. Of major interest here is the research being sponsored by the National Family Planning Board (BKKBKN)² and the Directorate General of Transmigration. There is also a

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¹ Some of the major problems faced by Indonesian universities in general and suggestions concerning the contribution that foreign aid can make in helping attack them are outlined by McCawley (1974).

² See BKKBKN (1972, 1973) for a list of publications, and Surjaningrat (1974) for recent research projects completed and commissioned.
substantial number of foreign demographic experts in Indonesia with United
Nations organizations, the World Bank, Ford and Rockefeller Foundations and
other groups. Many of these experts are attached to government departments or
universities.

Increasing numbers of Indonesian graduates are undergoing demographic training
overseas, particularly in the United States. Such training is extremely
valuable so long as the training received is relevant to the Indonesian situation.
Many able graduates are, however, prevented from undertaking such training by
their failure to satisfy obligatory English language prerequisites.

DEMOGRAPHIC DATA AND PUBLICATIONS

The writer is convinced that demographers can make a major contribution in
Indonesia by adopting flexible and innovatory methods of data collection and
analysis in their striving toward an understanding of population change. This
often requires in the short term a modification, if not an abandonment, of
orthodox ideas of the universality of findings, completeness of coverage and
precision. It involves going beyond the central repositories of statistical
information in Jakarta — for example there is a substantial amount of demograph-
ic information at the village level which is not being utilized at present.
Fertility, mortality and migration are socio-cultural as well as demographic
phenomena and to be understood must be studied in meaningful socio-cultural
contexts. Frequently these are not the nation or province, but the ethnic
group, the community, the kinship group, the family or the individual.

The Censuses

Population counts of uneven reliability pre-date European colonial penetration
in various parts of Indonesia. The only comprehensive enumerations undertaken
before Independence were the 1930 and to a lesser extent the 1920 counts.
Unfortunately at the 1930 census complete age data were not collected for the
majority of indigenous groups.

"Because of the uncertain knowledge the Natives have of their exact
age some criteria had to be fixed, in the first age group were
included normal children not yet able to walk, in the second group
all other persons not yet fully grown and in the third group all
adults. As a rule it was stated that a girl is fully grown when
marriageable, and a boy when able to work" (Volkstelling I, 1933,
p.94).

Hence it is not possible to make any detailed age-cohort analysis for the period
1930-1961, the latter being the first census undertaken by the Republic of
Indonesia.
The utility of the 1961 census has been severely limited because the processing of returns was halted by financial stringencies imposed during the latter years of the Sukarno government. The original plan was for 10 percent of rural and all urban returns to be processed in Jakarta by the Central Bureau of Statistics and the remainder by provincial officers. The central processing was halted after only a one percent sample of all returns, and complete returns for Jakarta, East Java, Yogyakarta, and parts of Central Java had been completed. Hence age-cohort analysis between the 1961 and 1971 censuses is also very limited. Moreover, the accuracy of the one percent sample statistics has been recently shown to be questionable.\(^1\)

The 1971 census was conducted in two stages. A complete enumeration collected details of age, sex and citizenship and a sample of respondents gave, in addition, relationship to household head, marital status, religion, language, ability to read and write, education level, field of education, school attendance, place of birth, residence in other provinces and total years lived in present province. For all ever-married women information was collected concerning the number of children born alive and the number still living. For all persons aged 10 years and over, labour force information was collected. The overall sampling fraction was 3.81 percent, but varied from urban to rural areas and with the total population of a region.

A series of tables (Series C) based on a 10 percent sample of the overall sample has been published along with detailed volumes (Series E) for 10 of the Provinces.\(^2\) Most tabulations are only provided at the province level, but are broken down into urban and rural components.

**National Social and Economic Surveys (SUSENAS)**

In the past decade there have been four rounds of the SUSENAS (1963-4, 1964-5, 1967, 1969). The first and third rounds were restricted to Java while the second covered all Indonesia except East Nusatenggara, Maluku and Irian. Published information from the surveys is as follows:

- 1963-4 Marital status, education, consumption (expenditure).
- 1964-5 Fertility, mortality, household size, internal migration, education, labour force, consumption (expenditure).

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1. Comparisons made at Lembaga Demografi between the one percent sample age distribution for Yogyakarta and that from the complete urban and 10 percent of rural returns revealed wide differences (Personal Communication from Dr. P.F. McDonald).

2. There are some very marked discrepancies between Series C and Series F for unemployment (Jones, 1974) and some other characteristics, due to differences in imputation procedures as well as the small numbers in several provinces for the Series C tabulations.
1967 Marital status, household size, education, religion, labour force, internal migration, consumption (expenditure), mortality, fertility, income.

