MAURITIUS

Ministry of Economic Planning and Development

CENTRAL STATISTICAL OFFICE

1983
Housing and Population Census
of
MAURITIUS

ANALYSIS REPORT

VOLUME I — Evaluation of Data

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Foreword

The 1983 Census of Mauritius was a project which cost twelve million rupees, required the direct involvement of about5,000 officers interacting with 200,000 households to obtain socio-economic information on one million persons. The data obtained from such an operation are always subject to different kinds of errors. It is therefore standard practice to carry out a detailed evaluation and appraisal of census results before they are used for interpretation and planning.

In the past, the analysis of census data for Mauritius has been done by expatriates, and the main focus has generally been the evaluation of the age-sex distribution with a view to the construction of national projections. The shortage of trained and experienced manpower makes it difficult to assign personnel exclusively to analysis of census data. For the 1983 census also, it had been originally planned to analyse the demographic characteristics only. The idea to conduct an exhaustive in-depth analysis was first put forward in June 1984 by Dr. K. V. Ramachandran, Regional Adviser at the United Nations Economic Commission for Africa (UNECA). He suggested that the collaboration of subject matter staff from other sections within this Office and also from other ministries should be sought for the analysis. The idea gradually took shape and finally 8 Statisticians and Demographers from this Office and the Ministry of Health were identified to work on the project. The work of the team is being supervised by Dr. Ramachandran who has been requested to undertake short supervisory missions about twice a year until the completion of the analysis by the middle of 1986. Thus, it is the first time that an exhaustive and intensive analysis of census data is being carried out by local staff.

The present report is the first of a series of analytical reports to be prepared by the analysis team. It deals with the evaluation of the basic demographic data and also presents a set of population projections prepared immediately after the evaluation was completed. Subsequent reports will cover topics such as Nuptiality and Fertility, Health, Morbidity and Mortality, Population Distribution and Migration, Education, Economic Activity, and Households and Housing conditions. Given the peculiarities of the data for Rodrigues, both as regards quality and quantity, and also for ease of reference, it is proposed to publish a separate analytical report covering all topics for the island.

I would like here to thank the analysis team and their staff for all the efforts that were put into the analysis of the data and the preparation of this report. My thanks also go to the United Nations Fund for Population Activities and to the United Nations Economic Commission for Africa for financial and technical assistance. Finally, the whole census team and myself are most grateful to Dr. K. V. Ramachandran for his excellent guidance and supervision.

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1. INTRODUCTION

1.1 Background

The Island of Mauritius is a small country in the Western part of the Indian Ocean, with an area of about 1,865 sq. km.(720 sq. miles) and an enumerated population of 967,000 in 1983. It has been successively a Dutch, French and British Colony. It became independent of Britain on 12th March 1968 and has a Westminster type of parliamentary government.

The British, who occupied the island from 1810 to 1968, developed it as a source of cane sugar for the European market. Sugar is still the country's main source of export income although industrialisation which started in the early seventies, has recently been given a new impetus by a number of additional incentives to investors, the majority of whom are foreign. The industries, which employ a predominantly female labour force, are involved mainly in the manufacture of textile and wearing apparel, jewellery, and electronic components. Another industry which has been growing rapidly in recent years is tourism.

The per capita Gross Domestic Product of Mauritius at market prices increased from 1,900 Mauritian rupees in 1972 to 13,200 rupees in 1983, but this was accompanied by an increase of 500% in the Consumer Price Index. During the same period, employment is estimated to have increased from 213,000 to 294,000; unemployment which stood at 38,000 in 1972 declined to 20,000 in 1977, but then rose steadily to attain a level of 61,000 in 1983.

The population of Mauritius consists largely of descendants of slaves from the African Continent and indentured labourers from the Indian sub-continent, both of whom were brought here to work on the sugar plantations. Roughly speaking, about two-thirds of the population are of Indian origin, slightly less than one-third is of mixed African and European descent whilst a small community originating from China is also present.

The population is considered to be highly literate as reflected in the 1972 and 1983 Censuses. For instance the percentage of persons aged 15 years and above who have gone beyond the primary level of education rose from 22% in 1972 to 35% in 1983. The proportion of the population aged 5 to 14 years who were attending school increased from 80% to 88% during the same period. It is surmised that most households have at least one member who has had primary education.

1.2 Historical background of census taking

Census taking in the Island of Mauritius dates back to the 18th century. The first complete census of the island, then known as Isle de France,was taken in 1735 under the administration of the French governor Mahé de Labourdonnais. Since then numerous complete censuses or partial counts of the population were made for the purposes of internal police, and the raising of public revenue, a large part of which was derived from capitation taxes on slaves.

In 1786 an ordinance was passed providing for censuses to be taken on the 1st of January every year. The practice of taking annual censuses geared to the collection of taxes was continued under British rule. From 1829 onwards population censuses were no longer associated with the raising of public revenue; but even then the results were so unreliable that annual censuses were soon stopped, that of 1830-31 being the last of its kind.

The first census for which a report has been printed was probably that of 1846, but no copy has been traced in Mauritius. For all subsequent censuses, copies of the printed reports are kept in the Archives of Mauritius.

The next census after 1846 was taken five years later in 1851. Since then censuses were taken every ten years, except that the one scheduled for 1941 had to be postponed to 1944 as a result of World War II. The first census to be taken after the War was in 1952, and the ten-yearly programme was subsequently resumed with a census in 1962 and another in 1972. The 1983 Census was originally planned for 1982, but it had to be postponed to 1983 because of parliamentary elections held in June 1982.

The census dates and the sexwise breakdown of the population enumerated at each of the censuses since 1846 are given in Appendix Table A1.

1.3 Analysis and appraisal of previous censuses

The first census for which data have been evaluated seems to be that of 1952. The exercise was undertaken in the context of a commissioned report on the economic and social structure of Mauritius and on ways to improve the standard of living of the fast growing population (7).

The 1962 Census data was evaluated in 1964 by Edith Adams appointed under the United Nations Programme of Technical Assistance (1). The main findings were as follows:

(i) some underenumeration of young children was observed but considerably less than in 1952; in fact total underenumeration in the age-group 0-4 was estimated at about 2,100 males and 2,100 females;

(ii) there was some exaggeration of age at higher ages for both sexes, and adjustments had to be made at ages 75 and over for males and 60 over for females;

(iii) exaggeration of age was also present in the death statistics and again adjustments were made at ages 75 and over for males and 60 and over for females;

(iv) digit preference for 0 and 5 had declined since 1952, but digits 2 and 8 had retained their attractive power; furthermore, digit preference was found to operate more strongly in the thirties and forties, and to be

virtually absent at the old ages; this was attributed to improvements in the accuracy of age reporting resulting from the introduction of old age pension in 1950, and the later requirement that birth certificates be produced to prove eligibility;

(v) a deficit of males was found in the 20-40 age group, but since no explanation could be found for this, the census figures were accepted as enumerated;

(vi) both registration data and census survival ratios showed relatively light mortality at the young ages and relatively heavy mortality at the older ages for males, a pattern which had been observed in analysis of earlier data;

(vii) birth and death registration were found to be satisfactory for the decade prior to the census.

Adams also carried out an analysis of fertility data derived both from censuses and the vital registration system.

The reverse-survival method using census data by age showed that in the 1920's the birth rate for Mauritians of Indian origin exceeded that for Mauritians of mixed African-European and Chinese origin, but during the depression years of the 1930's the birth rates for the two groups were nearly equal because Indo-Mauritians were restricting their fertility by large-scale postponement of marriage; during the years of the Second World War and in the 1950's, the Indo-Mauritian birth rate was found to be greatly in excess of the birth rate for the other group. However, census data on the number of children born had not been tabulated and Adams could not undertake a deeper analysis of fertility differentials.

The 1972 Census data was evaluated in 1974-75 by G. Suguna Kumari, also appointed under the United Nations Programme of Technical Co-operation. The report (6) has not been published but a copy was submitted by the author to the Central Statistical Office. The main findings are as follows:

(i) a deficit of 5,900 males and 4,100 females was observed, representing 1.4% of the enumerated population for males and 1.0% for females; the undercount was present in almost all five-year age-groups, but was particularly pronounced in the age-range 20-39 for both sexes, and also above age 65 for males and above 70 for females; no adjustment was made for this undercount considered to be small;

(ii) no underenumeration of young children was observed;

(iii) there was some everstatement of age at the very high ages, and to a greater extent than overstatement of age at death, if any;

(iv) digit preference was found to be almost absent except for some slight preference for digits 8 and 7;

(v) mortality was found to be low at the young ages and relatively high at the older ages, in particular for males; moreover the improvement in mortality was higher for females than for males; in fact mortality had deteriorated for males in the higher age-groups;

(vi) birth and death registration were found to be satisfactory for several decades prior to the census.

As regards the 1972 census fertility data some tabulations were prepared and were partly used in an analysis carried out by the Economic Commission for Africa. Some tabulations on socio-economic characteristics were published but have not been analysed so far. Data on migration and mortality were not tabulated.

1.4 Framework for evaluation and analysis of 1983 Census data

Unlike the previous two censuses the analysis of the 1983 Census data will not be done by experts appointed by the United Nations. This time the exercise is being undertaken by local staff who are, however, working under the guidance of Dr. K.V. Ramachandran who has international experience in Demographic Analysis, and who is currently working as Regional Adviser with the United Nations Economic Commission for Africa. Furthermore, the exercise is a comprehensive one involving not only the evaluation of the basic age and sex data, but also the analysis of data on nuptiality and fertility; health, morbidity and mortality; population distribution, migration and urbanisation; education, economic activity; and finally households and housing conditions. A series of national, sub-national and sectoral projections will also be produced as and when analysis and evaluation of data on the relevant topics are completed. The results of the analysis and evaluation will be published in a series of analytical reports.

A team of eight Statisticians and Demographers from the Central Statistical Office and the Ministry of health are already working on the project since the last quarter of 1984. Dr. Ramachandran is undertaking short missions of 2-4 weeks at intervals of roughly 5 months to train the analysts, to advise on analysis and evaluation, and to supervise the progress of work. It is expected that the project will be completed by the end of 1986; the initial target date of mid 1986 will be difficult to meet because of delays in the production of census tabulations.

The evaluation of the basic census age and sex data has now been completed. This report, which is the first analytical report, gives the main findings, together with a set of national population projections.

2. THE 1983 CENSUS

2.1 Introduction

The 1983 Census was the fifteenth census for Mauritius and was taken according to provisions laid down in the Statistics Act 1951. The count was made on a "de facto" basis. All persons alive in Mauritius at midnight on the night of 2-3 July 1983 were enumerated irrespective of whether they were residents or not. Generally speaking, persons were enumerated in the household, whether private or institutional, in which they were present on census night. A list of such households had been compiled at the Housing Census taken about three months earlier.

2.2 Census cartography

A detailed census mapping exercise was undertaken as from the beginning of 1981 in order to provide various base maps and census enumeration maps to fieldstaff before they went on the field. This was necessary to ensure that no part of the country was omitted and that no fieldworker tresspassed into the territory of another. The exercise involved an update of old maps, preparation of base maps, delineation of enumeration areas on the field, and finally the preparation and reproduction of both enumeration area maps and supervision area maps.

At the previous census in 1972, the Island of Mauritius had been divided into 376 enumeration areas of about 500 households each. These areas were further subdivided in 1983, not only to enable better control and supervision of the fieldwork, but also to meet certain specific needs in town and country planning and to provide clusters of roughly the same size for future sample surveys. Thus, for the 1983 Census, there were about 2,700 smaller enumeration areas each containing roughly 80 households in the rural and 100 households in the urban areas.

2.3 Housing Census

The Housing Census was conducted from mid-March to May 1983 by 582 Chief Enumerators working under 82 Supervisors who were themselves answerable to 9 Senior Supervisors. Each Chief Enumerator was assigned a number of enumeration areas in which he had to enumerate all buildings including those still under construction, all housing units, all households and all commercial and industrial establishments. Information was collected on the characteristics of buildings, the amenities provided by housing units and the number of male and female members in each household. The information was collected on a Housing Census questionnaire which was almost entirely pre-coded. Each questionnaire applied to one housing unit.

2.4 Population Census

The names and addresses of heads of households identified at the Housing Census were transferred by computer on to self-adhesive

stickers which were subsequently stuck on Population Census questionnaires. The number of persons in the household was also printed on the sticker to enable the identification of those households, mainly institutional, which had more than ten members and therefore required more than one questionnaire for enumeration. Addressed forms were also prepared for all housing units that were vacant or under construction at the Housing Census.

The number of Enumerators employed for the Population Census was 3,445. Each was given a list of about 70 heads of households, vacant housing units and housing units under construction, together with the corresponding addressed census questionnaires. The list, which also contained the number of persons in each household, had been prepared by the Chief Enumerator after completion of the Housing Census. The Enumerator was also supplied with a number of unaddressed blank questionnaires for "new" households that might have been formed or moved in since the Housing Census, and also for households that might have been missed at the earlier enumeration. For each "unaddressed" questionnaire utilised by the Enumerator the Chief Enumerator subsequently had to ensure that the location characteristics of the household were properly inserted.

Census night was the night of 2-3 July 1983. Distribution of the census questionnaires to households was done by Enumerators from 25 to 30 June. Heads of households were requested to complete all items, except those on economic characteristics, in respect of every person who spent census night on the premises, or who joined the household or institution on 3 July without having been counted elsewhere. The population had already been informed and motivated through an intensive publicity campaign comprising ministerial conferences, radio and television broadcasts, interviews and publicity spots, posters and stickers.

The questionnaires were collected from 3 to 8 July. Enumerators had to check the entries made by households, complete the columns on economic characteristics, and also complete all questionnaires and columns which the household had not been able to fill in. In cases where households had moved, split or "died", the fact had to be spelled out both on the census questionnaire and the listing provided. Similar indications were also required in respect of "new" households and housing units which were still vacant or under construction. The Enumerator also had to record on his listing the number of persons enumerated at the Population Census, and to ask for and note down the explanation for any discrepancies from the Housing Census.

The very few homeless persons in the country were enumerated by the Enumerator in whose area they happened to be.

2.5 Editing, Coding and processing

The editing and coding of the data was done by a team of 68 officers recruited by the Central Statistical Office at Clerical Officer level. Punching and a 100% verification of both housing and population data were done by the Data Processing Division of the Ministry of Finance. Data were transferred to discs through key-edit stations and then stored on magnetic tapes. Input validation programmes incorporated at the keying stage ensured that a number of inconsistencies were eliminated before the

data went to tape. Validation, creation of data files and tabulation are being done on an ICL ME 29-17 with a central processing unit of 512K octets.

2.6 Problems

2.6.1 Cartography. Many of the existing maps available were outdated, and since it was not possible to check each and every boundary and landmark on the field before preparing the census maps, it was known that there might be some problems at the enumeration stage. It was therefore decided to recruit the supervisory staff about ten weeks before the Housing enumeration was due to start. They had to reconnaitre and familiarize themselves with the area allocated to them and check that the maps given to them accurately reflected the features they were supposed to reflect. Any omissions and inaccuracies were reported to the Cartographic Unit which ensured that appropriate amendments were made when necessary.

2.6.2 Housing Census questionnaire. The questionnaire was designed in such a way that one housing unit and the amenities it provided, would be entered on one questionnaire. If the housing unit had more than one household in it, all the households were to be listed on the same questionnaire. Confusion arose in some cases where the amenities provided by the housing unit were not available to both households: for example two households living in the same housing unit could have their own separate kitchens, one inside and one outside the housing unit. In such rare cases field staff were instructed to assign the better facilities as being available to all households in the housing unit.

Some fieldstaff also experienced difficulty in applying the definition of household (combined household and part of household) in cases where the same household was living in two housing units.

2.6.3 Time lag between Housing and Population Censuses. The average interval between the Housing and Population Censuses was about 3 months so that changes were expected between the two visits. Steps were therefore taken at the Population Census to ensure that there would be no omissions or double counts at the Population Census. These have already been described above. It was found however that there had been a tendency, on the part of some Chief Enumerators at the Housing Census, to include as one household the members of two households living in the same Housing Unit. The necessary corrections could be made to the Population Census data, but not to the Housing Census data.

2.6.4 Population Census questionnaire. The questionnaire was designed to include a maximum of 10 members of the same household and a maximum of 3 women of the same household who would be in the age group 15-54 years. Thus if a household had more than 10 members or more than 3 women aged 15-54, then additional questionnaires had to be used. In some cases the personal serial numbers in the second schedule were not amended so that the household was input as two households at the data processing stage. However, many of such cases were thrown out as duplicate records at the validation stage and appropriate corrections were made. It is possible that some duplicated

households may still exist on tape, but they would be very few, given the small number of households with more than ten members.

2.6.5 Omissions and double counts. The absence of mobile population groups, coupled with the "de facto" method of enumeration, and the intensive publicity campaign would suggest that no particular category of population has been omitted from the census count. Foreign diplomatic personnel were enumerated, as were also members of the Police Force and the Special Mobile Force who were in barracks on census night. There is no army, whether local or foreign, in the country. Passengers and crews of ships anchored in the harbour were also enumerated, they numbered 246. However, it is possible that in the densely built commercial areas of the capital, some households living at the back of commercial establishments may have been missed, in spite of the extra care and resources deployed.

As regards double counts. it is unlikely that the extent, if any, has been important. The Housing and Population Censuses provided a double check, whilst any discrepancy between the two had to be investigated and explained by the Enumerator.

2.6.6 Data processing and tabulation. Computer edit procedures and automatic correction could not be implemented as originally planned because data processing personnel assigned to the census subsequently emigrated. For the same reason the production of tables is proceeding at a very slow pace.

2.7 Errors in census data

A number of errors and discrepancies were found at the editing and coding stage. Often it was possible to sort them out in the office, mainly with reference to answers to other questions on the form. Those queries which could not be settled in the Office were referred to field Supervisors for clarification on the field. This worked very well for the Housing Census which lasted about 10 weeks: Supervisors had been asked to check the first books completed and send them to the Editing Unit as quickly as possible. This ensured quick feedback to the field and substantially less discrepancies in books completed after the second week of enumeration. As regards the Population Census, fieldwork to correct errors and omissions lasted only up to the end of September, by which date all fieldstaff had been demobilised. After that date, erroneous data that could not be corrected with reference to other information on the questionnaire, were entered as "not stated".