1969 Marital status, household size, labour force.

Tables are usually broken down by age, sex, urban/rural strata and by province. The second and third rounds are of most interest to demographers. The second round had a sampling fraction of 1/1000 but the coverage for Jakarta was so faulty that returns were not processed (McNicoll, 1968, p.31). In the 1967 round the approximate sampling fraction in urban areas was 1/300, and 1/750 in rural districts. While the accuracy of the SUSenas data has been questioned it does constitute one of the few sources of demographic information for large parts of Indonesia during the 1960's.

Other Surveys

There is a growing number of large-scale surveys devoted to the collection of information of interest to demographers. The Fertility-Mortality study undertaken by Lembaga Demografi in 1972-73 is of major importance. The survey covered the topics of fertility, mortality, marriage and marriage dissolution, and knowledge, attitudes and practice of family planning, and more than 54,000 households were interviewed in Java, Bali, Sumatra, and Sulawesi. Lembaga Demografi has also been involved in a survey of unemployment in Indonesia's three largest cities (Jakarta, Surabaya and Bandung), the results of which have not yet been released. Leknas has conducted a survey into employment, urbanization and migration which covered 32,000 migrants in urban and rural areas of Java, Sumatra and Sulawesi. Another agency which collects demographic information on a more restricted scale is the Agro-Economic Survey. In each rice season since 1968/9 a sample of farmers in 37 villages in each of Indonesia's major rice producing areas has been interviewed. In addition to this longitudinal data, a partial census of each of the 37 villages was carried out in 1971. This source has been little utilised by demographers.

Registration Data

The maintenance of population registers has a long history in Java. At present registers of births, deaths, and migration (both permanent and temporary) are maintained at the lowest level administrative units (see Appendix 1). Every month aggregate figures of each component of population change are collected from the villages by the Manteri Statistik who in turn forward them to the kabupaten Census and Statistics offices. These statistics are assembled centrally, published and used to make intercensal population estimates for kecamatan.

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1 Registers of marriage and divorce are maintained also.
The most casual perusal of aggregate statistics of vital and migration events shows that they are highly unreliable. However, during the course of field-work in West Java the writer found that in a surprisingly large number of villages the registers are well maintained and that much information is lost as it passes up the hierarchy. It would be possible to identify villages in which there is a long tradition of efficient administration and of diligent registering of vital events.¹ Information could be collected from these villages to furnish accurate local fertility, mortality and migration data which at present are completely lacking. At least for some key areas, it would be possible to establish a sample of registration villages from which data could be aggregated to derive regional vital rates. The vital and population movement registers offer considerable scope for innovative data collection, but as yet have been little used by demographers.

Publications

Much of the material of interest to the demographer in Indonesia is in the virtually inaccessible form of cyclostyled kabupaten, provincial and central government publications or reports. The most useful and comprehensive bibliography of works published since 1930 is that of Sinarbumbu (1974). Current publications are best detected through Population Index, the Indonesian Acquisitions Lists of the National Library of Australia, the Central Bureau of Statistics' annual publication list, the "publications received" section of The Bulletin of Indonesian Economic Studies, the Sumatra Research Bulletin, and Majalah Demografi Indonesia, the new Indonesian demographic journal.

HISTORICAL DEMOGRAPHY

The bulk of research effort in this field has been devoted to Java because of its substantial nineteenth century population growth and because most of the available statistics pertain to it. A notable exception is the work of Castles (1974) who has made enterprising use of statistics collected by Christian Churches, estimates of travellers and early officials and Toba Batak genealogies to trace the population history of North Sumatra. He has also, like Keyfitz (1953) and Widjojo (1970), used the 1930 census data on three "age categories" to estimate Crude Birth Rates. These show the existence of wide fertility differentials between the inhabitants of Java and particular groups in Sumatra. He found that the Toba Batak areas of North Sumatra recorded a CBR of 63.2 in the late 1920's. Castles correctly points out that even if the rates are too high the regional ethnic variations which they reveal must be taken seriously.

¹ At present a special effort is being made to secure completeness of registration in Kabupaten Bekasi (West Java), a region already known to have one of the most accurate registration records in Indonesia.
Historical demographers have been attracted to the study of Java's population growth because "no other Asian or even European country has experienced so rapid a population growth over such a long period" (Peper, 1970, p.71). If Raffles' "census" of 1815 is taken as accurate, giving Java a population of 4.6 million, Java's average annual population growth rate over the 1815-1905 period was 2.1 percent. However, several writers have demonstrated that the 19th Century population counts of Java were severe under-enumerations partly because of their connections with compulsory labour or tax schemes (Breman, 1930; Peper, 1970; Widjojo, 1970). Peper suggests that a growth rate of 1.2 percent is more likely and Breman 1.6 percent. The available sources have not yet been exhausted and there are still many possibilities for research to throw more light on population growth—particularly at a regional level.

The explanation of these growth patterns has also been a fruitful area of research. Several authors stressed the importance of reduction in mortality due to the pax Neerlandica (White, 1973a), and the elimination of local famines by improvements in transport and public health. White has argued that the increase in population can be interpreted as a demographic response to demand for labour within the family, a demand created by the need to intensify subsistence production in the face of colonial demands on land, labour and produce.

POPULATION GROWTH AND DISTRIBUTION

The more accurate twentieth century population counts show compound interest growth rates for Java of one percent for 1905-20 (lowered by the impact of the 1918 influenza epidemic) and 1.8 percent for 1920-30. Between 1930 and 1961 Indonesia suffered the Depression, the Japanese occupation, and the disruption of the early Independence Period, but maintained an average annual growth rate of 1.5 percent. Between 1961 and 1971 this rate was 2.1 percent.

Early nineteenth century commentators regarded Java as "over populated" yet it has managed to absorb at least 10 times the population of that time - most of them in agriculture. The seminal work exploring the explanation of this phenomenon is Geertz's (1963) Agricultural Involution. He shows that increases in population were absorbed only partly by extending the area under sawah (irrigated wet rice cultivation). Increases were also absorbed by economic and social adaptation. Firstly the productivity of sawah could be increased almost indefinitely by economic adaptation via increased labour inputs directed to improvement of water regulation, cultivation techniques, fertilization and seed-strain improvement. Secondly there were social adaptations via the complex of inter-group relations best summed up as "shared poverty".

\[1\] For a summary of population growth in Java see Manderson (1974).
Geertz's pioneering work, showing how Javanese society has made social and economic changes to adapt to increasing pressure of rural population on agricultural land, has tended to divert attention away from the demographic responses to this pressure which have occurred and are still occurring. Continuing research, significantly at the community level, is beginning to show that the limitation of family size, and of population movement (both permanent and temporary), are by no means uncommon responses to ecological pressure in Java.

These demographic responses are perhaps more significant when it is considered that recent changes in rural Java appear to be working in the opposite direction to the involution model. While probably increasing productivity, the changes are decreasing work opportunities and perhaps destroying the mechanism whereby what wealth is available in the village is shared with the village poor. The replacement of the ani-ani (a small blade used to harvest rice stalk by stalk) with the sickle in areas growing the new high yielding rice varieties, the mechanization of rice milling, contract harvesting of crops, the replacement of sawah in some areas with less labour intensive sugar crops, and growing landlessness, are the main such changes which are being observed in Java today. The extent of these changes is not yet known but a reduction of opportunities to subsist in the village will almost certainly lead to the alternative demographic responses becoming more important.

The oft-mentioned division between "Inner" (Java - Bali - Lombok) and "Outer" Indonesia (Sumatra, Kalimantan, Sulawesi and the other islands) is based largely on Java's greater total population and higher population density — differences that can be readily seen from Table 1. However, it can also be seen from the Table that there is a noticeable difference in growth rates, especially between Java and Sumatra. The levels and causes of these rates, the combined result of age structure, fertility, mortality and migration, are the focus of the bulk of demographic concern and research in Indonesia.

Table 1. Selected Major Regions of Indonesia. Population Size, Density and Change.

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<tbody>
<tr>
<td>Java</td>
<td>76,102</td>
<td>565</td>
<td>1.9</td>
<td>42</td>
<td>48</td>
</tr>
<tr>
<td>Sumatra</td>
<td>20,812</td>
<td>38</td>
<td>2.8</td>
<td>49</td>
<td>44</td>
</tr>
<tr>
<td>Kalimantan</td>
<td>5,152</td>
<td>9</td>
<td>2.3</td>
<td>47</td>
<td>46</td>
</tr>
<tr>
<td>Sulawesi</td>
<td>8,535</td>
<td>37</td>
<td>1.9</td>
<td>47</td>
<td>47</td>
</tr>
<tr>
<td>Bali</td>
<td>2,120</td>
<td>377</td>
<td>1.8</td>
<td>n.d.</td>
<td>n.d.</td>
</tr>
<tr>
<td>Indonesia</td>
<td>119,232</td>
<td>59</td>
<td>2.1</td>
<td>44</td>
<td>46</td>
</tr>
</tbody>
</table>