A number of tests were applied to the census data at the validation and updating stage in order to identify inadmissible codes and inconsistencies. These errors may have occurred either on the field or during coding, or again at the keying stage. The total number of errors identified, and subsequently corrected by going back to the questionnaires, represents about 2% of the 200,000 Housing records, and 3% of the one million Population records. However, very often several errors were in the same record so that the percentage of records with errors must be considerably less. The main types of errors flagged by the tests and which it has been possible to quantify were in the

following fields: location 0.3%; relationship to head of household 0.1%; nationality 0.1%; usual address, address one year ago and address five years ago 0.2%. Many other fields were verified to be numeric only. Among these were locality, economic activity, occupation and level of education which had proved to be difficult to some of the coding staff.

Some missing records were also listed at the validation stage and had to be reinserted after going back to the questionnaires. This was possible because validation was done in batches and it was easy, although time consuming, to go through the appropriate batch of questionnaires.

It is expected that information on marriage and fertility history contain relatively more errors than the other fields. There were cases where the date of termination of marriage was not available for widowed, divorced or separated women. In many cases live births were not reported in the correct sequence, and often the interval between marriage and first birth was much less than nine months. It was decided not to make any corrections to the marriage and fertility data until expert advice could be sought.

3. THE VITAL REGISTRATION SYSTEM

3.1 Historical note

The registration of vital events in Mauritius dates back to the 17th century. The first general order requiring the clergy to keep a register of baptisms, marriages and burials was passed in 1667 when the island was under French rule. Non-compliance with this law was punishable by fines. Several decrees and Royal Declarations promulgated subsequently, came to consolidate the system, progressively increasing its scope to include not only the Catholic White settlers but also non-Catholics, free citizens and slaves as well.

By 1799 the responsibility for the registration of vital events was transferred from the clergy to the Municipalities. In 1803 it was decreed that each of the nine districts should have a Civil Commissioner responsible for the keeping of registers of births, deaths and marriages. A register of still births was kept as from 1807. In 1808, the laws relating to Civil Status were brought together under the "Code Napoléon", the provisions of which were added to and partly amended or repealed by the British who took the island in 1810. However, it was only in 1890 that all the French and English laws were drawn up into a single ordinance. This ordinance with amendments is now in force as the Civil Status Act 1982.

3.2 The vital registration system

It is the Registrar General's Department which is responsible for the registration of vital events in the country. It exercises supervision over all 47 Civil Status Offices through the Central Civil Status Office in Port Louis, the capital.

After a vital event is registered in the civil status register, the civil status officer is required to transcribe the relevant information on a special card which is the starting point for the compilation of vital statistics. At the end of each month all the cards for each type of event registered are forwarded to the Central Civil Status Office. Prior to 1955 the compilation of vital statistics was done manually at the Central Civil Status Office itself. As from 1955, the processing and compilation was taken over by the Central Statistical Office which had been created in 1948 and which was equipped with punching, sorting and tabulating facilities. With the acquisition of a computer by the Government in 1971, the processing of vital statistics was entrusted to the Data Processing Division whilst the Central Statistical Office continued to do the editing and coding. Computerization provided the opportunity for the quick processing of large bulks of data and for carrying out more detailed analyses. In consequence, the Central Statistical Office, in consultation with other government departments, approached the Registrar General to make necessary arrangements for using the Civil Status machinery for collecting additional demographic data at the time of registration of vital events.

3.3 Events registered

The events registered by the Civil Status Office are live births, deaths, still births and marriages. The information collected on each event is as follows:

(i) Live birth: name, ethnic group, sex, religion, district of residence and township, date of birth, legitimacy status, father's profession, mother's profession, age of mother, number of previous live births, number of previous still births, date union started, date of previous live birth; information on age of father, plurality, and place of delivery has been asked as from January 1974.

(ii) Still birth: the topics covered are the same as for live births except that the question on legitimacy status is not asked.

(iii) Death: name, ethnic group, sex, religion, district of residence and township, date of death, age at death, cause of death, certification of cause of death, profession, birth place, marital status, number of live births for women; place of death has been asked as from April 1975.

(iv) Marriage: name, ethnic group, age, religion, district of residence and township, profession and marital status for

both parties; month and year union started if earlier than civil marriage; number of children legitimated, if born before civil marriage.

3.4 Problems

The registration of marraiges is not complete in Mauritius. Marriages celebrated according to the religious/customs of the Hindu and Muslim population have no legal sanction and are considered as consensual unions. These unions are recognised only if and when the parties decide to marry civilly. Since the time lag between the religious marriage and the civil marriage may vary considerably the number of registered marriages in a given month gives a false picture of the number of unions contracted in that month. The figure includes civil marriages for the month and unions contracted previously but being civilly registered for the first time; it excludes unions contracted in the given month on a consensual or religious basis only.

However, as from 1982, religious marriages with civil effect can be celebrated by an authorized priest who has to make a return of the event to the Central Civil Status Office. In case the parties want to have a religious marriage with civil effect, but celebrated by a person other than an authorized priest, then the Registrar General must be previously informed so that he can arrange for a Civil Status Officer to be present at the ceremony. It is expected that these new provisions will ensure that a larger number of religious marriages are registered as soon as they are celebrated.

Another problem concerns the registration of births. A delay of 45 days is allowed for the declaration of births so that not all births are registered in the month in which they occur. However, it is possible to tabulate live births both by date of occurrence and by date of registration.

The problem of late registration does not arise in the case of deaths since the family is anxious to dispose of the body within a day after death. No burial can take place except in an authorized and registered burial ground and upon a permit from a Civil Status Officer. The permit is issued only after the death has been registered upon the declaration of two witnesses. In the case of cremation a medical certificate must also be produced before a permit is issued. It must be noted that as from 1982 all deaths have to be medically certified and the certificate produced at the time of registration.

As regards registration of still births, it is possible that in the past some infant deaths may have been reported as still births if the birth of the infant had not yet been registered. However the extent of such misreporting, if any, must have been very slight during the last decade or two when fewer and fewer births are occurring in private homes in the absence of trained midwives or nurses and doctors. In fact the proportion of births assisted by qualified personnel increased from 64% in 1972 to 84% in 1983.

Whenever an infant dies before its birth has been registered, the Civil Status Officer has to fill in a live birth card as well when

the infant death is reported. This card is sent to the Central Statistical Office together with the other live birth cards at the end of the month.

3.5 Quality of data

United Nations experts who have evaluated the 1952, 1962 and 1972 censuses are of opinion that registration of live births and deaths is now complete in Mauritius. This may be due not only to legal requirements for registration, but also to the fact that civil status documents have come to play an important part in the administrative machinery: birth certificates have to be produced for entry to schools, when registering for electoral purposes, when applying for jobs, when getting married, when claiming pensions. Death Certificates are necessary for claiming pensions for widows and orphans, for insurance purposes and for the establishment of successions.

However, although the data is good with respect to coverage, the quality of information obtained on some topics may not be as good as one would have liked it to be. This applies more particularly to the reporting of occupation for all events, the reporting of duration of union and date of previous live birth in the case of birth registration, and finally, the cause of death for death registration.

Tabulations of vital registration data are also produced according to the characteristics described below in addition to geographical residence, age and sex:

(i) live births order, duration of union, interval since previous live birth and age of father for live births;

(ii) total birth order for still births;

(iii) cause of death, medical certification, occupation of deceased, and also detailed age by single days for under one month and by month for under one year;

(iv) previous marital status and duration of consensual union for civil marriages.

4. INTERNATIONAL PASSENGER TRAFFIC

4.1 Introduction

An important factor accounting for population change in Mauritius with its relatively small population size is the observation that there is a sizeable movement of persons into and out of the country - both of Mauritians and of non Mauritians. For example, during the intercensal period 1972-83, there was a total of about 3.2 million persons who moved into or out of the country compared with the population of about a million in 1983. Thus a consideration of such movements in terms of coverage, completeness and reliability as to the characteristics is very necessary in an evaluation of its statistical data system in the country.

Information on international passenger traffic is collected by the Passport and Immigration Office when passengers pass through Immigration Control. Data on international arrivals and departures by sex are available since the beginning of the 20th century and by country of origin or destination since 1948. The age and sex breakdown is available as from 1973 for total arrivals and departures and also separately for Mauritians only.

The Passport and Immigration Office also keeps a register of emigrants and a register of immigrants. An emigrant is defined as a Mauritian resident who is leaving after having obtained a resident visa from the recipient country. An immigrant is defined as a non-Mauritian who has obtained a permit to work in Mauritius for at least one year.

The number of registered emigrants from 1973 to 1983 was about 9,200 of whom 4,700 were males and 4,500 females. However, it is known that many Mauritians emigrate to other countries without being entered in the register of emigrants, one of the reasons being that they do not declare themselves as emigrants to avoid taxation. The average annual number of immigrants who came to work in Mauritius from 1973 to 1983 was 400, of whom 250 were males and 150 females.

For the analysis and evaluation of census and migration data it is not necessary to look at registered emigrants and immigrants since they would all be included in the total arrivals and departures.

4.2 Data collection system

Every person entering or leaving the country has to fill in an international embarkation-disembarkation card on which are recorded the person's title (Mr., Mrs., Miss), name, date and place of birth, nationality, occupation, permanent address, passport number and place and date of issue, port of final destination or original embarkation; and additional information on purpose of visit, intended length of stay and intended address for persons arriving.

The information entered on the card is checked against the passport of the person when the latter goes through Immigration Control. The embarkation-disembarkation cards are used by the Immigration Office to update, manually, their data files which still consist of a system of master cards for each passenger.

After the Immigration Office has finished with the cards, these are sent to the Central Statistical Office for data compilation. Before 1972 passenger traffic data were compiled manually. As from that year, the Central Statistical Office codes the data on transcription sheets which are then sent to the Data Processing Division for processing and tabulation. By 1979 the volume of passenger traffic had doubled as compared to 1972 and it was decided to process the data on a sample basis. Accordingly, as from 1979, only a 10% systematic sample of all cards from each airline or ship company are processed.

Tabulations currently produced include total arrivals and departures by type of passenger, age and sex composition, country of original embarkation or final destination; arrivals and departures of Mauritian residents by age and sex, by district of residence; departures of Mauritian residents by country of final destination; registered long-term emigrants by age and sex, by district of previous residence in Mauritius, by occupation, and by country of final destination. A set of tabulations are also produced separately for tourists. These include tourist arrivals by age and sex, by country of residence and duration of stay, and by nationality; tourist nights by country of residence and by country of nationality. Separate tabulations are produced for Mauritians settled abroad who come to the country for holidays.

4.3 Problems

The tremendous increase in the volume of international traffic in recent years is causing a bottleneck at the level of the Immigration Office where every embarkation and disembarkation has to be processed manually for monitoring of individual movements. Thus, although sampling has reduced the workload as regards compilation of statistical data, there are considerable delays before the cards leave the Immigration Office for the Central Statistical Office. It is felt that computerization of the monitoring system at the Immigration Office would not only help towards timely production of statistics on a complete basis, but more importantly, it would lead to considerable economy of resources at the Immigration Office itself.

Another problem is that no space or box is provided on the embarkation-disembarkation card for the sex of the passenger, the reason being that this can be deduced from the title, namely, Mr., Mrs. or Miss, which the person is supposed to indicate by deleting the two titles which do not apply. However there are many cases in which the title is not indicated or ticked. Whilst it is easy for the coders to deduce the sex of almost all Mauritian residents from their names, this exercise leaves the door open for a lot of guesswork in the case of many non-Mauritians when the title is not clear. The Immigration Office has been requested to consider the possibility of including sex as a separate item on the embarkation-disembarkation card.

4.4 Quality of data

Many of the findings in this section, in particular those on sex composition of migrants, came to light in the context of the evaluation of the 1983 Census data to be described later. They are included here for the sake of convenience and completeness.

4.4.1 Coverage

There are only two international points of entry or exit in the country: Port Louis Harbour and Plaisance Airport, both of which are subject to Immigration Control. Although it is possible for small boats to enter many of the bays on the coast it is not thought that there are any illegal entries or exits: the remoteness of the island from any country makes any such attempt a hazardous exercise. It is believed that data on international migration is complete, at least for the past one or two decades.

4.4.2 Seamen

Every month the Marine Authority sends a return of engaged and discharged seamen to the Central Statistical Office. These seamen are almost exclusively Mauritians working on Mauritian vessels, and they do not go through Immigration Control when going on board or landing. Up to now, engaged seamen have been counted as departures and discharged seamen as arrivals, and have therefore been included in international migration when estimates of the population have been made. The average number of seamen engaged or discharged in a year is about 700. It was expected that the arrivals and departures of seamen would balance out on the whole. However, over the intercensal period 1972-83 there was an apparent excess of 2,100 departures over arrivals, that is an excess of 2,100 engaged seamen over discharged seamen.

Investigations with the Marine Authority reveals that engaged seamen are in fact seamen who are entering into a work contract with the owners of the vessels on which they are being engaged, and discharged seamen are seamen who are either terminating or not renewing their contract. Furthermore, a contract does not cover one trip but a given period of time, usually six months, so that a seaman may go out to sea or come on land several times during the length of his contract. It was also found that whilst the control on engaged seamen is good, the same cannot be said for discharged seamen. The main reason is that a seaman may enter into a work contract and therefore be counted as engaged, and then, for some reason, choose to stay home even before the termination of the contract. In such a case there may be a considerable time lag before the seaman is officially discharged and the chances are that he may not enter the statistics of discharged seamen at all. The Marine Authority agreed that, in the absence of any immigration-type control, the statistics of discharged seamen are an underestimate, but assurred that all engaged seamen sooner or later returned to the country.

Given that the concepts of engaged and discharged refer to work agreements and not to departures and arrivals, and given also that arrivals and departures of seamen should in fact balance out over the short period, it has been decided that movements of seamen should not enter the statistics of international migration. Accordingly, all migration data presented in this report exclude seamen.

4.4.3 Migration data by age

Appendix Table A 5 shows arrivals and departures of Mauritians by age-group and sex. It is seen that, for the period 1972-83, the proportion of cases in which age is not stated is as follows:

	Male	Female
Arrivals	17%	14%
Departures	16%	12%

It may be wondered why age reporting is so poor when the production of a passport is essential for Immigration Control. In fact almost all cases where age is not stated refer to movements of Mauritians between the Island of Mauritius and the Island of Rodrigues which lies about 560 km (350 miles) to the East-North-East of Mauritius. The Island of Rodrigues is part of the state of Mauritius and there is no Immigration control as such between the two islands. However, a breakdown of movements between the two islands is available by sex, and this information has been used in the evaluation of the population enumerated at the census. For the age-wise analysis the not stated cases have been pro-rated among the known ages. The error resulting from this procedure must be negligible since, over the long period, departures to Rodrigues tend to cancel out with arrivals from Rodrigues: for instance from 1973 to 1983 there were 53,000 departures and 52,700 arrivals.

4.4.4 Sex composition of international migrants

Comparison of the enumerated 1983 population with the expected population based on the 1972 census data, registered births and deaths, and international migrants has shown that the sex composition of international migrants is subject to error. It was pointed out earlier that sometimes the sex of a person has to be deduced from other information, and in particular the name. This is easy in the case of Mauritians, but purely guesswork in the case of many non-Mauritian passengers.

It is fortnuate that for the intercensal period 1972-83 passenger traffic data are available separately for Mauritians for whom the errors in the coding of sex may be assumed negligible. It has therefore been possible to compare the sex composition of total arrivals and departures with that of Mauritian migrants only. It is also possible, by difference, to compare Mauritians and non-Mauritians. The data are presented in Appendix Table A4.

If the information for the whole period 1972-83 is summarized, the following picture is obtained.

		Arrivals(A)	Departures(D)	A-D
Males:	Mauritians	207,859	229,816	-21,957
	Non-Mauritians (by difference)	700,207	706,121	- 5,914
	Total	908,066	935,937	-27,871
Females:	Mauritians	119,517	142,468	-22,951
	Non-Mauritians (by difference)	554,545	546,156	+ 8,389
	Total	674,062	688,624	-14,562
Sex ratio:	Mauritians	174	161	
	Non-Mauritians	126	129	
	Total	135	136	

It is seen that, among males, about one-fourth of international passenger traffic is Mauritian whilst the proportion for females is about one-fifth. The excess of departures over arrivals for Mauritian males is 22,000 as compared to 23,000 females whereas for all passenger traffic taken as a whole, there is a net outmigration of 27,900 males against only 14,600 females. The sex bias is more strongly evident when only non-Mauritians are considered: males show a net out-migration of 5,900 whilst females show a net immigration of 8,400. This is something most unlikely since we would expect the net movement to be in the same direction for both males and females and also be near zero. It is possible that errors in the coding of nationality may be responsible for part of the wide divergence, but it is thought that, for the reasons described earlier, it is errors in the coding of sex for non-Mauritians which constitute the main contributing factor.

However, it is not thought that there has been a greater tendency to code doubtful cases to the male sex for departures and to the female sex for arrivals. It is more likely that there has been a tendency to code doubtful cases more to the male sex than female for both arrivals and departures. The reason why relatively more males are shown to have left the country is probably because there are more doubtful cases among departures since departing passengers are more likely to fill in their cards in a hurry, and the Immigration Officers are more under pressure to finish their job before the plane leaves. Furthermore, departures being more than arrivals it could be expected that they are subject to more errors.

4.5 Conclusion

Although international migration data show problems when total arrivals and departures are considered, many of these problems disappear

when the analysis is restricted to Mauritians only. Since Mauritians constitute 99.5% of the enumerated population in 1983 it is believed that the evaluation exercise is not much affected by this restriction. However, there is a definite need for improvement of migration data and this can easily be achieved to a large extent simply by including sex as a separate item on the embarkation-disembarkation card.

5. EVALUATION OF 1983 CENSUS

5.1 Introduction - Need and importance of evaluation, quality control and checks

5.1.1 Introduction

Evaluation or appraisal means the measurement of achievement against goals. Evaluation techniques are often necessary to gauge the success or otherwise of efforts made especially in regard to data collection. There are quantitative as well as qualitative techniques of evaluation. Data have to be subjected to both types of scrutiny in order to ensure that they are of acceptable standard and also for possible adjustments.