AGE STRUCTURE

Keyfitz (1965) and Widjojo (1970) in examining the 1961 age distribution for Indonesia drew attention to the "hollow" after age 10. In 1961 there were 15 million persons in each five year cohort aged under 10, and only eight million in each of the cohorts between ages 10 and 24. Those in the latter group were the survivors of the cohorts born in the turbulent years of the Japanese occupation and the struggle for Independence, whilst the 0–10 group were born in the relatively favourable conditions of the 1950's. Keyfitz and Widjojo ascribed the hollow to the drop in child and infant mortality during the 1950's and the decimation during the 1940's of potential parents. Van de Walle, Coale, Demeny and Iskandar disputed this inference from the age distribution and suggested that Indonesia's age pyramid exhibited the typical feature of age-misreporting errors found in African and South Asian censuses. The 1971 census was expected to resolve the argument by showing whether or not the "hollow" was seen to move upwards. The results showed that there was truth in both hypotheses:

"the notch both moved along from age 10 to age 20 which it ought to have done if it was real and reappeared at age 10 which it would have done if it was an artifact of census taking" (Keyfitz, 1973, p.237).

McNicoll and Mamas (1973, p.10) have suggested that "the observed hollow should be split about equally between the protagonists".

The 1971 age-distribution however revealed another anomaly. In the 20–24 and 25–29 age groups the number of males was 20 percent less than the number of females in spite of the fact that in 1961 there was a balance of the sexes in this cohort. It is not clear whether this was due to a tendency to omit males or to overstate or underestimate the age of females. 1 The writer's view is that the combined de jure/de facto principle adopted in the census may have led to confusion and the missing of large numbers of young adult males who were engaging in circulatory migration between their home village and regions of greater employment opportunity, particularly large cities.

There is little doubt that age misreporting is of major importance in Indonesia. Myers indexes2 show high rates of digit preference in age reporting (for males an index of 18 in urban areas, and 30 in rural areas, and for females indices of 18 and 33 respectively). The only province of Indonesia in which digit preference was minimal was Jakarta (index of 11 for males, 14 for females).

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1 Examination of neighbouring cohorts suggests that the latter at most could only be regarded as a partial explanation.

2 Calculated by T. Hull, Demography Department, ANU.
FERTILITY AND MORTALITY

There is an urgent need to obtain accurate measures of fertility and mortality, not only for Indonesia as a whole but for its component regions. Iskandar (n.d.) has made skilful use of the meagre 1961 census materials and other data to obtain estimates of basic demographic parameters around 1960. A joint project of the Central Bureau of Statistics and the East-West Center, Hawai'i, is using the 1971 census data to obtain refined estimates of fertility and mortality levels down to kabupaten level. In addition, Lembaga Demografi's Fertility and Mortality Survey will provide some much needed information on provincial levels of fertility and infant mortality; preliminary reports on West and Central Java have already appeared.

In 1973 Indonesia was thought to have a CDR of around 20/1000. The most accurate mortality data available refer only to infant and child mortality. McNicoll and Mamas (1973) have for example used Brass techniques on the 1971 census data of children ever born and children still living classified by age of mother, to estimate survivorship of children to ages two, three and five. The figures which they obtain for Indonesia's major regions for 1960-70 fit with inferred infant mortality rates of 133 for Java (110 urban, 138 rural), and 150 for the Other Islands (118 urban, 159 rural). The Lembaga Demografi estimates for Java were almost certainly too low (92 urban, 116 rural—for all years of birth up to 1969), although early childhood deaths between ages one to four were above what was expected (105 urban, 138 rural).

There is much less information available concerning adult mortality patterns. It is possible that adult mortality for all Indonesia can be estimated from child mortality data because the mortality estimates for ages two, three and five derived by Brass techniques follow almost exactly a "West" model pattern (McNicoll and Mamas, 1973, p.12). Keyfitz and Flieger (1971) have prepared life-tables for Indonesia as a whole and for Jakarta. The construction of a life-table using cohort survival rates is rendered difficult because of differential under-enumeration. McNicoll and Mamas (1973, p.12) have suggested that reliable estimation of adult mortality in Indonesia will have to await application of the recently devised technique based upon rates of orphanhood (Brass, 1973). Another possible technique is to obtain data on sibling survivorship from the growing number of fertility and KAP surveys of ever-married women. The requisite data for either technique are not yet available in Indonesia. Moreover, it is doubtful if Indonesian women will be able to report accurately the required information. This is due to the existence of polygyny, high rates of divorce and marriage migration, so that children may lose contact with one or other of their parents or siblings.
Some early comparisons of the limited 1961 census data with the results of the 1971 count suggest that there has been a 30 percent fall in child-mortality between the early '50s and early '60s (McNicoll and Mamas, 1973, p.14). Mortality levels are lower in urban than rural areas and lower in Java than in the other islands. However, little examination has been made of these mortality differences between socioeconomic groups. Undoubtedly access to health facilities is a major factor. Little research has been undertaken to date, and much could be gained from closely controlled local studies of mortality patterns and differentials.

In summing up mortality in Indonesia, the data are only sufficient to make a very general comment such as that of McNicoll and Mamas (1973, p.15):

"... it is clear that Indonesia's mortality is closer to India's than say to that of Malaysia or the Philippines. With respect to Java it can be argued that any large decline in the death rate in the future will have to come in response to basic improvements in living standards rather than through relatively straightforward advances in public health."

Medical studies of malnutrition date back to the early 20th Century when the Dutch conducted surveys during the time of the so-called "ethical policy", especially in the limestone areas of Central Java. Some comparisons of recent findings with a study undertaken nearly half a century ago in the Semarang area suggests that the rural poor in the region are getting physically smaller from one generation to the next.

We know little of patterns of fertility and fertility change in Indonesia and its regions. In 1973 the CBR was thought to be around 44 (42 in Java, and 48 in the Other Islands). Using techniques developed by Cho (1971) and 1971 census tabulations, McNicoll and Mamas (1973) have derived Total Fertility Rates (TFR) for the major regions of Indonesia averaged over the 1966-70 period. The TFR for Indonesia as a whole was 5.5, with 5.2 in Java and 5.9 in the Other Islands. These estimates are probably a little low and the TFR of 6.11 obtained by the Lembaga Demografi survey may be closer to the real rate. The differences between regions are of great interest. The highest rates were found in Sumatra (6.2) while the remainder of the Other Islands recorded 5.7. In Java there were substantial differences between West Java (5.9) and Yogyakarta (4.5), East (4.6) and Central Java (5.3). Similar variations within Java were also found in the Lembaga Demografi survey. Whether they reflect the less severe poverty of West Java, or more fundamental cultural differences in fertility behaviour

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1 There is some evidence that TFRs in parts of rural North Sumatra are higher than 7. Syahruddin (1974, p.44) obtained TFRs of 6.97 and 6.44 for the urban and rural sectors of West Sumatra in the years 1965-1970.
between the predominantly Sundanese population of West Java and the Javanese of the east, is a subject of much needed research. Some of these questions may be answered during the Value of Children survey being undertaken by the Institute of Population Studies in conjunction with the East-West Center which will study separate samples in Sundanese and Javanese areas.

It is still a common misconception that Sumatra has large "empty" areas and an almost unlimited potential for absorbing population. However, its resources, particularly the highly leached soils, are insufficient for it to support anything like the density of rural population that currently subsists on Java's rich volcanic sawah lands. The high fertility rates of Sumatra's population hence should be of deep concern to policy makers and researchers who have understandably enough devoted most of their attention to Java. Although some of the fertility is cancelled out by higher mortality, the former was the major element in Sumatra recording the fastest growing population of the Indonesian islands. Since mean age at first marriage is two years lower in Java than the Other Islands, the marital fertility differential is even greater than that for TFRs. Marital fertility in Java is 20 percent below the average elsewhere (McNicoll and Mamas, 1973, pp.20-23).

Studies of fertility differentials remain few. The lower urban fertility (TFR 4.7 for Java and 5.4 for the Other Islands compared to rural rates of 5.3 and 6.0) is almost completely accounted for by lower urban birth rates below age 25 (McNicoll and Mamas, 1973, p.20). In a recent paper Wayling Oey (1974) has examined fertility differentials among the Acehnese, Minangkabau and Javanese in 1971.

The difficulties associated with measuring income in Java have deterred attempts to ascertain the relationship between economic status or poverty and fertility. In their study of a village near Yogyakarta, the Hulls took considerable care in obtaining various measures of wealth and income, and found that the poor of the village tended to have the lowest levels of fertility. Their results have been corroborated by Singarimbun's findings in Mojolama (also a village in Yogyakarta) and Lembaga Demografi's survey of West and Central Java, although the measures of economic status used by the latter were not nearly so refined as those developed by the Hulls.

The factors contributing to the comparatively low levels of fertility in regions such as Yogyakarta have been investigated in recent community level studies. Singarimbun and Manning's (1974) intensive survey of 772 women and

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1 Migration was not insignificant, however; see later section.

2 V. and T. Hull, Research Scholars, Department of Demography, ANU.
554 men in Mojolama indicates that birth rates were restrained by delaying age at first marriage and the instability of or failure to consummate many first marriages. In addition, birth intervals are prolonged by the extended duration of coital abstinence and post partum amenorrhea, closely associated with breast feeding, and also by high rates of divorce. Gille and Pardoko (1966) had similar findings in their East Java survey.