5.1.2 Need and importance of evaluation

A census operation involving data collection by a large number of enumerators from a larger number of respondents on a variety of topics, and where the collected data are passed through several stages before they see the light of day, is ideal ground for carrying out evaluative techniques, because at every step and stage in the census taking there are enough scope to introduce errors, biases and deficiencies.

No one can claim that a census is without its due share of problems. A perfect census is impossible. But a mathematically precise census is not required. Even when unlimited resources are expended, one cannot guarantee error-free censuses. However, for many decision-making and planning processes we do not need perfect data. What we may require is an idea of the range of variation, ideally not too wide, in the data being utilised. After all, even with very accurate data, since planning for the future implies some possibilities for variation in either direction, it is permissible to have some small range of variation for the base census data.

Thus, one of the most important uses of evaluation is to provide an idea of this range of possible variation in the data. Another aspect is that evaluation enables one to adjust the data for identified deficiencies. A third reason for evaluation studies is that such studies provide an insight not only into data quality and quantity, but also give us ideas as to what went wrong in the data collection and compilation so that future data production efforts, not only in the

country but also in other countries, could benefit from them. Again, evaluation studies provide confidence to the users regarding acceptability of the data and is also a protection to the data producers against unjustified criticisms and comments.

As mentioned earlier, evaluative studies probe into the quantitative and qualitative aspects of the data. Thus, the two types of errors being probed by evaluative studies fall into two broad headings - coverage and content errors. A census implies a complete coverage of all the persons at a specified time in a delimited territory. One question paramount after the enumeration is - has the census count covered all the people in the area? Again, a modern census does not stop at head count. It goes beyond an accounting of the number of persons in an area. It collects various socio-economic and other characteristics on the people. How acceptable is the information collected? Planners, policy makers and other users will be misled, if the census data are defective. Wrong data can lead to wrong decisions and conclusions. Every effort should therefore be made to collect data as accurately as is feasible. But, as in any social research effort, the possibilities for errors are many; for example, the count of heads could be defective because some areas were omitted or duplicated. Even when houses are visited, some household living within such houses may be omitted or duplicated, and even within households some members could be also omitted or duplicated. Again, information collected on persons could be affected by errors and biases.

Not only will the base data errors be carried forward, they may even get compounded and confounded with other errors. Such decisions based on wrong data have material, human and other cost implications.

Thus, an evaluation of census results and publication of that evaluation is an essential part of census. It is not only desirable but is essential and is the only protection against unjustified attacks on the accuracy of census and the competence and accuracy of its producers.

Hence the two broad objectives of an evaluative study are:

(i) To measure accuracy i.e. provide the range of variation of the data for the users in the appropriate analysis and application of the statistics; and

(ii) To identify the source of errors in order to know what groups, items or methodology produced the errors.

5.1.3 Quality control and checks

Admitting that data could be subjected to possible errors and biases, it should be the aim of its producers to guard against such deficiencies and at least minimise their incidence. It is a wise policy to anticipate the possible avenues for errors and biases and to plan for their minimisation, if not their elimination. No amount of adjustments can compensate for lack of care and caution in data collection and compilation.

Whether one collects statistical data using the complete census method or the sampling method, no one has ever been able to have complete information. There has always been a difference between the information collected and the true information i.e. there is an error or bias.

But since no two data collection exercises can ever be replicated, no one has ever known what the true information is for any population. Also, no two data collection exercises on the same population have produced exactly identical results. Sampling errors can be taken care of by choosing appropriate sampling methods, and techniques and right sample sizes. Non sampling errors are usually taken care of by quality control and checks. Quality control ensures that the quality of the data is satisfactory, adequate, dependable and economic. Thus the goal of checking and controlling the quality of data is to improve quality when data are collected and minimise loss of quality after their collection.

There are three major sources of error in data. They are (i) measurement errors due to omission or inclusion of areas, houses, households or persons within households, (ii) reporting/recording errors in the characteristics and (iii) imputation, guessing, etc.

Carelessness is one area of concern in data collection and strict supervisory and other checks are needed to ensure good quality of data. Misunderstanding of the purpose of the enumeration, the scope of the census or of questions might lead to biased data. Ignorance is another problem. Control checks would test whether the response rate is satisfactory, whether enumerators are asking the questions correctly and interpreting the answers in accordance with instructions. Whereas pilot testing, field controls, better training, publicity, clarity of questions, simplicity and ease in eliciting replies to queries, proper mapping and identification of enumeration areas and dwellings within stipulated areas might reduce some of these errors, it is still possible to have errors in the data. Errors could enter into data through other channels also like editing, coding, data processing and errors at the publishing stage. Data also could be lost or mutilated through improper handling and inadequate controls. Strict quality control checks are needed to avoid or at least minimise these possibilities, and should be built into the data collection, compilation and further processing of data at every stage.

5.1.4 Methods of evaluation

Thus, in spite of checks and controls, the data may be subject to some errors and biases and there is need for evaluation or appraisal of the information. There are broadly two methods - the direct and the indirect methods.

The direct methods involve the comparison or matching of the information collected in the census with those from another source such as post enumeration sample survey or from re-enumeration. A wide variety of statistical techniques are available for making indirect tests of

accuracy of census data. The underlying principle in all these techniques is very simple and involves testing the consistency of the census data with other existing data (external consistency checks) or within itself (internal consistency checks). External checks could be with data from other sources like those from the registration systems (vital statistics, movements of population) or from administrative operations (educational, health, labour, housing, etc.). Internal checks are those using relationships between age-sex groups, cohorts over time, etc.

In Mauritius, since no post enumeration checks were carried out, the evaluation will be based only on indirect techniques.

5.2 Coverage error

5.2.1 Evolution of population over time

To give the right perspective to the evaluation of the 1983 Census data it is necessary to look very briefly at the evolution of the population in the past. Appendix Table A1 shows the population of the Island of Mauritius as enumerated at each of the censuses taken since 1846. Before 1871, natural increase did not play an important role in population growth as the death rate was as high as, and often higher than, the birth rate. The rapid population growth in those years is due almost exclusively to the immigration of Indian labourers. These were brought to work on the sugar plantations when cheap labour became scarce after the abolition of slavery in 1833. It is interesting to note that because of the preponderance of men among the immigrants the proportion of males in the population was almost two thirds between 1846 and 1861.

The fall in the average annual rate of intercensal increase, from 5.87% during 1851-61 to 0.19% during 1861-71, is attributed partly to a slowing down of Indian immigration and partly to an epidemic of malaria in 1867. That year, a total of 40,000 deaths were registered as against 10,000 births.

By 1880, migration of Indian labourers had ceased to be an important factor in population growth. The contribution of natural increase was still small because of high mortality rates and relatively low birth rates, especially during the depression years of the 1930's. (Appendix Tables A2 and A3). The result was that the average annual rate of increase remained at a low of less than 0.5% throughout the period 1881 to 1944. With the decline of the effect of male favouring migration, the sex ratio declined steadily from around 190 before 1861 to 100.7 in 1944.

The post-war period witnessed an accelerated population growth due mainly to a rapid increase in the birth rate which attained a peak of 50 per 1,000 in 1950 (Appendix Table A 3). After 1950 the rate decreased slightly, levelling off at just below 40 per 1,000 in the early sixties. This relatively high birth rate and a rapid decrease in mortality resulting from advances in medical science

and the eradication of malaria, caused the inter-censal annual growth rate to jump from 0.44% in 1931-44 to 2.26% in 1944-52 and 3.12% in 1952-62. In 1962-72 the rate fell to 1.94% per annum as a result of a high reduction in fertility and, to a lesser extent, to emigration which, in the late sixties, accounted for a yearly decrease of between 3,000 and 4,000 in the total population. Mortality continued to decrease but at a much slower rate than in the immediate post-war period. The sex-ratio continued to decline from 100.7 in 1944 to 100.2 in 1972 partly because female mortality is generally lower than male mortality, but also probably because adult mortality for males has not declined as fast as for females.

During the last inter-censal period 1972-83, the general trend of fertility has been downward in spite of a temporary rise in the middle and late seventies. Net migration continued to be outward at a slightly higher rate of about 4,000 annually whilst improvements in mortality proceeded at a still lower pace than previously. Consequently the rate of growth of population declined further to 1.44% per annum during the period. The sex ratio declined further to 99.1, again probably because mortality continued to be more unfavourable to males.

Thus the evolution of the population from the historical to the present census seem plausible and no inconsistency of a major nature has been noted. We shall now take a closer look at population counts in recent periods to arrive at the relative accuracy of coverage of the population.

5.2.2 Balancing equation by sex

The table below compares, for each sex, the 1983 enumerated population with the expected population based on the 1972 census enumeration, registered births and deaths, and total international arrivals and departures.

Table 5.1 - Intercensal population change, 1972-83

	Male	Female	Total
Enumerated population 30.6.72	413,580	412,619	826,199
Births July 1972 - June 1983	126,186	121,944	248,130
Deaths July 1972 - June 1983	41,433	31,001	72,434
Arrivals July 1972 - June 1983	908,066	674,062	1,582,128
Departures July 1972 - June 1983	935,937	688,624	1,624,561
Expected population June 1983	470,462	489,000	959,462
Enumerated population	481,368	485,495	966,863
Excess of enumerated over expected	+10,906	- 3,505	+ 7,401
Excess as % of enumerated 1983 population	+ 2.3	- 0.7	+ 0.8

It is observed that the total enumerated population is about 7,400 more than expected. The evaluation of the 1972 census (6) had shown a deficit of about 10,000. Their survivors in 1983 would be about 8,500. It is therefore reasonable to assume that, on the whole, the 1983 enumeration has been better than that of 1972. However, whilst the deficit in 1972 was observed in both sexes, the gain of 7,400 in 1983 is made up of a gain of 10,900 males and a loss of 3,500 females. This finding appears not only unacceptable on its own, but is also inconsistent with the estimated deficit of 5,900 males and 4,100 females in 1972. There seems to be a problem with the sex distribution of one or more of the components entering the balancing equation.

A systematic sample of 5,000 census questionnaires, selected from 55 enumeration areas chosen with probability proportional to size, was checked for errors in coding of sex. The sample, representing about 2.5% of all questionnaires, indicated that sex had been properly coded at the census. Coding of sex on live birth and death cards was also checked on a sample basis by matching the name of the person with the sex code on computer print-outs of births and deaths records. Again there was no indication of erroneous coding or punching. It was finally found that the problem was coming from the international migration data. Sex is not asked explicitly on the embarkation-disembarkation card and has to be deduced from the name of the person if the title (Mr., Mrs., Miss) is not clearly indicated. The implications have been described earlier where it was also argued that more reliable results are obtainable if the analysis is carried out for Mauritians only, representing 99.5% of the enumerated population.

The advantage of considering Mauritians only is two-fold: firstly, the international passenger traffic data are more reliable, as explained earlier; and secondly, the flow data can be made to refer only to the population that really matters. All births and deaths relate to the Mauritian population, and it is reasonable to consider only Mauritian arrivals and departures in the balancing equation, especially since total arrivals and departures are disproportionately large when compared to the population. For about a million population, with 250,000 births and 72,000 deaths for the intercensal period, there were more than one and a half million total arrivals and about the same number of departures. The number of arrivals of Mauritians only was 327,000, that is about 21% of all arrivals, and the number of departures was 372,000, constituting about 23% of all departures. Hence, whenever data are available, the evaluation and analysis will lay greater stress on the Mauritian population rather than the total population.

Table 5.2 shows the balancing equation method applied to the Mauritian population only. The enumerated Mauritian population is about 10,400 in excess of the expected population, the gain being 5,300 for males and 5,000 for females. This sex breakdown looks more acceptable than the sex breakdown obtained above with the total population. Although these figures for Mauritians only are not strictly comparable with the findings of the 1972 evaluation on the total population, it is interesting to note the close agreement between the 1983 gain of 5,300 and the 1972 deficit of 5,900 for males, and the 1983 gain of 5,000 and the 1972

deficit of 4,100 for females. Generally speaking, the balancing equation method shows that the 1983 enumerated population is consistent with the 1972 census data, and with vital registration data, and migration statistics, if one allows for the observed deficit of 1972.

Table 5.2 - Intercensal change in Mauritian population, 1972-83

	Male	Female	Total
Enumerated Mauritian population 30.6.72	410,696	409,979	820,675
Births July 1972 - June 1983	126,186	121,944	248,130
Deaths July 1972 - June 1983	41,433	31,001	72,434
Arrivals of Mauritians July 1972 - June 1983	207,859	119,517	327,376
Departures of Mauritians July 1972 - June 1983	229,816	142,468	372,284
Expected Mauritian population June 1983	473,492	477,971	951,463
Enumerated Mauritian population	478,814	483,010	961,824
Excess of enumerated over expected	+ 5,322	+ 5,039	+ 10,361
Excess as % of enumerated	+ 1.1	+ 1.0	+ 1.1

5.2.3 Balancing equation by sex and single year of age

Vital registration data on births by sex and deaths by age and sex are available for the inter-censal period, as are also international arrivals and departures by age and sex. It has therefore been possible to survive the 1972 census population to obtain the expected 1983 population by sex and single year of age. The exercise has been done for both the whole population and for Mauritians only. Comparison of the enumerated with the expected population is shown in Table 5.3 for the whole population and in Table 5.4 for the Mauritian population. Because of the problems in migration data for non-Mauritians the analysis will be restricted to the Mauritian population only. Table 5.3 for the whole population is included because this is a convenient point to show the sex and single year of age distribution of all persons enumerated at the census.

Table 5.4 shows the census population is larger than the expected survivors of the 1972 population except for ages 0-5, 45-49 and 70-74 for males, and ages 0-10, 50-54 and 65-74 for females. Underenumeration is probably the explanation for the young ages, but otherwise this observation confirms Kumari's finding that the 1972 deficit was not restricted to specific age-groups. The deficit of males at ages 45-49 and 70-74 and of females at ages 65-74 may be due to slight overenumeration in the corresponding ages noted in 1972. The same explanation does not seem to hold for the deficit of females aged 50-54; this is probably due to some overstatement of age especially since the deficit in ages just below 55 is compensated for by gains in ages 55 and just above. Hence, if allowance is made for the deficit noted in 1972, and for some age errors which must be present, thenthe enumerated and expected population show a striking consistency with each other.

Table 5.3 - Comparison of 1983 enumerated population by single year of age with expected population based on 1972 census data

Males

Age (years)	Enumerated 1/	Expected	Difference	Age (years)	Enumerated	Expected	Difference
All ages	481,368	468,301	13,067				
Under 1	9,984	10,206	- 222	45	3,904	3,702	202
1	10,831	10,930	- 99	46	3,868	3,804	64
2	11,451	11,847	- 396	47	3,751	3,581	170
3	12,197	12,309	- 112	48	3,836	3,711	125
4	11,756	11,760	- 4	49	3,941	3,690	251
0 - 4	56,219	57,052	- 833	45 - 49	19,300	18,488	812
5	11,195	11,465	- 270	50	3,487	3,318	169
6	10,834	10,811	+ 23	51	2,990	2,665	325
7	9,923	9,890	+ 33	52	2,968	2,697	271
8	10,506	10,392	+ 114	53	3,292	3,144	148
9	10,075	9,768	+ 307	54	3,437	3,218	219
5 - 9	52,533	52,326	+ 207	50 - 54	16,174	15,042	1,132
10	8,999	8,858	141	55	3,444	3,267	177
11	9,174	9,050	124	56	3,394	3,505	- 111
12	9,636	9,270	366	57	3,713	3,665	48
13	10,458	10,184	274	58	3,384	3,422	- 38
14	9,905	9,573	332	59	3,361	3,572	- 211
10 - 14	48,172	46,935	1,237	55 - 59	17,296	17,431	- 135
15	10,947	10,541	406	60	2,756	2,942	- 186
16	10,892	10,405	487	61	2,615	2,913	- 298
17	11,924	11,403	521	62	2,481	2,361	120
18	11,730	11,324	406	63	2,031	1,889	142
19	11,986	11,702	284	64	2,005	1,793	212
15 - 19	57,479	55,375	2,104	60 - 64	11,888	11,898	- 10
20	11,543	11,509	34	65	1,796	1,796	-
21	11,170	11,049	121	66	1,990	1,834	156
22	10,363	10,191	172	67	1,593	1,588	5
23	10,288	10,396	- 108	68	1,587	1,664	- 77
24	9,759	9,616	143	69	1,699	1,753	- 54
20 - 24	53,123	52,761	362	65 - 69	8,665	8,635	30
25	9,274	8,907	367	70	1,302	1,220	82
26	9,753	9,273	480	71	1,182	1,185	- 3
27	9,312	8,758	554	72	1,108	960	148
28	8,243	7,673	570	73	854	790	64
29	8,164	7,955	209	74	792	737	55
25 - 29	44,746	42,566	2,180	70 - 74	5,238	4,892	346
30	8,660	8,246	414	75	744	813	- 69
31	7,894	7,753	141	76	621	457	164
32	8,622	8,667	- 45	77	503	371	132
33	7,595	7,329	266	78	466	504	- 38
34	6,492	6,367	125	79	386	322	64
30 - 34	39,263	38,362	901	75 - 79	2,720	2,467	253
35	6,220	5,747	473	80	366	293	73
36	5,597	5,332	265	81	230	256	- 26
37	4,625	4,278	347	82	239	225	14
38	5,377	4,970	407	83	194	99	95
39	5,159	4,603	556	84	129	36	93
35 - 39	26,978	24,930	2,048	80 - 84	1,158	909	249
40	3,973	3,601	372				
41	4,083	3,846	237	85 & over	447	258	189
42	3,811	3,287	524				
43	4,271	3,796	475				
44	3,831	3,444	387				
40 - 44	19,969	17,974	1,995				

1/ 408 cases of unknown age have been pro-rated

Table 5.3 - Comparison of 1983 enumerated population by single year of age with expected population based on 1972 census data (cont'd)