Singarimbul and Manning found that women in Mojolama desired more children than their total live births, whereas the Lembaga Demografi results for West Java indicate that ideal family size was 4.05 (rural 3.99, urban 4.27) a figure lower than present TFRs. However both the KAP surveys of Jakarta and Yogyakarta had findings similar to those of Singarimbul and Manning. This has prompted Singarimbul (1973, p.4) to write "it seems clear that changes in attitudes toward desired number of children will be an important pre-condition to the success of family planning on Java". These surveys indicate that Javanese do not have a marked preference for male children. Singarimbul and Manning's survey indicates that the women of Mojolama who lacked education had less desire for more children than those with at least some education.

Some studies at the community level have been concerned with evaluating the economic and social value placed on children in the Javanese family. White (1973, p.6) has made detailed observations of the economic tasks carried out by children in Kulon Progo, a village near Yogyakarta. The joint Institute of Population Studies/East-West Center project will examine differences in the value placed on children by the Javanese and Sundanese.

The relationship between migration, particularly migration to cities, and fertility is little understood. Titus (1972) is currently studying this relationship in Jakarta.

Singarimbul (1973, p.7) has isolated the major research need in fertility and fertility control in Java as being "more and closer examination of the cultural values and environment which surround procreation and childbearing". He also suggests that much of this knowledge will not be revealed by broad surveys. The detailed community studies recently undertaken in Central Java have been very productive in providing insights into the fertility behaviour of the Javanese. However there is a need for more such studies and not only in these cultural areas but other parts of Java and in the Outer Islands, especially Sumatra. Apart from the KAP surveys in East Java, Bekasi (West Java), Surabaya, Semarang, Yogyakarta, Den Pasar, Jakarta, and the Sriharjo and Maguwohardjo studies in

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1 A recent paper (Borkent-Niehof, 1974) examines fertility in Serpong, a village 45 kms from Jakarta, which has both Sundanese and Jakarta-Melayu elements in its population.
Yogyakarta, there is little information available on traditional birth-control practice. Because of wide differences between cultural groups (and even between districts within a cultural area), it is likely that attitudes to, and methods of, birth-control will vary from region to region.

FAMILY PLANNING IN INDONESIA

Ex-President Sukarno opposed family planning for Indonesia on the basis of its irrelevance (Indonesia could comfortably support 250 million people), and its immorality vis-a-vis Islam, and the government has openly supported family planning only since 1969. Until the middle of 1974 the Family Planning Program was restricted to the densely populated islands of Java - Madura - Bali but is currently being extended to other islands. In 1973 there were 1.3 million new acceptors, nearly double the 1972 figure of 727,000 (Surjaningrat, 1974). The fact that more than a third of all new acceptors were recruited in the last couple of months before target dates has been the object of much speculation - especially in view of some reports of coercion in East Java. Unfortunately continuation-rate information is very meagre.

The Indonesian Family Planning Organization (BKKBN) is sponsoring much research on the characteristics of acceptors, methods of contraception, use-effectiveness and evaluation of communication methods.¹ A joint project between the University of Indonesia and Leyden State University is examining the impact of a concentrated family planning programme in Serpong Kecamatan (Tangerang, West Java).² Mojokerto Kabupaten (East Java) is one of the sample study areas for the Population Council's feasibility study of Family Planning Programs based on Maternal/Child Health Centres.

MARRIAGE AND DIVORCE

Marriage and divorce and their relationship to patterns of fertility and migration are also neglected fields of demographic research. Recent papers by Singarimbun and Manning (1974b) and McDonald and Abdurahman (1974) have shed much light on marriage and marriage dissolution patterns among the Javanese and Sundanese respectively. It must be pointed out however that there are significant regional variations in these patterns within each of the ethnic groups. Both studies indicated that parents have a central role in the formation of marriages. There are preferences in some regions for marrying first and second

¹ For a list of publications see BKKBN (1973).

² For a description of the objectives and some preliminary results of the project see Borkent-Niehof (1974).
cousins, often to keep land within the family. Polygyny is common among the more well-off segment of the population.

New marriage laws have set a minimum female age at first marriage of 16. McDonald and Abdurahman have shown that these laws will have little practical significance because child marriages are now a rare occurrence. In West Java they found that age at marriage has increased rapidly in urban areas in recent years but more slowly in rural districts. Much of the urban/rural differential is explained by higher levels of education characterizing the population of urban centres. High levels of divorce characterize Java, particularly West Java.¹ McDonald and Abdurahman have indicated that much is due to non-consummation of marriage and "chronic divorcers". Infertility and subfecundity are important reasons for divorce and divorce is associated with low education, Muslim religion, low socioeconomic level, early age at first marriage and rural residence. Rates of remarriage are high: in West Java nine out of 10 divorced persons remarried within five years.