Females

Age (years)	Enumerated 2/	Expected	Difference	Age (years)	Enumerated	Expected	Difference
All ages	485,495	489,000	- 3,505				
Under 1	9,825	9,855	- 30	45	4,000	3,977	23
1	10,690	10,953	- 263	46	3,951	4,202	- 251
2	11,138	11,378	- 240	47	3,887	3,868	19
3	12,002	12,015	- 13	48	3,896	3,903	- 7
4	11,559	11,564	- 5	49	3,825	3,748	77
0 - 4	55,214	55,765	- 551	45 - 49	19,559	19,698	- 139
5	10,887	10,979	- 92	50	3,459	3,466	- 7
6	10,574	10,299	275	51	2,908	3,294	- 386
7	10,022	9,904	118	52	3,095	3,084	11
8	10,189	10,086	103	53	3,408	3,570	- 162
9	10,023	9,951	72	54	3,179	3,333	- 154
5 - 9	51,695	51,219	476	50 - 54	16,049	16,747	- 698
10	8,647	8,621	26	55	3,462	3,297	165
11	9,226	9,302	- 76	56	3,539	3,423	116
12	9,243	9,105	138	57	3,739	3,615	124
13	9,995	10,121	- 126	58	3,507	3,297	210
14	9,590	9,602	- 12	59	3,279	3,156	123
10 - 14	46,701	46,751	- 50	55 - 59	17,526	16,788	738
15	10,795	10,812	- 17	60	2,816	2,607	209
16	10,523	10,562	- 39	61	2,734	2,790	- 56
17	11,813	11,733	80	62	2,704	2,410	294
18	11,504	11,631	- 127	63	2,357	2,165	192
19	11,689	11,909	- 220	64	2,099	1,931	168
15 - 19	56,324	56,647	- 323	60 - 64	12,710	11,903	807
20	11,105	11,359	- 254	65	2,043	1,890	153
21	11,089	11,072	17	66	2,093	2,212	- 119
22	10,044	10,055	- 11	67	1,800	2,031	- 231
23	10,198	10,518	- 320	68	2,001	2,039	- 38
24	9,813	10,005	- 192	69	2,069	2,215	- 146
20 - 24	52,249	53,009	- 760	65 - 69	10,006	10,387	- 381
25	9,557	9,703	- 146	70	1,662	1,827	- 165
26	9,500	9,782	- 282	71	1,445	1,695	- 250
27	9,134	9,281	- 147	72	1,478	1,537	- 59
28	8,282	8,592	- 310	73	1,284	1,465	- 181
29	8,230	8,549	- 319	74	1,180	1,229	- 49
25 - 29	44,703	45,907	- 1,204	70 - 74	7,049	7,753	- 704
30	8,698	8,917	- 219	75	1,181	1,238	- 57
31	7,667	7,980	- 313	76	996	970	26
32	8,284	8,294	- 10	77	831	802	29
33	7,456	7,706	- 250	78	803	846	- 43
34	6,593	6,819	- 226	79	770	703	67
30 - 34	38,698	39,716	- 1,018	75 - 79	4,581	4,559	22
35	6,420	6,553	- 133	80	676	631	45
36	5,523	5,735	- 212	81	515	584	- 69
37	4,935	5,074	- 139	82	523	389	134
38	5,716	5,818	- 102	83	461	416	45
39	5,248	5,196	52	84	336	336	-
35 - 39	27,842	28,376	- 534	80 - 84	2,511	2,356	155
40	4,199	4,127	72				
41	4,158	4,243	- 85	85 & over	1,556	1,103	453
42	3,877	3,691	186				
43	4,432	4,378	54				
44	3,856	3,877	- 21				
40 - 44	20,522	20,316	206				

2/ 253 cases of unknown age have been pro-rated

Table 5.4 - Comparison of 1983 census enumerated Mauritian population by single year of age with expected Mauritian population based on 1972 census data

Males

Age (years)	Enumerated	Expected	Difference
All ages	478,814	473,492	5,322
Under 1	9,949	10,127	- 178
1	10,781	10,900	- 119
2	11,399	11,605	- 206
3	12,153	12,397	- 244
4	11,699	11,912	- 213
0 - 4	55,981	56,941	- 960
5	11,130	11,413	- 283
6	10,786	10,647	139
7	9,871	9,837	34
8	10,449	10,399	50
9	10,025	9,995	30
5 - 9	52,261	52,291	- 30
10	8,948	9,169	- 221
11	9,118	9,244	- 126
12	9,599	9,342	257
13	10,418	10,260	158
14	9,870	9,767	103
10 - 14	47,953	47,782	171
15	10,905	10,639	266
16	10,860	10,565	295
17	11,891	11,674	217
18	11,693	11,588	105
19	11,954	11,743	211
15 - 19	57,303	56,209	1,094
20	11,510	11,541	- 31
21	11,144	10,943	201
22	10,323	10,286	37
23	10,266	10,070	196
24	9,729	9,461	268
20 - 24	52,972	52,301	671
25	9,235	8,699	536
26	9,713	9,455	258
27	9,258	9,029	229
28	8,205	7,842	363
29	8,122	7,980	142
25 - 29	44,533	43,005	1,528
30	8,611	8,087	524
31	7,853	7,839	14
32	8,573	8,495	78
33	7,539	7,322	217
34	6,445	5,922	523
30 - 34	39,021	37,665	1,356
35	6,175	5,746	429
36	5,544	5,292	252
37	4,591	4,174	417
38	5,346	5,586	- 240
39	5,123	4,896	227
35 - 39	26,779	25,694	1,085
40	3,937	3,900	37
41	4,041	3,986	55
42	3,775	3,319	456
43	4,241	4,281	- 40
44	3,792	3,843	- 51
40 - 44	19,786	19,329	457
45	3,871	3,797	74
46	3,839	4,068	- 229
47	3,728	3,822	- 94
48	3,806	3,817	- 11
49	3,917	3,907	10
45 - 49	19,161	19,411	- 250
50	3,462	3,267	195
51	2,967	3,056	- 89
52	2,942	3,018	- 76
53	3,264	3,233	31
54	3,418	3,272	146
50 - 54	16,053	15,846	207
55	3,425	3,472	- 47
56	3,373	3,505	- 132
57	3,698	3,851	- 153
58	3,370	3,481	- 111
59	3,343	3,361	- 18
55 - 59	17,209	17,670	- 461
60	2,734	2,774	- 40
61	2,595	2,667	- 72
62	2,465	2,333	132
63	2,013	1,943	70
64	1,986	1,920	66
60 - 64	11,793	11,637	156
65	1,773	1,859	- 86
66	1,978	1,763	215
67	1,582	1,534	48
68	1,574	1,713	- 139
69	1,686	1,719	- 33
65 - 69	8,593	8,588	5
70	1,296	1,332	- 36
71	1,167	1,293	- 126
72	1,091	1,082	9
73	843	862	- 19
74	782	714	68
70 - 74	5,179	5,283	- 104
75	735	821	- 86
76	612	496	116
77	495	438	57
78	458	469	- 11
79	377	368	9
75 - 79	2,677	2,592	85
80	359	306	53
81	224	261	- 37
82	229	294	- 65
83	189	70	119
84	123	50	73
80 - 84	1,124	981	143
85 & over	436	267	169

Table 5.4 - Comparison of 1983 census enumerated Mauritian population by single year of age with expected Mauritian population based on 1972 census data (cont'd)

Females

Age (years)	Enumerated	Expected	Difference	Age (years)	Enumerated	Expected	Difference
All ages	483,010	477,971	5,039				
Under 1	9,800	9,924	- 124	45	3,985	4,070	- 85
1	10,635	10,875	- 240	46	3,934	3,995	- 61
2	11,099	11,215	- 116	47	3,853	3,672	181
3	11,950	11,969	- 19	48	3,870	3,781	89
4	11,507	11,586	- 79	49	3,797	3,707	90
0 - 4	54,991	55,569	- 578	45 - 49	19,439	19,225	214
5	10,838	10,997	- 159	50	3,444	3,439	5
6	10,523	10,539	- 16	51	2,886	3,194	- 308
7	9,962	10,131	- 169	52	3,079	3,024	55
8	10,133	10,231	- 98	53	3,394	3,581	- 187
9	9,968	9,979	- 11	54	3,158	3,336	- 178
5 - 9	51,424	51,877	- 453	50 - 54	15,961	16,574	- 613
10	8,602	8,734	- 132	55	3,450	3,301	149
11	9,175	9,129	46	56	3,521	3,370	151
12	9,205	8,890	315	57	3,727	3,473	254
13	9,953	10,030	- 77	58	3,493	3,231	262
14	9,554	9,423	131	59	3,258	3,256	2
10 - 14	46,489	46,206	283	55 - 59	17,449	16,631	818
15	10,766	10,652	114	60	2,798	2,721	77
16	10,492	10,354	138	61	2,721	2,750	- 29
17	11,785	11,519	266	62	2,688	2,344	344
18	11,481	11,554	- 73	63	2,340	2,144	196
19	11,669	11,695	- 26	64	2,087	1,872	215
15 - 19	56,193	55,774	419	60 - 64	12,634	11,831	803
20	11,075	10,879	196	65	2,036	1,825	211
21	11,053	10,787	266	66	2,082	2,188	- 106
22	10,005	9,721	284	67	1,793	1,995	- 202
23	10,162	10,103	59	68	1,982	1,942	40
24	9,774	9,951	- 177	69	2,054	2,098	- 44
20 - 24	52,069	51,441	628	65 - 69	9,947	10,048	- 101
25	9,500	9,451	49	70	1,650	1,722	- 72
26	9,455	9,534	- 79	71	1,432	1,589	- 157
27	9,090	9,086	4	72	1,470	1,434	36
28	8,224	8,284	- 60	73	1,269	1,351	- 82
29	8,181	8,093	88	74	1,169	1,164	5
25 - 29	44,450	44,448	2	70 - 74	6,990	7,260	- 270
30	8,635	8,385	250	75	1,174	1,107	67
31	7,622	7,533	89	76	987	917	70
32	8,251	8,043	208	77	824	720	104
33	7,404	7,290	114	78	793	737	56
34	6,544	6,322	222	79	758	667	91
30 - 34	38,456	37,573	883	75 - 79	4,536	4,148	388
35	6,363	5,983	380	80	670	615	55
36	5,486	5,249	237	81	505	626	- 121
37	4,897	4,667	230	82	517	431	86
38	5,671	5,472	199	83	454	374	80
39	5,207	4,733	474	84	329	291	38
35 - 39	27,624	26,104	1,520	80 - 84	2,475	2,337	138
40	4,158	3,967	191	85 & over	1,531	1,079	452
41	4,121	4,210	- 89				
42	3,834	3,486	348				
43	4,407	4,313	94				
44	3,832	3,870	- 38				
40 - 44	20,352	19,846	506				

5.2.4 Growth rate of population over time and sex ratios

Another way of looking at the consistency of the enumerations over time is by study of growth rates and sex rates.

Table 5.5 shows the annual growth rate of the population for each sex separately and for each of the last three intercensal periods. The growth rate for males has declined by 55% from 3.11 during 1952-62 to 1.39 in 1972-83; the rate for females declined by 52% from 3.13 to 1.49

Table 5.5 - Population growth

Intercensal period	Annual growth rate (%)			Natural growth rate (%)
	Male	Female	Both sexes	Both sexes
1952-62	3.11	3.13	3.12	2.98
1962-72	1.91	1.98	1.94	2.27
1972-83	1.39	1.49	1.44	1.79

during the same time span. Thus the decline in the growth rate has been slightly less for females. Furthermore, during each of the intercensal periods, not only has the female growth rate been higher than the male growth rate, but the gap between the two has been widening from about 0.6% in 1952-62 to about 7% in 1972-83. This could be due to improvement in the enumeration of females, lesser outmigration of females, or improvement in female mortality. The first two explanations do not seem to hold here since the balance equation showed that improvement in enumeration occurred for both sexes, whilst migration data indicated slightly higher outmigration for females. It is possible therefore that the higher growth for females is due to improvement in female mortality, especially since Titmuss and Abel-Smith (7) noted that female mortality had been high in the past.

A consequence of the higher female growth rate has been a decline in the sex ratio of the population. Table 5.6 shows that this ratio declined continuously from around 101 in the fifties to 99 in the early eighties. However a small part of this decline could perhaps be

Table 5.6 - Sex ratio of the population

1952	1962	1972	1983
101.1	100.9	100.2	99.1

attributed to a slight decline in the sex ratio at birth from an average of 103.9 in 1962-72 to 103.3 in 1972-83.

The rapid fall in fertility between the 1952-62 (crude birth rate of 41) and 1962-72 (CBR of 33) census intervals is clearly reflected in the falling growth rate between the periods. Some fall in mortality (CDR of 12 in 1952-62 compared with CDR of 9 in 1962-72) compensated for the fall in fertility. The fall in fertility and mortality has been less rapid in 1972-83 (CBR of 25 and CDR of 7). The rate of natural

growth given in Table 5.5 shows a close parallel with the observed population growth rate and the small discrepancies can be explained by the reported migration figures. Thus there is no anomaly shown by the falling growth rates. Again the fall in mortality has been more among females than males and the falling sex ratio can largely be explained by differential mortality.

5.2.5 Age composition of the population over time

Yet another way of assessing the quality of census enumerations is by study of age-sex distribution over time.

The evolution of the age structure of the population during the last two decades is shown in Table 5.7. The trend of changes has been broadly similar for both sexes: a decline in the proportion of children aged 0-4 and 5-14 years, an increase in the proportion of adults, and a relatively much smaller increase in the proportion of old persons aged 60 years and above.

Table 5.7 - Age composition of population by sex(%)

Age-group	1962		1972		1983	
	Male	Female	Male	Female	Male	Female
0 - 4	16.6	16.3	12.4	12.2	11.7	11.4
5 - 14	28.9	28.8	28.1	27.6	20.9	20.2
15 - 44	39.4	38.7	42.8	42.8	50.1	49.5
45 - 59	10.6	9.8	11.4	10.7	11.0	10.9
60 +	4.5	6.3	5.2	6.7	6.2	7.9

The decline of the proportion of children from about 16% in 1962 to about 12% in 1972 i.e. about 25% is a direct consequence of the rapid fall in fertility (of about 35%) during that period. Fertility having attained a very low level in the early seventies. further reductions proceeded at a much slower pace with even some rise for a short period, so that the proportion of children aged 0-4 declined only by less than one point from 1972 to 1983. The proportion aged 5-14 years declined only marginally from 29% in 1962 to 28% in 1972 because the large cohorts born during the high fertility period had entered this age-group in 1972; most of these persons had moved out of the 5-14 age group in 1983 when the corresponding proportion dropped to 21%.

During the same period the proportion of adult population aged 15-44 increased steadily from about 39% in 1962 to 43% in 1972 and 50% in 1983. As regards the group 45-59 years, the proportion for females showed a small but steady increase whilst the proportion for males declined slightly in 1983 after having shown an increase from 1962 to 1972. The proportion of old persons aged 60 years and above increased for both sexes, but as expected from the higher male mortality, the proportion of males in this group is lower than females.

All these changes point to the fact that the age-sex composition is depicting the fertility change well and that the

population of the Island of Mauritius has undergone some ageing during the last twenty years mainly as a result of fertility decline. In fact, the mean age of the population increased by 3 years between 1962 and 1983, for both males and females, as shown in Table 5.8. Similarly the median age increased by about 5 years. Both statistics indicate that the ageing has been faster during 1972-83 as compared

Table 5.8 - Mean and median age of the population

	1962		1972		1983	
	Male	Female	Male	Female	Male	Female
Mean age	23.01	23.71	23.66	24.66	26.04	27.06
Median age	17.51	17.66	19.61	19.20	22.49	23.15

to the preceeding decade, and this applied to both males and females. As expected, the mean and median for females are higher than for males. However the gap is twice the usual half year and seems to be widening, probably because of unfavourably high mortality for males as compared to females.

5.2.6 Child - woman ratio

The child - woman ratio (defined as the number of children aged 0-4 years per 1,000 women in the age-group 15-44) has declined by 33% from 853 in 1962 to 574 in 1972, and by a further 19% during 1972-83 to reach 464 in 1983. These are in tune with the previous observation of a fast fertility fall during 1962-72 (of 35%) and a slower decline during 1972-83 (of 17%) and indicate nothing abnormal about enumeration of children.

5.2.7 Dependency ratio

Table 5.9 shows the evolution of the dependency ratio, which is here defined as the ratio of children aged 0-14 and old persons aged 60 and above, per 1,000 persons in the age group 15-59 years. If both sexes are considered, the ratio shows a decline of 17% during 1962-72

Table 5.9 - Dependency ratio by sex

	1962	1972	1983
Male	997	844	635
Female	1,061	866	654
Both sexes	1,028	855	645

and 25% during 1972-83 and is similar for each sex taken separately. However the ratio for females is always higher than the average because of the relatively larger number of females in the old ages.

Once again we see the young population of 1962, characterized by a large number of children due to high fertility, evolving to an older structure with increasing numbers in the economically active age-groups. And again, the change is shown to have been faster during 1972-83 as compared to 1962-72. This change has important policy implications since more and more jobs have to be found for the larger number of people in the economically active age-groups. However, the figures are in tune with fertility-mortality data and no anomaly is shown by these ratios; hence it seems that generally the age distribution by sex reported is of acceptable quality. It can be verified that for 1983 the expected child-woman ratio for a mortality level 22 and growth rate 1.4% per annum (West Model Life Tables) will be 505 as compared to the observed 464, and hence they are consistent under the small under-enumeration of child population noted below.

5.2.8 Underenumeration of children

Although evaluation of the 1972 census data had indicated underenumeration to be slight at that census, the 1983 data seem to indicate some underenumeration, although not to the extent found in 1962. Table 5.3, presented earlier, shows that for the total population including non-Mauritians, the age-group 0-4 had a deficit of 833 males and 551 females when compared to survivors from births adjusted for migration. A deficit of 270 males and 92 females is also observed at age 5, but this could be due to some shifting to higher ages, especially since for children's admission to primary school, the minimum age stipulated is 5 years.

Table 5.4 for the Mauritian population shows that 960 males were missed in the 0-4 age-group as compared to 578 females. Males also show a deficit of 283 at age 5, but females seem to have been missed at each of the ages 5 to 9, the total deficit for the age group being 453.

Thus the data indicate less underenumeration for females than for males in the age-group 0-4, but in the age-group 5-9, underenumeration of females is present to a much higher extent than for males.

These observations are not in accordance with expectations. Why should males be more underenumerated than females? Could it be because parents have a greater tendency to send their sons to live with relatives in an ateempt to put them nearer to better schools? But this seems unlikely, because the schools would have to be nursery schools, and parents would be reluctant to confide very young children to relatives. The argument could be applied to the 5-9, age-group, but then it is the females who show a much larger deficit. No straightforward explanation seems to be forthcoming, and it is possible that the data are showing the net effect of a number of factors: some underenumeration no doubt, but also errors in age reporting and more particularly the problems with the age and sex distribution of international migration. In any case the numbers involved are only marginal.

5.3 External consistency checks

5.3.1 Comparison of Housing Census count with Population Census count

The total number of households enumerated at the Housing Census taken between mid-March and May was 197,700 as compared to 199,900 at the Population Census taken at the beginning of July. The difference of 2,200 can be explained partly by the splitting of households and creation of new households, but also by a tendency on the part of some Chief Enumerators to consider all persons living in one housing unit as one household although this might not have been the case. The reason could have been inaccurate reporting on the part of the population, or inadequate probing on the part of fieldstaff, or both. The errors seem to have been sorted out at the Population Census which used a more detailed and probing questionnaire to be filled in by the household itself.

As regards the population count, there is a remarkable consistency between the two enumerations if allowance is made for some growth between the two periods: there were 965,500 persons at the Housing Census compared to 966,900 at the Population Census. The household size estimated from the Housing Census is therefore 4.88 as compared to 4.84 from the Population Census.

5.3.2 Comparison of census data with education statistics

The Ministry of Education regularly compiles statistics of the school population from returns made by heads of all schools in the country. It has been possible to obtain a tabulation of the school population by single year of age and sex for 1983 together with a separate tabulation by grade and sex. Table 5.10 compares, for each sex and by five year age-groups, the number of students in schools with the numbers reported as attending school at the census. The reason for analysing the data in 5 year age groups is to reduce the effect of errors in the single year of age data from both sources, and also because the single year of age data

Table 5.10 - Comparison of data on school population by age-group and sex from census and school system

Age-group	Male			Female		
	Census data	School Statistics	% difference	Census data	School Statistics	% difference
5-9	51,438	50,496	2	50,632	49,686	2
10-14	38,082	37,769	1	34,992	34,226	2
15-19	19,456	18,840	3	16,758	16,160	4
5-19	108,976	107,105		102,382	100,072	
Primary (5-12)	76,392	75,045	1.8	74,130	72,534	2.2
Secondary (13-19)	32,584	32,060	1.6	28,252	27,538	2.6

are not strictly comparable, the administrative statistics having been collected in April 1983 and the census having been taken in July.

The analysis shows that consistently more children are reported as attending school at the census than is actually shown by the school statistics. The difference is about 2% for both males and females aged 5-9; for the 10-14 age-group it is 1% for males but 2% for females, whilst for the 15-19 age-group it is 3% for males and 4% for females.

If we split the age range into two, the first from 5 to 12 corresponding broadly to primary schooling, and the second from 13 to 19 to secondary education, then we find that the exaggeration in reporting school attendance at the census is higher for females at both primary and secondary levels. Within each sex, the exaggeration is higher at the primary level for males, but at the secondary level for females.

Some exaggeration is also observed in the reporting of grade being attended. Table 5.11 shows that Standard I at the Primary level

Table 5.11 - Comparison of education data from census and education system

	Male		Female	
	Census	School	Census	School
Primary				
Standard I	10,746	11,126	10,483	10,781
Standard II	11,074	10,710	10,660	10,321
Standard III	13,027	13,592	13,140	13,540
Standard IV	9,971	10,374	9,625	10,067
Standard V	9,421	8,789	9,286	8,843
Standard VI	12,917	12,918	11,961	12,194
Total	67,156	67,509	65,155	65,746
Secondary				
Form I	7,437	7,587	6,693	6,702
Form II	6,352	6,497	6,066	6,325
Form III	6,520	6,639	5,890	5,849
Form IV	7,695	8,034	7,120	7,343
Form V	8,668	7,770	7,460	6,956
Form VI	3,244	3,530	2,456	2,731
Total	39,916	40,057	35,685	35,906
All grades	107,072	107,566	100,840	101,652

is avoided in favour of Standard II whilst some children in Standards II and III may have been reported as being in Standard V. At the Secondary level all lower forms seem to have lost to the highly preferred Form V, but Form V seems to have gained from Form VI as well.

It is to be noted that the census data are not strictly comparable with the school statistics because the latter also include more than 4,000 children under five and about 700 persons aged 20 and over at various grades.

5.4 Content error

5.4.1 Digit preference

Digit preference at the 1983 census has been studied on its own and has also been compared with digit preference at the two previous censuses. The analysis for 1972 and 1983 was done on both the Mauritian and the total enumerated population by computing Myer's indices and Preference Pattern Indices. Neither the overall indices nor the individual deviations for each digit, showed any difference between the Mauritian and the total population, and this applies to both 1972 and 1983 data. Hence all digit preference analysis may be done on the total enumerated population only; the reason for choosing the total rather than the Mauritian population being that comparisons can also be made with 1962 for which data are available only for the total population.

Myer's index has been calculated for the censuses of 1962, 1972 and 1983 separately for each sex and the individual percentages for each digit and the overall indices are shown in Table 5.12. It is observed that the reporting of age has improved considerably from 1962 to 1972, Myer's index having decreased by more than 50% for both males and females. However, from 1972 to 1983 only a slight improvement is observed for females, and the male data has in fact deteriorated. But Myer's index is affected by the relative size of the population at the different ages, and therefore may not be the best index of preference for the Mauritian population which has been shown to be affected by migration and fluctuations in vital rates. Ramachandran's Preference Pattern Index (PPI) standardizes for fluctuations due to births, deaths and migration and is perhaps a better indicator for the Mauritian data. The individual percentages and the overall index are given in Table 5.13.

The PPI confirms the improvement in age reporting for both males and females from 1962 to 1972. It also shows an improvement, although slight, for both sexes during 1972-83, unlike Myer's index which showed an improvement for females only and a slight deterioration for males. Both indices also show that age is more accurately reported for males than for females at all three censuses. The gap has decreased considerably since 1962, but has not been completely bridged even in 1983.

Table 5.12 - Myer's index, 1962, 1972 and 1983

Digit	Individual percentages					
	Male			Female		
	1962	1972	1983	1962	1972	1983
0	9.91	9.78	10.07	10.56	9.83	10.03
1	9.10	9.93	9.75	8.94	9.79	9.70
2	10.58	10.03	9.86	9.90	10.11	9.73
3	9.59	9.62	10.01	9.50	9.61	10.04
4	9.90	9.89	9.56	9.75	9.87	9.51
5	10.53	10.23	9.78	11.25	10.19	9.98
6	9.56	9.90	10.00	9.81	10.03	9.91
7	10.37	10.22	10.14	10.30	10.51	10.23
8	10.88	10.53	10.24	10.59	10.49	10.38
9	9.58	9.87	10.58	9.20	9.57	10.48
Overall index	4.72	2.02	2.09	5.50	2.66	2.33

Table 5.13 - Preference Pattern Index, 1962, 1972, 1983

Digit	Individual Percentages					
	Male			Female		
	1962	1972	1983	1962	1972	1983
0	10.03	9.79	9.92	10.72	9.82	9.87
1	9.12	9.67	9.57	8.71	9.59	9.47
2	10.55	9.85	9.68	10.48	9.93	9.64
3	9.45	9.50	9.92	9.35	9.50	10.04
4	9.78	9.91	9.62	9.51	9.71	9.53
5	10.38	10.20	9.83	11.09	10.19	9.99
6	9.43	9.89	10.06	9.55	10.02	10.01
7	10.32	10.40	10.18	10.13	10.57	10.28
8	11.02	10.90	10.42	10.75	10.73	10.57
9	9.92	9.90	10.82	9.70	9.94	10.59
PPI	4.60	2.99	2.94	6.36	3.02	2.99

Table 5.14 shows the most preferred digits in decreasing order of preference at the three censuses. In 1962 the order of

Table 5.14 - Most preferred digits, 1962, 1972, 1983

	Male			Female		
	1962	1972	1983	1962	1972	1983
PPI	8,2,5,7	8,7,5	9,8,7,6	5,8,0,2,7	8,7,5	9,8,7
Myers	8,2,5,7	8,5,7	9,8,7	5,8,0,7	7,8,5,2	9,8,7

digit preference is 8,2,5,7 for males and 5,8,0,2 for females. One reason for the high preference for 8 could be the result of year of birth being reported as 1914, when the First World War started, especially since age 48 is the age ending in 8 which stands out as having attracted the most persons. However, this must also be, in part at least, a result of the relatively large birth cohort in 1913-14 who would be attaining age 48 in 1962.

Rounding of ages seems more prominent in 1962 than in 1972 and 1983, as is indicated by the relatively high preference for digit 5 among males, and the digits 5 and 0 for females. There is also a higher tendency in 1962 to round off years of birth to years ending in 0 and 5; this is indicated by preference for digits 2 and 7. Furthermore, rounding of ages affects females more than males. In fact the preference for 2 among males could be due in part to a greater tendency to estimate the age from the year of birth, whilst for females the age itself could have been subjected to the rounding. It is possible that in the case of married women who usually live away from their parents, reference to their data of birth is less common than reference to their age.

The 1972 and 1983 data indicate a general preference for the higher digits only. Digit 9 is first preference in 1983, but is not preferred in 1972. Digits 7 and 8 are preferred both in 1972 and 1983.

Preference for 9 in 1983 and 8 in 1972 is probably due to the same reasons which caused 8 to be preferred in 1962: the possible use of 1914 as a reference point for establishing age in many cases, and also the relatively high birth cohort of 1913-14 which contributed to a relatively large population aged 48 in 1962, 58 in 1972 and 69 in 1983.

Preference for 7 in 1972 and 8 in 1983 is also probably partly the result of the use of 1945 as a reference point for reckonning age: that year there was a most violent cyclone, and also the Second World War came to an end. Another contributing factor must have been the relatively higher number of births in 1944-45 whose effect is evident at age 27 in 1972 and at age 38 in 1983. Whilst preference for 7 in 1972 and in 1962 may partly be attributed to the rounding of year of birth to years ending in 5, the same cannot be said of the preference for that digit in 1983. The single year of age data for 1983 show a relatively high population for age 57 among both males and females. This is due to the large birth cohort in 1925-26: in fact births were almost 1,000 higher than in the preceding twelve months and almost 700 higher than in the

succeeding twelve months. Hence the preference for 7 in 1983 must derive, in part at least, from the high number of births in 1925-26. The effect is also apparent in 1972 which had a relatively large population aged 46, but seems to be absent from reported age 36 in 1962, probably because the rounding to age 35 was more pronounced.

The conclusions that can be drawn from the analysis of digit preference are as follows:

(i) Age errors resulting from digit preference have declined considerably from the 1962 census to the 1972 census. The decline from 1972 to 1983 has been negligible probably because the degree of preference was already very low in 1972.

(ii) Even in 1983 age is slightly better reported for males than for females, although the gap has been considerably reduced since 1962.

(iii) The unusual preference for higher digits in 1983 and to a lesser extent in 1972 is probably attributable partly to the reference to specific events in reckoning age or year of birth, and partly to relatively large birth cohorts at certain periods in the past.

(iv) Digit preference in 1983 is so low that both Myer's Index and the PPI may not go much below the levels already attained because they are affected by genuine fluctuations in births, deaths and migration. Such fluctuations are expected to have a relatively higher effect on small populations like the Mauritian one. Myer's Index has been computed with the births registered for each of the years July 1909 - June 1910 to July 1968 - June 1969, that is the birth cohorts corresponding to ages 10 to 69 in 1983. The result is an index of 1.80 for males and 1.90 for females whilst the corresponding values for the 1983 population data are only 2.09 for males and 2.33 for females

5.4.2 Vertical consistency checks for age reporting error

If fertility decline is not too fast and if a population is not much affected by selective migration then the percentage of population in given ages are **expected** to decline more or less smoothly with increasing age. Any fluctuations from this pattern, unless explainable by genuine variations in births, deaths or migration, point to age errors in the data. Table 5.15 shows the percentage age composition of the population by five-year age-groups for the censuses of 1962, 1972 and 1983. It is observed that for 1962 the age group 35-39 has a higher percentage than the lower age-group for both males and females. Whilst this can be attributed to shifting of persons from adjacent ages it is more likely that the fluctuation is genuine, especially since the phenomenon is observed both in 1972 in age-group 45-49 and in 1983 in

age-group 55-59. If we look at registered births for 1923-27 it is found that in fact the number of births was much higher than the adjacent years; the large number of births for 1925-26 was also pointed out when digit preference was analysed. Hence the high percentages observed for both sexes in age group 35-39 in 1962, 45-49 in 1972 and 55-59 in 1983 seem explicable. The large number of births during the peak

Table 5.15 - Age composition (%) of Mauritian population, Island of Mauritius, 1962, 1972 and 1983 Censuses

Age group (years)	Male			Female		
	1962	1972	1983	1962	1972	1983
0 - 4	16.6	12.5	11.7	16.3	12.2	11.4
5 - 9	15.4	14.6	10.9	15.3	14.3	10.6
10 - 14	13.5	13.7	10.0	13.5	13.4	9.6
15 - 19	9.1	12.2	11.9	9.1	12.3	11.6
20 - 24	6.9	9.7	11.0	7.0	9.6	10.8
25 - 29	6.4	6.3	9.3	6.5	6.5	9.2
30 - 34	5.8	5.1	8.2	5.7	5.2	8.0
35 - 39	6.4	5.0	5.6	5.9	4.9	5.7
40 - 44	4.8	4.4	4.1	4.4	4.3	4.2
45 - 49	4.4	4.8	4.0	3.9	4.5	4.0
50 - 54	3.5	3.5	3.4	3.1	3.2	3.3
55 - 59	2.7	3.0	3.6	2.7	3.0	3.6
60 - 64	2.1	2.2	2.5	2.3	2.3	2.6
65 - 69	1.2	1.5	1.8	1.6	1.7	2.1
70 - 74	0.7	0.9	1.1	1.2	1.2	1.5
75 - 79	0.3	0.4	0.6	0.7	0.7	0.9
80 +	0.2	0.2	0.3	0.6	0.7	0.8
N/S	0.0	0.1	0.1	0.0	0.1	0.1
Total	100.0	100.1	100.1	99.8	100.1	100.0

Note: Data on Mauritian population is not available for 1962 - the percentage distribution refer to the total population (including non Mauritians)