INTERNAL MIGRATION AND URBANIZATION

The 1971 census defined some 5.9 percent (6.9 million persons) of the Indonesian people as migrants. However the space and time criteria adopted for definition of a "migrant" by census officials excluded a substantially greater number of movers. First, the mover had to cross a provincial boundary. Since provinces covered areas from 413,000 to 576 km.² and populations ranging from 519,000 to 25.5 million the bulk of short distance and even medium distance moves were ignored by the census. In addition, the combined de jure/de facto principle used to determine whether a person was a migrant or not appears to have led to the exclusion of some permanent migrants as well as most temporary migrants.

The 1971 census data allow the size of stocks, and the volume and direction of streams, of interprovincial migrants to be determined (Hugo and Temple, 1975, forthcoming). It is also possible to examine the age, sex, occupation, education and fertility characteristics. It will be particularly useful in the examination of two types of migration which are of considerable importance in economic development strategies - migration from Java to the Outer Islands and migration to Jakarta.

The bulk of research into population movement has concerned itself with one or other of three types of movement - transmigration, the migration of highly mobile

¹ In some kabupaten registred divorces amount to over 50 percent of marriages registered in a calendar year.
ethnic groups, and rural to urban migration. McNicoll (1968) has made enter-
prising use of limited data to give an overview of Indonesian migration patterns
during the first two decades of Independence, and Withington (1967) has summa-
rized major migration streams of importance in Sumatra.

Transmigration is the name given to resettlement of people from Inner
Indonesia (Java, Bali, Lombok) to other less densely populated islands, chiefly
Sumatra, Kalimantan and Sulawesi. This is sponsored by the government and
undertaken spontaneously by individuals. Programmes to "even out" the density
of population between Java and the Outer Islands date from 1905 and have been
continued by the two Independence regimes. It is clear both from the ecological
potential of the Outer Islands and the sheer logistics of moving people from
Java and establishing them in the Outer Islands, that transmigration could not
be carried out on a sufficient scale to relieve Java's population problem—
although it may have some local impact in restricted areas of particularly heavy
population pressure on resources. The realization of these facts has been a
long time in coming, and it is only recently that transmigration has been aban-
donned as the answer to Java's population problem. Sumatra can be more densely
settled and made more productive, and if transmigration is used as part of an
overall development strategy to improve the lot of Indonesians generally, it has
an important role to play.

Transmigration has dominated migration research in Indonesia and there is
still much attention devoted to it. The 1971 census, however, showed that if
Irian is excluded, Sumatra was the only island to record a net lifetime migration
gain (916,000 persons), while the major net loss was recorded by Java-Bali
(538,600). In 1971 the Java-born population living in the Outer Islands number-
ed 1.53 million persons while the Other Island-born of Java numbered 0.58
million (Hugo and Temple, forthcoming).

A second major theme of migration research has been the highly mobile ethnic
groups. The complex web of social, cultural, economic and historical forces
which cause them to move have been, as yet, little investigated. The case of
the remarkable out-movement of the Minangkabau from their homeland in West
Sumatra has been studied in the most detail (e.g. Naim, 1973). It is generally
considered that the matrilineal nature of Minangkabau society exerts a strong
centrifugal force on young men and led to the development of a merantau (out-
movement) tradition. Hence the 1971 census indicated that West Sumatra had a
20.5 percent migration turnover rate. The Acehnese of Northern Sumatra also
have a matri-local family structure that has helped produce high rates of
mobility among the younger males (Siegal, 1969). Several of the Batak groups
of North Eastern Sumatra also show high propensities to migrate. The anthropologist Bruner's (1959, 1961, 1963, 1972a, b, c) continuing research on Batak migration to the cities of Medan, Jakarta and Bandung, and the importance of the presence or absence of a "dominant culture" in those cities in determining the nature of the assimilation that takes place, is a major contribution. The Banjarese of Kalimantan, the Buginese and Makassarese of South Sulawesi (Dibden, 1972), the Bawaenese (Vredenburg, 1964), Ambonese and Menadonese are all groups with high rates of mobility.

The whole theme of the development of a migration tradition among a group and the importance of community mobility "norms" is one which needs further attention in Indonesia—even within cultural areas. In West Java for example there are particular areas, even individual villages, in which a tradition of migration has evolved and patterns of chain migration have developed.