Figure 5·1 - Population Pyramid by Single Year of Age, 1972 Census

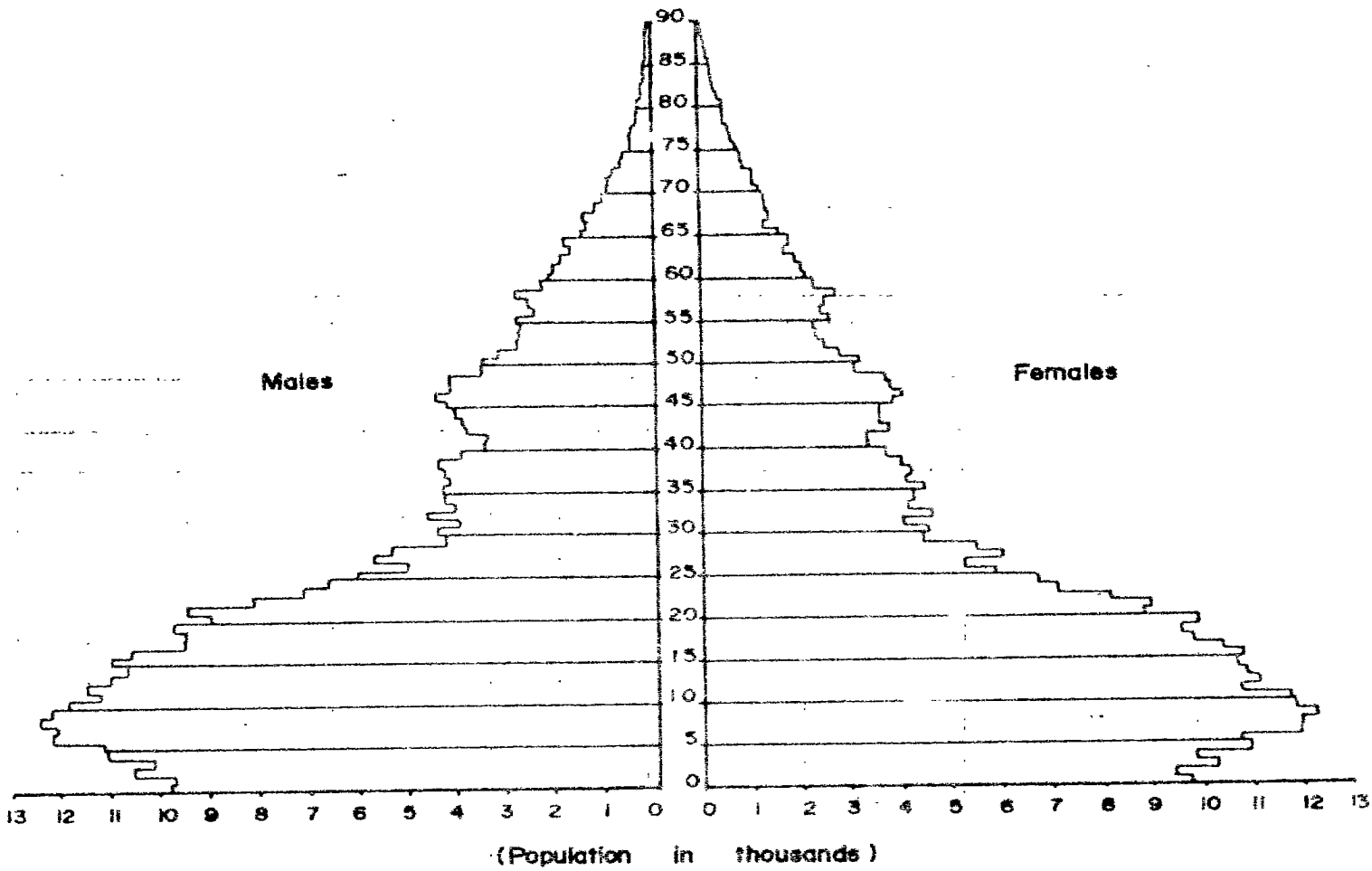
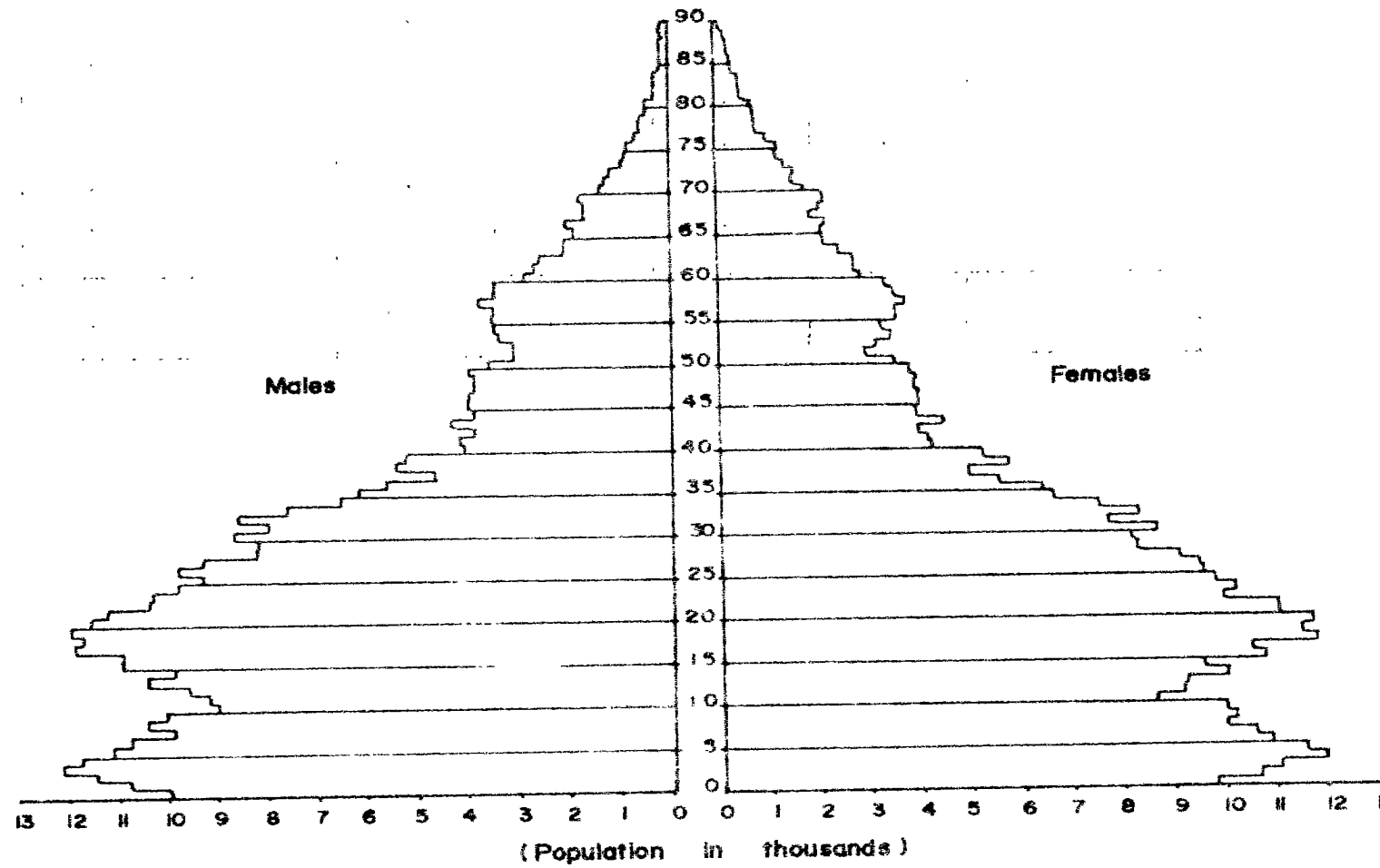


Figure 5·2 - Population Pyramid by Single Year of Age, 1983 Census



fertility period 1963-67 is also responsible for the apparent aberration in age-group 5-9 in 1972 and 15-19 in 1983 for both sexes.

The data also show some overstatement of age after 65 for both sexes since the percentages do not decline fast enough.

Apart from these observations the age composition of the 1983 census population shows no striking anomaly. Given that the population has in fact been affected by rapid changes in fertility and also by external migration, we should not try to read too much into the percentage age composition. The distribution of population by single year of age and sex for the 1972 and 1983 censuses is depicted by the population pyramids presented as figures 5.1 and 5.2.

The age-ratio technique is a more refined technique than the study of percentage age composition. It has been applied to the total population data by sex and single year of age for the censuses of 1962, 1972 and 1983, and also to the Mauritian population for 1972 and 1983. There is not much difference in the results obtained for the Mauritian population and the total population and the scores given below are for the total population only to allow comparisons with 1962 for which Mauritian data is not available. The definition used for the age ratio has been that used by the U.N., that is, the ratio of the population in a given age to half the sum of the population in adjacent ages expressed per 100. The more elaborate definitions of the U.S. Census Bureau and the Ramachandran methods have not been used because in the absence of digit preference as noted for the data obtained during 1972 and 1983, all three methods differ very little from each other.

The age-ratio scores for males and females calculated for the range 0-69 years are shown in Table 5.16. They confirm the

Table 5.16 - Age ratio, sex ratio and joint scores, 1962, 1972 and 1983 censuses

		1962	1972	1983
Age ratio score:	Male	7.44	5.45	5.23
	Female	10.28	5.24	4.92
Sex ratio score		6.17	3.02	3.15
Joint score		36.23	19.75	19.60

observation made earlier to the effect that the accuracy of age data has improved considerably from 1962 to 1972, and that the improvement from 1972 to 1983 has been marginal probably because of the high level of accuracy already attained. But contrary to what was shown by the digit preference indices, the age ratio scores indicate that the female data which was poorer than the male data in 1962 has improved faster, and to such an extent as to be marginally better than the male data in 1972 and 1983. However, given the low levels of inaccuracy shown by all indicators, the only firm conclusion that can be made is that census age data in

Mauritius have improved considerably and that data for females may be as good as for males.

5.4.3 Horizontal consistency checks for age reporting error - sex ratios

Another way of assessing the quality of age data is to look at sex ratios by age. In the absence of violent fluctuations in births, deaths and migration the sex ratios are expected to be high at the infant ages because the sex ratio at birth is favourable to males. After early childhood the ratios are expected to decline continuously to reach very low levels at the highest ages when female mortality is much lower than male mortality. Sex ratios by single year of age have been calculated for the Mauritian population for 1972 and 1983 and for the total population for 1962, 1972 and 1983. There being very little difference between the ratios for total and Mauritian population, only the total population has been considered for ease of comparison with the 1962 census.

The sex ratios by single year of age (not presented in this report), indicated that undulations from one age to the next are present in the data for all three censuses, but the magnitude of the fluctuations decreased considerably from 1962 to 1983. Thus the highest ratio in 1962 was 123 for age 39 and the lowest 69 for age 68; the range for 1972 was from 115 at 54 years to 77 at 69 years, and finally for 1983 the sex ratio varried only between 108 at 54 years to 79 at 68 years.

The general trend for 1962 was a very slow but steady decline up to age 30, then a more rapid increase up to age 51, after which the sex ratio declined steadily for the remaining ages. The trend for 1972 was roughly the same except that the initial decline continued up to age 35 instead of 30. One peculiarity of the 1972 data however was the very low sex ratio for age 0 probably due to the slight under-enumeration of males noted by Kumari.

The age to age fluctuations in the 1983 data were considerably smaller than in 1962 and 1972 indicating that they are considerably less affected by errors in age reporting. The general trend is a slow decline in the sex ratio up to age 40, a slight increase up to age 55 and then a steady rapid decrease at higher ages.

The increase in the sex ratio from ages in the thirties to ages in the middle fifties is interesting in that it is present in all three sets of data and therefore may be genuine. The cohorts correspond roughly to births occurring during the period 1912 to 1945 which included the depression of the 1930's. As has been noted before, mortality was very high during that period. It is possible that in such difficult conditions the scarce resources available were spent more upon the male children than upon the daughters. This seems to be confirmed to some extent by the sex ratio of deaths which was around 110 before 1945 compared to an average of 112 during 1962-72 and 133 during 1972-83. Thus the relatively high mortality of females in the past may explain to some extent the high sex ratios now observed among persons in the forties and fifties.

The analysis of sex ratios therefore showed that the census data, for 1983 at least, is acceptable if allowance is made for the genuine fluctuations due to past changes in mortality, recent changes in fertility, and the peculiarities of international migration. This is confirmed by the sex ratio score given in Table 5.16 above, which declined by over 50% from 6.17 in 1962 to 3.02 in 1972. It is true that the score rose slightly to 3.15 in 1983, but such small deviations should perhaps be ignored when genuine fluctuations have been shown present.

The U.N. joint score, which combines the results of the age ratio and sex ratio analyses, showed a decline of 45% from 36.23 in 1962 to 19.75 in 1972. Again it is shown that census age and sex data improved only marginally from 1972 to 1983 when the joint score stood at 19.60. Incidentally, according to U.N. a score of less than 20 is considered to indicate acceptable quality of data, especially when it is kept in mind that in our study we have dealt with single year of age-sex data instead of the usual 5 years of age group data. Thus the quality of the age-sex data from both the 1972 and 1983 Census seem to be of better than acceptable quality.

5.4.4 Diagonal consistency checks - cohort and overall survival ratios

The last method we shall use to assess the quality of the 1983 census data is the analysis of survival ratios. Table 5.17 shows the cohort and overall survival ratios by sex for the 11 year period between the censuses of 1972 and 1983.

Table 5.17 - Intercensal cohort and overall survival ratios by sex, 1972-83

Cohort survival ratios			Overall survital ratios		
Age	Male	Female	Age	Male	Female
0- 4	.9769	.9726	0+	.8793	.8971
5- 9	.9676	.9656	5+	.8655	.8866
10-14	.9049	.9200	10+	.8452	.8713
15-19	.8779	.8689	15+	.8316	.8605
20-24	.9164	.9175	20+	.8197	.8584
25-29	.9430	.9495	25+	.7947	.8436
30-34	.9393	.9451	30+	.7647	.8218
35-39	.9093	.9286	35+	.7304	.7976
40-44	.8802	.9074	40+	.6879	.7676
45-49	.8240	.9149	45+	.6369	.7331
50-54	.7512	.9033	50+	.5598	.6699
55-59	.6471	.7718	55+	.4786	.5927
60-64	.5074	.6855	60+	.3806	.5113
65-69	.3859	.5853	65+	.2870	.4179
70-74	.2434	.4284	70+	.1934	.3110
75+	.1261	.2101	75+	.1261	.2101
Total	.8793	.8971			

If the effect of international migration is negligible then the overall survival ratios should decline continuously as we go up to the older ages; moreover, the female ratios should be higher because of more favourable mortality. The overall ratios in Table 5.17 seem to satisfy both these conditions. The difference between the male and female ratios increase continuously from about 2% for 0+ to 24% for 55+, but then the gap widens very fast to attain 67% for 75+. The differences at the older ages are on the high side and may be due to the fact that overstatement of age is affecting the female data more than the male data.

The cohort survival ratios are expected to increase up to about age group 10-14 when mortality is lowest, and then to decrease continuously thereafter. The 1983 data do not show this pattern. The ratios look acceptable from age group 30-34 onwards, allowing for the slightly higher degree of overstatement of age among females. The ratios for age-groups below 30-34 appear to be too low for both males and females. This can be due to overenumeration at these ages in 1972 or underenumeration in the corresponding cohorts in 1983. However, the 1972 evaluation ruled out any overenumeration at any age, whilst the 1983 data showed the enumeration to have been better than in 1972. But if we look at the migration data for the intercensal period we observe that it is the younger cohorts of 1972 which have lost the largest number of persons through migration: in fact the net outward balance is almost exclusively from ages 0-29 for males, whilst for females this age-range accounted for 85% of net outmigration. Hence, although the cohort survival ratios are not well behaved the erratic fluctuations can reasonably be attributed to international migration which has removed 22,000 males and 23,000 females, mostly below 30, from the population during the period 1972-83.

5.4.5 Non reporting of age

The total number of cases in which age was not stated at the 1983 census was 661, of which only 209 concerned Mauritians, (126 males and 83 females)and the remaining 452 related to aliens. These figures represent 0.07% of not stated cases for the total population, and 0.02% for Mauritians.

5.5 Adjustment and smoothing of age sex data

The good quality of the 1983 census data as shown by the above analysis, and the presence of genuine fluctuations due mainly to international migration, do not justify any major adjustments nor any smoothing of the age and sex data. Some overstatement of age at the older ages may be present, especially among females, but the extent, if any, is so small that no adjustment is possible or needed. However, since the registration of births and deaths has been shown to be good in the country, the census data at the very young ages will be adjusted for underenumeration using information from the vital registration system.

5.5.1 Adjustment for underenumeration

The difference between the enumerated and the expected population is shown in Tables 5.3 for the total population and in Table 5.4 for Mauritians only. The cohorts born during the inter-censal period are in the age range 0-11 at the 1983 census. If the total population is considered, underenumeration is present at ages 0-5 for both males and females. The comparison for Mauritians only indicates possible underenumeration at ages 0-5 and 10-11 for males and 0-10 for females. However the erratic behaviour of the difference between enumerated and expected populations for ages above 5 shows that other factors may also be operating, for example migration fluctuations and shifting of ages. In the absence of further evidence it has been decided to take the differences observed at ages 0 to 5 for the total population as an estimate of the extent of underenumeration. Table 5.18 shows how the adjustment has been made to the Mauritian population. For each sex, the total deficit for ages 0-5 observed in the total

Table 5.18 - Adjustment for underenumeration of children at the 1983 Census

Age	Males			Females		
	Observed undercount		Adjustment for under-count in Mauritian population	Observed undercount		Adjustment for under-count in Mauritian population
	Total population	Mauritian population		Total population	Mauritian population	
0	222	178	158	30	124	108
1	99	119	106	263	240	209
2	396	206	183	240	116	101
3	112	244	216	13	19	17
4	4	213	189	5	79	69
5	270	283	251	92	159	139
Total	1,103	1,243	1,103	643	737	643

population has been pro-rated to the pattern of undercount in the Mauritian population.

Thus the adjusted 1983 census population is higher than the enumerated by 1,103 for males and 643 for females.

6. POPULATION PROJECTIONS

6.1 Introduction

It was not originally planned to have a chapter on population projections in this report since an exclusive report on the topic is going to be produced after an exhaustive analysis of fertility, mortality and migration is completed. However such an analysis will take some time, and there is at present an urgent need for up-to-date projections among planners and policy makers. In fact population projections have been a crucial element in development planning ever since the early sixties when two commissioned reports (4,7) on the social and economic structure of Mauritius were published. Government's interest in population projections was made explicit in the first Four Year Plan (5), and has continued ever since, with projections of population and labour force featuring in all subsequent Development Plans. Hence it is necessary that a set of national projections be made available to planners as soon as the basic demographic data are evaluated and adjusted. More detailed projections, both at national and subnational levels, and under more elaborate assumptions will have to wait until later.

6.2 Methodology

The projections presented in this report have been made using the cohort component method which involves the application of age and sex specific survival rates to the 1983 census base year population by five year age-group to obtain the survivors five years later. The survival rates themselves were derived from the 1983 national life tables and extrapolated into the future by using the Coale-Demeny West Model Life Tables.

The number of births was estimated by first assuming a gross reproduction rate which is most likely to obtain in the future given the recent past trend; corresponding age specific fertility rates were derived by using the recent pattern of fertility adjusted for likely changes in the light of family planning policies. Application of the age-specific fertility rates to the average number of females in the reproductive age-groups at the mid-point of each projection period gave the total births for that period. The births were distributed by sex on the basis of the average sex-ratio over the past few years. The survivors of the births were calculated by using the appropriate life table survival rates.

The projection incorporating the migration component was obtained by subtracting the expected net outward migrants by age and sex from the projected population using fertility and mortality assumptions only. The projected migration was based again on past recent trends and assumed level and pattern of net migrants.

6.3 Data requirements

The data required for the projections are therefore as follows: the base population by five year age group and sex, age-

specific fertility rates obtained from tabulations of births by age of mother and estimates of the female population; life table survival ratios obtained from tabulations of deaths by age and sex and the age and sex distribution of the population; and finally the number of migrants by age and sex. As stated earlier the base population was from the 1983 Census whilst fertility and mortality data were from the vital registration system. Migration data were compiled from information collected by the Immigration Office.

6.4 Quality of data

Evaluation of the 1983 age and sex data has been described in the earlier part of this report and has confirmed that the data are good. Most of the fluctuations in the age distribution are genuine and can be attributed mainly to international migration and variations in the size of birth cohorts in past years. Some overstatement of age at the older ages may be present, especially among females, but the extent, if any, is so small that no adjustment is possible or needed. The only adjustment made was for slight underenumeration of young children described earlier.

All analysts who have worked on data from the 1962, 1972 and 1983 censuses also agree that the coverage of births and deaths in the vital registration system is complete, although some errors in age data may be present. Even these age errors are now marginal and a study of age preference in reporting of deaths has indicated that there is no need for smoothing or adjustment of mortality rates. In fact Myer's index for reported male deaths in the age range 10-69 years declined from 5.64 for 1971-73 to 3.89 in 1982-84. The index for females decreased from 7.25 to 5.92 during the same period.

Migration data have also been found to be complete although the sex distribution of aliens is not as accurate as it could be because a specific question on sex is not asked on the embarkation-disembarkation card which each international passenger has to fill in when entering and leaving the country. However the projections presented here are only for the Mauritian population which constitutes more than 99.5% of the total population, and migration data for Mauritians only are good.

6.5 Mortality trends

General mortality as indicated by the crude death rate has declined continuously from 1962 to 1983. In fact the rate showed a decrease of 30% over the period, from 9.3 in 1962 to 7.9 in 1972 and 6.5 in 1983. The decline for females has been faster, from 9.0 in 1962 to 7.4 in 1972 and 5.7 in 1983, representing a decrease of 36% over the two decades. The decline for males has been of the order of 22% from 9.5 in 1962 to 8.3 in 1972 and 7.4 in 1983. The decline in the infant mortality rate also was slightly faster for females than for males: the rate dropped from 59 on 1972 to 23 in 1983 for females, and from 69 to 28 for males.

The faster decline in female mortality is also reflected in changes in the expectation of life at birth. Table 6.1 shows that the expectation for females has increased by about 15% over the last two decades as compared to an improvement of only 10% for males.

Table 6.1 - Expectation of life at birth, 1962, 1972, 1983

Period	Expectation (years)	
	Male	Female
1961 - 63	58.7	61.9
1971 - 73	60.8	65.9
1982 - 84	64.4	71.2

The gap between male and female mortality has widened from about 3 years in 1962 to about 7 years in 1983, which indicates that females are gaining one year more than males every 6 years.

Table 6.2 shows the abridged life table for Mauritian males and females for 1971-73, and Table 6.3 shows the life table for 1982-84. Both tables also show for each 5-year survival ratio, the corresponding mortality level from the Coale-Demeny West Model Life Tables. The most evident observation is the remarkable consistency of female mortality at all ages for both periods in contrast to a male pattern characterized by higher adult mortality relative to the young ages. It is observed that in 1972, mortality for ages up to 40 years is slightly lower for males than for females, as reflected in the higher levels for males. After age 40, male mortality is higher than for females and deteriorates with increasing age. For females, the mortality at old ages is only slightly lower than that at the younger ages and does not deteriorate with increasing age as is observed for males. In 1983 male mortality is slightly more favourable than female mortality up to age 25. After 25, mortality deteriotes continuously with increasing age for males whereas for females it is almost at the same level as for the young ages.

Comparing 1972 and 1983 it is seen that female mortality at almost all ages has improved from a level between 19 and 20 in 1972 to to a level between 21 and 22 in 1983. On the other hand, male mortality seems to have improved only for the age range below 15, rising from roughly level 20 to level 22; it has remained constant for age-group 15-29 (at around level 22) and also for each of the 5-year age-groups above 50 years (the actual level decreasing from 16 to 13 with age). For age-group 30-49, male mortality seems in fact to have deteriorated, the mortality level falling by roughly one point for each 5-year age-group.

Table 6.2 - Abridged Life Table for Mauritian Males, 1971-73

Age	m_x	q_x	l_x	L_x	T_x	e_x	S.R.	Mortality Level 3/
0	.06921	.061414	100,000	95,886	6,083,575	60.83	.93194 1/	19
1 - 4	.00561	.021508	93,859	370,086	5,987,689	63.82	.98323	19
5 - 9	.00091	.004540	91,840	458,157	5,617,603	61.17	.99543	21
10 - 14	.00092	.004590	91,423	456,065	5,159,446	56.43	.99467	21
15 - 19	.00118	.005884	91,003	453,677	4,703,381	51.68	.99397	22
20 - 24	.00124	.006182	90,468	450,942	4,249,704	46.97	.99268	22
25 - 29	.00170	.008467	89,909	447,640	3,798,762	42.25	.99017	21
30 - 34	.00225	.011192	89,147	443,242	3,351,122	37.59	.98587	20
35 - 39	.00345	.017114	88,150	436,977	2,907,880	32.99	.97779	20
40 - 44	.00555	.027398	86,641	427,270	2,470,903	28.52	.96475	19
45 - 49	.00884	.043312	84,267	412,210	2,043,633	24.25	.94337	18
50 - 54	.01459	.070551	80,617	388,867	1,631,423	20.24	.91168	16
55 - 59	.02263	.107441	74,930	354,522	1,242,556	16.58	.85792	14
60 - 64	.03959	.180874	66,879	304,152	888,034	13.28	.79155	13
65 - 69	.05484	.242103	54,782	240,752	583,882	10.66	.71221	12
70 - 74	.08415	.348079	41,519	171,465	343,130	8.26	.60713	13
75 - 79	.12090	.461580	27,067	104,102	171,665	6.34	.39357 2/	15
80+	.16290	1.000000	14,574	67,563	67,563	4.64		

1/ Survival ratio (S.R.) from birth to age 0 - 4

2/ S.R. from age 75+ to age 80+

3/ From COALE-DEMENY West Model Life Tables

Table 6.2 - Abridged Life Table for Mauritian Females, 1971-73 (cont'd)

Age	m_x	q_x	l_x	L_x	T_x	e_x	S.R.	Mortality Level[3]
0	.05398	.048662	100,000	96,837	6,589,473	65.89	.94239[1]	19
1 - 4	.00644	.024608	95,134	374,356	6,492,636	68.25	.98208	18
5 - 9	.00105	.005237	92,793	462,750	6,118,280	65.93	.99585	20
10 - 14	.00061	.003046	92,307	460,832	5,655,530	61.27	.99561	20
15 - 19	.00115	.005735	92,026	458,810	5,194,698	56.45	.99258	20
20 - 24	.00183	.009112	91,498	455,405	4,735,888	51.76	.99044	20
25 - 29	.00201	.010004	90,664	451,052	4,280,483	47.21	.98783	20
30 - 34	.00285	.014157	89,757	445,562	3,829,431	42.66	.98602	20
35 - 39	.00282	.014009	88,486	439,332	3,383,869	38.24	.98313	20
40 - 44	.00399	.019768	87,247	431,922	2,944,537	33.75	.97781	20
45 - 49	.00499	.024666	85,522	422,337	2,512,615	29.38	.96779	20
50 - 54	.00814	.039946	83,413	408,735	2,090,278	25.06	.95022	19
55 - 59	.01235	.060025	80,081	388,387	1,681,543	21.00	.92213	19
60 - 64	.02029	.096846	75,274	358,145	1,293,156	17.18	.88511	19
65 - 69	.02881	.134874	67,984	316,997	935,011	13.77	.81932	19
70 - 74	.05266	.233617	58,815	259,722	618,014	10.51	.72515	20
75 - 79	.07846	.328644	45,074	188,337	358,292	7.95	.47435[2]	20
80+	.14015	1.000000	30,261	169,955	169,955	5.62		

1/ Survival ratio (S.R.) from birth to age 0 - 4

2/ S.R. from age 75+ to age 80+

3/ From COALE-DEMENY West Model Life Tables

Table 6.3 - Abridged Life Table for Mauritian Males. 1982-84

Age	m_x	q_x	l_x	L_x	T_x	e_x	S.R.	Mortality Level 3/
0	.02919	.027003	100,000	98,191	6,437,583	64.38	.97212 1/	22
1 - 4	.00135	.005262	97,300	387,867	6,339,392	65.15	.99411	22
5 - 9	.00055	.002744	96,788	483,196	5,951,525	61.49	.99773	23
10 - 14	.00046	.002295	96,522	482,101	5,468,329	56.65	.99649	22
15 - 19	.00098	.004889	96,301	480,410	4,986,228	51.78	.99429	22
20 - 24	.00130	.006479	95,830	477,669	4,505,818	47.02	.99258	22
25 - 29	.00171	.008514	95,209	474,123	4,028,149	42.31	.99004	21
30 - 34	.00238	.011832	94,399	469,402	3,554,026	37.65	.98486	20
35 - 39	.00385	.019079	93,281	462,294	3,084,624	33.07	.97599	19
40 - 44	.00606	.029881	91,502	451,196	2,622,330	28.66	.96153	18
45 - 49	.00986	.048196	88,768	433,839	2,171,134	24.46	.94064	17
50 - 54	.01489	.071951	84,489	408,088	1,737,295	20.56	.91253	16
55 - 59	.02231	.105996	78,410	372,393	1,329,207	16.95	.86708	15
60 - 64	.03544	.163437	70,099	322,894	956,814	13.65	.80756	14
65 - 69	.05097	.226977	58,642	260,756	633,920	10.81	.72160	13
70 - 74	.08168	.339705	45,332	188,161	373,164	8.23	.61251	13
75 - 79	.11505	.444833	29,932	115,251	185,003	6.18	.37703 2/	13
80 - 84	.17794	.602024	16,618	46,500	69,752	4.20		
85+	.28440	1.000000	6,613	23,252	23,252	3.52		

1/ Survival ratio (S.R.) from birth to age 0 - 4

2/ S.R. from age 75+ to age 80+

3/ From COALE-DEMENY West Model Life Tables

Table 6.3 - Abridged Life Table for Mauritian Females, 1982-84 (cont'd)

Age	m_x	q_x	l_x	L_x	T_x	e_x	S.R.	Mortality Level 3/
0	.02331	.021697	100,000	98,546	7,123,420	71.23	.97704 1/	22
1 - 4	.00134	.005224	97,830	389,972	7,024,874	71.81	.99481	21
5 - 9	.00045	.002245	97,319	485,985	6,634,902	68.18	.99799	22
10 - 14	.00045	.002245	97,101	485,007	6,148,917	63.32	.99663	21
15 - 19	.00091	.004540	96,883	483,375	5,663,910	58.46	.99500	21
20 - 24	.00106	.005287	96,443	480,958	5,180,535	53.72	.99462	22
25 - 29	.00110	.005486	95,933	478,370	4,699,577	48.99	.99419	22
30 - 34	.00127	.006330	95,407	475,593	4,221,207	44.24	.99252	22
35 - 39	.00181	.009011	94,803	472,036	3,745,614	39.51	.98842	22
40 - 44	.00290	.014403	93,949	466,570	3,273,578	34.84	.98295	21
45 - 49	.00406	.020111	92,595	458,616	2,807,008	30.31	.97534	22
50 - 54	.00620	.030560	90,733	447,307	2,348,392	25.88	.95933	21
55 - 59	.01077	.052534	87,960	429,116	1,901,085	21.61	.93309	21
60 - 64	.01733	.083275	83,339	400,405	1,471,969	17.66	.89722	21
65 - 69	.02704	.127097	76,399	359,252	1,071,564	14.03	.83231	21
70 - 74	.04778	.214300	66,689	299,011	712,312	10.68	.74706	21
75 - 79	.07143	.303891	52,398	222,379	413,301	7.89	.46194 2/	19
80 - 84	.10586	.417546	36,475	82,860	190,922	5.23		
85+	.19660	1.000000	21,245	108,062	108,062	5.09		

1/ Survival ratio (S.R.) from birth to age 0 - 4

2/ S.R. from age 75+ to age 80+

3/ From COALE-DEMENY West Model Life Tables

6.6 Mortality assumptions

In the light of the above observations, the assumption for both sexes aged less than 30 is that mortality will continue to improve from the present level of 22 to reach level 24 in 2000 A.D. For adult males aged 30 years and over, mortality will reach level 20 by the year 2000; if level 20 is reached earlier for any age-group, then mortality will remain at that level up to 2000 A.D. Female adult mortality will continue to improve from the present level to reach level 21 by 2000 A.D.; if level 21 is already attained for any age-group then mortality will remain at that level up to 2000 A.D.

6.7 Fertility trends

Mauritius has experienced a massive decline in fertility during 1962-73 as a result of an intensification of family planning and a rise in the age at marriage. In fact the gross reproduction rate (GRR) declined from 2.90 in 1962 to reach an unprecedented low of 1.50 in 1973. There was a temporary rise to 1.70 in 1974 probably due to a combination of factors including catching up of postponed births, improvement in economic conditions, and inefficient use of family planning resulting from a change in management in the previous year. However, the general downward trend was immediately picked up in 1975 and the GRR declined again to an all time low of 1.10 in 1983.

The mean age at marriage of females has continued to increase over the last two decades: it was 19.9 years in 1962, rose by about 12% to 22.4 years in 1972, and by a further 6% to reach 23.7 in 1983.

Table A6 in the Appendix shows the age and live birth order specific fertility rates for Mauritian women for selected years during the last inter-censal period. The age pattern of fertility shows some slight rise in teenage fertility and also a tendency towards an increasing percentage of births in the age-groups 20-24 and 25-29. The percentagefor 20-24 rose from about 28 in the early seventies to about 30 in the early eighties whilst that for 25-29 rose from around 27% to 29% during the same period. The percentage for 30-34 remained more or less constant at 19%. The rise in the younger ages has been compensated by a decrease from 12% to 9% for 35-39 and a decrease from 5% to 3% for age-group 40-44.

The mean age of the fertility schedule fell from 28.3 in 1972 to 27.5 in 1983, due partly to the rise in teenage fertility, but mainly to the drastic fall in fertility of women aged 30 years and above. The proportion of births that are of the 3rd and higher orders dropped from 53% in 1972 to 34% in 1983.

6.8 Fertility assumptions

In the light of the above trends it is thought that further declines in fertility are still possible and the most likely scenario is a decline in the GRR from the 1983 level of 1.10 to 0.85 in 2000 A.D., and stability thereafter.

6.9 Migration assumptions

Over the eleven years between the last two censuses, the net loss due to international migration was 21,000 for males and 22,000 for females. Because migration is the most unpredictable component, the assumption made is that the net annual loss observed in the recent past will continue for the next ten years and then stop. The age pattern taken is based on the pattern observed in recent years.

6.10 Projection results

Three sets of projections have been made and the results are shown in Tables 6.4, 6.5 and 6.6. Variant I, which is perhaps the most likely scenario, is the only one which includes a migration component. The assumptions for the three variants are as follows:

Variant I - Fertility : GRR declines from 1.10 in 1983 in to 0.85 in 2000 A.D.

Mortality : For both sexes under 30, mortality improves from level 22 to reach 24 in 2000 A.D. Adult male mortality reaches level 20 whilst adult female mortality reaches level 21.

Migration : Net yearly out-migration of 2,000 males and 2,100 females up to 1993 and then none.

Variant II - Fertility : Same as for Variant I

Mortality : Same as for Variant I

Variant III - Fertility : GRR constant at 1.0

Mortality : Same as for Variant I

Migration : None.

Table 6.4 - Projections of Mauritian population, Island of Mauritius, 1983 - 2003 (Variant I)

Age-group (years)	1983		1988		1993		1998		2003	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
0 - 4	56,833	55,495	49,375	48,126	48,525	47,384	45,666	44,606	42,924	41,935
5 - 9	52,512	51,563	56,091	54,892	48,796	47,671	48,508	47,395	45,738	44,693
10 - 14	47,953	46,489	51,683	50,850	54,960	53,889	46,071	46,992	47,780	46,715
15 - 19	57,303	56,193	45,618	44,224	47,792	46,987	51,590	50,463	44,638	43,472
20 - 24	52,972	52,069	53,169	52,909	39,738	38,961	43,782	44,650	47,534	48,125
25 - 29	44,533	44,450	51,190	50,154	53,772	52,316	44,303	42,458	48,795	47,380
30 - 34	39,021	38,456	43,388	43,340	50,714	49,801	54,778	53,658	45,547	43,989
35 - 39	26,779	27,624	38,153	37,423	42,697	42,355	50,847	49,596	54,909	53,452
40 - 44	19,786	23,352	25,964	27,168	37,184	37,447	42,124	43,082	49,966	50,313
45 - 49	19,161	19,439	19,004	19,679	25,147	26,169	36,254	36,374	41,159	41,898
50 - 54	16,053	15,961	18,040	18,715	17,991	19,009	23,965	25,645	34,698	35,613
55 - 59	17,209	17,449	14,671	15,018	16,596	17,585	16,684	18,080	22,379	24,445
60 - 64	11,793	12,634	14,977	16,234	12,903	14,193	14,776	16,887	15,011	17,391
65 - 69	8,593	9,947	9,572	11,283	12,345	14,507	10,812	12,723	12,579	15,146
70 - 74	5,179	6,990	6,264	8,265	7,150	9,413	9,449	12,159	8,481	10,685
75 - 79	2,677	4,536	3,214	5,204	4,008	6,151	4,721	7,021	6,425	9,072
80 +	1,560	4,006	1,627	3,959	1,943	4,312	2,501	5,019	3,164	5,865
All Ages	479,917	483,653	502,000	507,443	522,458	529,150	548,831	556,808	571,608	580,187
Both Sexes	963,570		1,009,443		1,051,608		1,105,639		1,151,795	

Assumptions : (i) Fertility : GRR declines uniformly from 1.19 in 1983 to 0.85 in 2,000 A.D.

(ii) Mortality : For both sexes under 30, mortality improves from level 22 to 24 in 2000 A.D. Adult male mortality reaches level 20 whilst that for female reaches level 21 in 2000 A.D.

(iii) Migration : Net yearly outmigration of 2,000 males and 2,100 females up to 1993 and none afterwards

Table 6.5 - Projections of Mauritian Population, Island of Mauritius, 1983-2003 (variant II)

Age group (years)	1983		1988		1993		1998		2003	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
0 - 4	56,833	55,495	49,903	48,550	49,607	48,256	46,808	45,528	44,111	42,899
5 - 9	52,512	51,563	56,532	55,240	49,699	48,386	49,463	48,151	46,729	45,484
10 - 14	47,953	46,489	52,401	51,470	56,430	55,163	49,624	48,339	49,404	48,124
15 - 19	57,303	56,193	47,797	46,350	52,256	51,355	56,303	55,082	49,537	48,304
20 - 24	52,972	52,069	57,000	55,943	47,583	46,195	52,066	51,241	56,145	55,020
25 - 29	44,533	44,450	52,611	51,818	56,681	55,734	47,375	46,073	51,900	51,162
30 - 34	39,021	38,456	44,132	44,216	52,237	51,600	56,386	55,560	47,219	45,979
35 - 39	26,779	27,624	38,430	38,168	43,464	43,885	51,446	51,215	55,532	55,145
40 - 44	19,786	20,352	26,149	27,304	37,562	37,726	42,523	43,377	50,381	50,622
45 - 49	19,161	19,439	19,050	20,005	25,242	26,839	36,354	37,083	41,263	42,637
50 - 54	16,053	15,961	18,066	18,960	18,044	19,512	24,020	26,177	34,754	36,169
55 - 59	17,209	17,449	14,697	15,312	16,649	18,188	16,739	18,718	22,428	25,112
60 - 64	11,793	12,634	15,003	16,288	12,953	14,305	14,831	17,006	15,069	17,515
65 - 69	8,593	9,947	9,598	11,337	12,398	14,619	10,867	12,841	12,628	15,269
70 - 74	5,179	6,990	6,273	8,283	7,168	9,450	9,468	12,199	8,481	10,727
75 - 79	2,677	4,536	3,223	5,222	4,025	6,188	4,739	7,060	6,444	9,113
80 +	1,560	4,006	1,635	3,977	1,960	4,349	2,519	5,058	3,183	5,906
All Ages	479,917	483,653	512,500	518,443	543,958	551,750	571,531	580,708	595,208	605,187
Both sexes	963,570		1,030,943		1,095,708		1,152,239		1,200,395	

Assumption: (i) Fertility: GRR declines uniformly from 1.10 in 1983 to 0.85 in 2000 A.D.