The third strand of research has been that concerned with rural-urban migration and urbanization. During the 1960's the proportion of Indonesians living in cities increased from 14.9 percent to 18.8 percent, involving a considerable displacement of rural dwellers to urban areas. The dominant urban centre of Jakarta (4.6 million in 1971) increased its primacy during the period. The other rapidly growing cities however were predominantly in the Outer Islands. The 1971 census has produced much needed information on migrants, but it failed to distinguish between rural and urban origins of migrants. In addition, a LEKNAS survey of Jakarta's migrants was carried out in 1971, but this is not yet fully processed, and there was also the broader LEKNAS 1973 all-Indonesia survey mentioned earlier. One refreshingly innovatory aspect of the 1973 survey was that 16 percent of interviews were conducted with target samples of highly mobile groups in urban areas—hawkers, prostitutes, squatter dwellers and becak (pedicab) drivers. This survey should shed much light on the motivations of migrants and their settlement in the cities. Temple's thesis (1974) has analyzed much of the data collected in the Jakarta segment of the 1972-3 survey.

Much remains to be done. The numerically important circulatory movements and return migration remain little studied. What is the relationship between temporary and permanent migration? The motivations of movers have been given little attention—particularly at the crucial rural "decision making" end of the process. Migration differentials apart from the most basic age/sex patterns are unknown. The social and economic effects of movement on the village, and

1 In 1971 Jakarta has more inmigrants (1.87 million, 40.8 percent of the total population than any other Indonesian province.

2 For a summary of urban growth in Sumatra see Withington (1973).
the nature of bonds linking city and village, the nature of the relationship between rural-urban and other forms of migration (marriage movements, seasonal migration, local moves, etc.) are not understood. What is the relationship between population pressure and migration? Is rural-urban migration simply an adjustment to environmental stress or does it involve social and economic mobility or both? What is the relationship between rural-urban migration and the so called "traditional sector" of the cities? What is the relationship between movement to the city and modernization? What are the sociological and psychological changes that accompany migration? Should policy makers encourage rural-urban movements or discourage them? How do migration "chains" develop and how do they operate? What is the relationship between movement from a rural to an urban milieu, on temporary or permanent bases, and changing patterns of fertility?

Few of these questions are likely to be answered by the 1971 census data. There must be more carefully controlled sample surveys of migrants and non-migrants, in cities, towns and particularly in rural districts. Longitudinal studies of individuals which probe their attitudes before, during and after movement to the city would shed more light on motivation of migration. Community studies of migrants/non-migrants at the rural and urban ends would lend much needed depth to our knowledge of movement patterns. Some of these approaches have been adopted by researchers in recent and continuing research in West Sumatra (Maude), Surabaya (Steele) and West Java (Hugo).

LABOUR FORCE

The 1971 census results contain a large amount of information on Indonesia's work-force. Considerable caution will have to be exercised in analyzing these data because of the limitations imposed by definitions and time--reference periods used in the census, the categories of type of activity used, and the imputation procedures adopted for deciding if a person was employed or unemployed. One thing seems certain from the nature of the Indonesian age structure: the young adult age-group which is entering the work-force for the first time is causing the work-force to increase at a considerably more rapid rate than the population as a whole. The absorption of these numbers, whether it be in the modern or traditional sectors of the economy, in rural or urban areas, is the greatest immediate challenge facing Indonesia. Jones (1974) has made careful use of the 1971 census data to estimate, as far as is possible, basic labour force characteristics.

Much needed information on the nature of the work-force, income, working hours, underemployment and unemployment in Jakarta, Bandung and Surabaya was
provided by a carefully executed Lembaga Demografi survey carried out in 1972. This study unfortunately is at present not available.

CONCLUSION

In 1981 Indonesia's population will probably be 151.9 million and that of Java 94.7 million (Biro Pusat Statistik, 1973). Some projections suggest that Indonesia's population will have passed 250 million by the end of the century. No one who has lived in Java can doubt that Indonesia's paramount demographic problem is to reduce that island's population growth. The existing population base is so enormous that even population growth rates lower than those obtaining at present would produce numbers that would be difficult to absorb under current conditions.

Demographers have yet to establish precise fertility, mortality and migration rates for Indonesia and its component areas. Work on this front, however, is more advanced than that devoted to unravelling the nature of the forces affecting these key characteristics.
APPENDIX 1 - INDOONESIAN ADMINISTRATIVE REGIONS

1. Propinsi (Province).
2. Kabupaten (Regency), Kotamadya (Municipality).
3. Kewedanan (District).
4. Kecamatan (Sub-District).
5. Desa/Lingkungan/Kelurahan (Village or Urban Ward).

APPENDIX 2 - SOME SELECTED DISSERTATIONS RECENTLY SUBMITTED TO BANDUNG TERTIARY INSTITUTIONS


REFERENCES

Only references cited in the text and publications appearing in the last two years are listed here. For earlier works Singarimbun's (1974) comprehensive bibliography should be consulted.