(ii) Mortality: For both sexes under 30, mortality improves from level 22 to 24 in 2000 A.D. Adult male mortality reaches level 20 whilst that for female reaches level 21 in 2000 A.D.

(iii) Migration: None

Table 6.6 - Projections of Mauritian population, Island of Mauritius, 1983 - 2003 (Variant III)

Age-group (years)	1983		1988		1993		1998		2003	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
0 - 4	56,833	55,495	46,943	45,670	50,109	48,743	51,101	49,703	51,773	50,350
5 - 9	52,512	51,563	56,532	55,240	46,751	45,516	49,964	48,638	51,015	49,655
10 - 14	47,953	46,489	52,401	51,470	56,430	55,163	46,680	45,471	49,904	48,610
15 - 19	57,303	56,193	47,797	46,350	52,256	51,355	56,303	55,082	46,599	45,438
20 - 24	52,972	52,069	57,000	55,943	47,583	46,195	52,066	51,241	56,145	55,020
25 - 29	44,533	44,450	52,611	51,818	56,681	55,734	47,375	46,073	51,900	51,162
30 - 34	39,021	38,456	44,132	44,216	52,237	51,600	56,386	55,560	47,219	45,979
35 - 39	26,779	27,624	38,430	38,168	43,464	43,885	51,446	51,215	55,532	55,145
40 - 44	19,786	20,352	26,149	27,304	37,562	37,726	42,523	43,377	50,381	50,622
45 - 49	19,161	19,439	19,050	20,005	25,242	26,839	36,354	37,083	41,263	42,637
50 - 54	16,053	15,961	18,066	18,960	18,044	19,512	24,020	26,177	34,754	36,169
55 - 59	17,209	17,449	14,697	15,312	16,649	18,188	16,739	18,718	22,428	25,112
60 - 64	11,793	12,634	15,003	16,288	12,953	14,305	14,831	17,006	15,069	17,515
65 - 69	8,593	9,947	9,598	11,337	12,398	14,619	10,867	12,841	12,628	15,269
70 - 74	5,179	6,990	6,273	8,283	7,168	9,450	9,468	12,199	8,481	10,727
75 - 79	2,677	4,536	3,223	5,222	4,025	6,188	4,739	7,060	6,444	9,113
80 +	1,560	4,006	1,635	3,977	1,960	4,349	2,519	5,058	3,183	5,906
All ages	479,917	483,653	509,540	515,563	541,512	549,367	573,381	582,502	604,718	614,429
BOTH SEXES	963,570		1,025,103		1,090,879		1,155,883		1,219,147	

Assumptions: (i) Fertility : GRR constant at 1.00

(ii) Mortality : For both sexes under 30, mortality improves from level 22 to 24 in 2000 A.D. Adult male mortality reaches level 20 whilst that for female reaches level 21 in 2000 A.D.

(iii) Migration : None

Table 6.7 - Implied vital rates for population projections (1983 - 2003) - Variant I

	1983-88	1988-93	1993-98	1998-2003
Crude birth rate	20.0	18.3	16.1	14.4
Crude death rate	6.4	6.0	6.1	6.7
Age-specific fertility rates				
Age of women (years)				
15 - 19	38.9	35.4	31.7	29.4
20 - 24	128.4	119.1	109.9	101.9
25 - 29	128.4	122.0	115.1	106.8
30 - 34	83.4	78.5	73.8	68.4
35 - 39	38.5	34.6	30.9	28.7
40 - 44	13.0	11.7	10.0	9.3
45 - 49	1.7	1.2	1.1	1.1
Total Fertility Rate	2.161	2.013	1.862	1.728
Gross Reproduction Rate	1.063	0.990	0.916	0.850
Net Reproduction Rate	1.056	0.984	0.911	0.846
Mean Female population aged 15 - 49	266,740	284,967	307,660	324,456

6.11 Some implications of the population projections

Table 6.7 shows the implied vital rates for the Variant I projection which, as mentioned earlier, is the most likely of the three scenarios. The crude birth rate is expected to continue declining up to the end of the projection period whereas the downward trend in the crude death rate is expected to be reversed after 1993, most probably due to some ageing of the population.

Table 6.8 below shows that the total Mauritian population

Table 6.8 - Projected growth of Mauritian population - Variant I

Year	1983	1988	1993	1998	2003
Population	963,570	1,009,443	1,051,608	1,105,639	1,151,795
Sex ratio	99.2	98.9	98.7	98.6	98.5
Dependency ratio	648	634	585	518	480

is expected to increase by about 9 to 10 thousand every year for the 20-year projection period. The annual rate of growth increases from 0.88% during the first ten-year period to 0.91% during the remaining period. The lower growth rate for the initial ten years is a result of the assumption that outmigration will occur only during that period. If no migration is assumed (Variant II), then the rate of growth for the first period is 1.25% per annum compared to 0.92% for the remaining projection period.

The sex ratio of the population, expressed as the number of males per 100 females, declines very slowly but continuously from 99.2 at the beginning of the projection period to reach 98.5 at the end.

The proportion of the population below 15 years declines from 32% to 23% during the 20-year period whilst the proportion aged 60 years and over increases from 7.0% to 9.0%. These changes are reflected in a continuous decline in the dependency ratio which falls from 648 in 1983 to 480 in 2003.

The number of persons aged 60 years and above, and who are therefore eligible for old age pension, increases by about 2,000 every year, from 68,000 in 1983 to 104,000 at the end of the projection period.

7. CONCLUSIONS AND RECOMMENDATIONS

7.1 Main findings

The materials available for the present analysis and evaluation were the sex and single year of age data for Mauritians and the whole population enumerated at the 1983 census, live births by sex and deaths by sex and single year of age from the vital registration system, and finally, international migration data by sex and single year of age from the Immigration Control system. Data on fertility and mortality collected at the census have not yet been tabulated and could not be used for cross-checking with the vital registration data. This exercise will be undertaken later, but it is not believed that the conclusions arrived at here will be different because the registration data have been shown to be good, if not better than the census data.

The main conclusions that stand out from the evaluation and analysis are as follows:

(a) Census: (i) the coverage of the 1983 census was good, and in fact made up for the 10,000 deficit observed in 1972;

(ii) there was some underenumeration of young children, about 1,100 males and 700 females in the ages 0 to 5 years;

(iii) the age and sex data are considered good; some slight digit preference has been observed especially for the higher digits, but this may be explained away to a large extent by genuine fluctuations in births in the past, and also by the possible use of important events for reckoning age or year of birth;

(iv) some overstatement of age may be present at very old ages, especially for females, but not to an extent requiring even minor adjustments;

(v) the improvement in the age and sex data as compared to the 1972 census has been marginal because of the relatively high level of accuracy already attained in 1972.

(b) Vital registration:

(i) registration of births and deaths has been complete, at least for the last two decades;

(ii) the sex and age data on deaths have improved since 1972: there does not seem to be much digit preference or overstatement of age.

(c) Migration: data on international migration, although complete, presented problems because information on sex is not asked explicitly and sometimes has to be deduced from the name; however, the sex distribution of Mauritian migrants is good and the analysis and evaluation of age and sex data for Mauritians only presented no problems.

(d) Fertility: except for a temporary rise in the early seventies, fertility has continued to decline, but not as fast as during the 1962-72 period; the GRR fell from 1.67 in 1972 to 1.10 in 1983.

(e) Mortality: overall mortality has continued to decline during 1972-83, but again at a slower rate than in the previous decade: the crude death rate fell from 7.9 in 1972 to 6.5 in 1983. However both registration data and intercensal survival ratios indicate that adult male mortality has not improved very much and may in fact have deteriorated.

7.2 Lessons learnt from 1983 census

7.2.1 Questionnaire:

(i) The Housing Census questionnaire was presented simply as one sheet but booklets of 25 sheets were bound for ease of handling by Chief Enumerators who themselves had to fill in the questionnaires. On the other hand, the Population questionnaire appears bulky and unwieldy. However, the responsibility for filling the questionnaire, excepting questions on economic characteristics, was with the head of household. Furthermore the enumerator had to cover an average of only about 70 households, and in June-July the climatic conditions are not at all antagonistic to field-work. In any case, it is not thought that the size of the questionnaire can be reduced by eliminating some of the questions asked: they are all useful for planning purposes and the census is the only source of data which allows a large number of characteristics to be correlated with each other for the study of differentials. Perhaps the main reasons why it is possible to have an ambitious questionnaire in Mauritius are, firstly, both the population and the territory are small so that fieldwork is relatively easy to control, and secondly, the population itself has a relatively high level of literacy and is not only conscious of the need for data, but has also been accustomed to the idea of supplying information for administrative, legal, educational and other purposes.

(ii) The part of the questionnaire that seems to have been most inaccurately filled in concerns the questions on economic characteristics. However, given that the questions are basic for planning and policy making, reduction of their number will not be an acceptable way to improve quality. Even if the questionnaire was simplified there is no guarantee that respondents will volunteer information which they want to hide, or at least which they do not want to be officialised. The main problem was that many persons in the informal sector reported themselves as unemployed in the hope perhaps, of being eligible for any unemployment

benefits that might be coming. In such circumstances no amount of extra effort would have improved the data, except marginally, especially since the enumerator has no legal right to change the respondent's answer without the latter's consent. Perhaps the only way to get good economic data in future censuses would be to intensify further the education and publicity aspects laying greater stress on the uses of the data and the legal impossibility of using them for other than statistical purposes.

(iii) The other part of the questionnaire that gave some problems on the field was that on marriage and fertility history. Apart from the usual memory lapses, errors, there were inconsistencies which the sensitive and private nature of the questions must have made it difficult for the enumerator to probe, especially when the enumerator is usually a man and the respondent is usually the husband of the woman concerned.

7.2.2 Field operations

There did not seem to be much problems here, especially since a large number of supervisory staff was recruited and trained to ensure close control and supervision at all stages of the fieldwork. However there is need to exercise supervision and control in a systematic and verifiable manner by introducing some simple sampling scheme for the scrutiny of filled in forms right from the first day of enumeration. As it was, supervision and control although general at the beginning, tended subsequently to concentrate more on enumerators who had shown some weaknesses, and this perhaps to the detriment of closer monitoring of the more capable elements.

7.2.3 Office processing

Supervision and control of editing and coding also followed more or less the same principles as on the field: general control and checks in the beginning gradually, giving way to stricter surveillance of the work of poorer editors and coders. A more systematic and sustained control is recommended using some simple acceptance sampling procedure.

As regards computer processing, mechanical edit procedures and automatic correction could not be implemented as originally planned because of staff turnover. For the same reason tabulation is not being done as efficiently as possible even though the data processing facilities were strengthened. It is important that package programs designed specifically for census data analysis be examined and selected to suit the local requirements in order to avoid problems in the future. However maximisation of the available computer facilities will not be possible if the Data Processing Division continues to face staff problems. Two alternatives can be investigated: firstly, the possibility of creating an additional post in the appropriate grade on the establishment of the Data Processing Division, to deal with data processing matters exclusive to the Central Statistical Office; secondly, the acquisition by the Central Statistical Office of a mini computer that can handle census data.

7.3 Suggestions for future action

7.3.1 Census planning

The analysis of the 1983 census will be a comprehensive one including not only evaluation of basic demographic data but also the analysis of fertility, mortality, migration, manpower, education, households and housing conditions. This all-comprehensive focus crystallised only about one year after the taking of the census; the initial plan was to give priority to the evaluation of basic demographic data only because of lack of resources, in particular personnel. Now that the social statistics division of the Central Statistical Office has been strengthened, it is suggested that extensive and intensive evaluation and analysis of all data collected should be an integral part of future census projects right from the preparatory stage. Other Government ministries should be encouraged to participate in those analyses that are of direct relevance to them. This approach is working well in the analysis of morbidity and mortality for which the Ministry of Health is presently collaborating with C.S.O.

It will also be necessary to prepare the tabulation plans well in advance of the census fieldwork, not only to enable the data users and analysts to comment upon them, but also to give data processing staff sufficient time to write the appropriate programmes.

7.3.2 Improvement of migration data

Given the high level of accuracy of population and vital registration data urgent action is needed to ensure that the international migration data also reach a comparable standard. Space should be provided on the embarkation-disembarkation card for the insertion of the sex of persons leaving or entering the country. Migration is the only variable for which the sex distribution is inaccurate.

The embarkation-disembarkation cards are now being handled manually by the Immigration Office. Computerization should be envisaged not only to effect considerable savings in terms of manpower and resources, but also to achieve timely production of statistics on a complete basis.

7.3.3 Analysis of vital registration data

A large volume of data collected through the vital registration system is not being analysed in a systematic way. It is suggested that further resources be mobilised to ensure that all data collected are analysed and efficiently utilised, in particular for assessing future trends and prospects.

7.3.4 Implications of male and female differential in mortality

The widening gap between male and female expectations of life at birth may lead ministries concerned to review policy decisions or evolve new policy guidelines as regards family and health education, preventive measures, the differential between male and female age at marriage and social security plans. For example, if women of marriageable age are going to live an average of 7 years longer longer than males, then the number of women becoming widows at relatively young ages will go on increasing with inevitable strain on the social security and pensions systems.

7.4 Conclusions

Although the present evaluation did not go into an analysis of census data on fertility and mortality, the remarkable consistency shown between the census age and sex data and the registration data on births, deaths and migration, indicates that both the basic age sex data and the projections can be used for planning and policy making without fear of serious errors of judgment.

Appendix Tables

Table A1 - Population growth and sex ratios - Island of Mauritius, 1846-1983

Census date	Population enumerated at census			Intercensal increase	Average annual rate of increase %	Sex ratio
	Both sexes	Male	Female			
1st Aug. 1846	158,462	104,598	53,864	-	-	194.2
20th Nov. 1851	180,823	119,341	61,482	22,361	2.55	194.1
8th Apr. 1861	310,050	202,961	107,089	129,227	5.87	189.5
11th Apr. 1871	316,042	193,575	122,467	5,992	0.19	158.1
4th Apr. 1881	359,874	208,655	151,219	43,832	1.31	138.0
6th Mar. 1891	370,588	206,038	164,550	10,714	0.29	125.2
1st Apr. 1901	371,023	199,552	171,471	435	0.01	116.4
31st Mar. 1911	368,791	194,095	174,696	- 2,232	- 0.06	111.1
21st May 1921	376,485	194,108	182,377	7,694	0.21	106.4
26th Apr. 1931	393,238	200,609	192,629	16,753	0.44	104.1
11th Jun. 1944	419,185	210,326	208,859	25,947	0.49	100.7
30th Jun. 1952	501,415	252,032	249,383	82,230	2.26	101.1
30th Jun. 1962	681,619	342,306	339,313	180,204	3.12	100.9
30th Jun. 1972	826,199	413,580	412,619	144,580	1.94	100.2
2nd July 1983	966,863	481,368	485,495	140,664	1.44	99.1

Table A2 - Population and vital statistics - Island of Mauritius, 1921-83

Period	Population at mid-period	Live births	Deaths	Natural increase	Infant deaths 1/	Still births	Civil marriages
1921-25 Average	379,636	14,834	11,758	3,076	2,104	1,581	2,062
1926-30 "	403,240	14,208	11,614	2,594	2,002	1,256	1,455
1931-35 "	398,647	12,490	11,889	601	1,752	1,216	1,489
1936-40 "	412,003	13,621	11,157	2,464	2,119	1,240	2,093
1941-45 "	417,838	15,027	11,927	3,100	2,318	1,240	3,333
1946-50 "	438,797	19,595	9,113	10,482	2,343	1,348	3,503
1951-55 "	522,577	23,176	7,701	15,475	1,884	1,472	3,307
1956	574,938	24,910	6,739	18,171	1,644	1,789	3,080
1957	593,070	25,273	7,603	17,670	1,897	1,800	2,903
1958	609,518	24,600	7,112	17,488	1,659	1,703	3,169
1959	627,249	23,923	6,753	17,170	1,495	1,759	3,297
1960	644,743	25,307	7,248	18,059	1,760	1,783	3,113
1961	662,368	26,092	6,505	19,587	1,618	1,963	3,484
1962	681,619	26,267	6,325	19,942	1,579	1,841	3,893
1963	695,641	27,978	6,709	21,269	1,660	1,519	3,472
1964	716,298	27,528	6,184	21,344	1,561	1,611	3,965
1965	735,245	26,279	6,337	19,942	1,685	1,557	3,976
1966	753,276	26,817	6,701	20,116	1,721	1,384	4,157
1967	767,732	23,499	6,543	16,956	1,656	1,074	3,949
1968	781,615	24,413	7,126	17,287	1,688	1,110	3,974
1969	792,893	21,719	6,428	15,291	1,523	951	3,882
1970	805,489	21,623	6,309	15,314	1,232	857	4,499
1971	816,561	20,834	6,248	14,586	1,077	842	4,346
1972	826,199	20,496	6,506	13,990	1,308	718	5,082
1973	834,731	18,974	6,525	12,449	1,201	678	5,533
1974	845,755	22,938	6,221	16,717	1,045	854	6,771
1975	856,516	21,492	6,967	14,525	1,046	896	6,888
1976	867,885	22,250	6,815	15,435	900	784	8,262
1977	881,761	22,730	6,966	15,764	1,023	712	8,421
1978	896,471	24,250	6,400	17,850	823	653	10,532
1979	911,499	25,056	6,625	18,431	824	650	9,080
1980	926,578	24,983	6,685	18,298	808	623	8,629
1981	939,477	23,670	6,404	17,266	795	553	8,169
1982	949,686	21,247	6,385	14,862	624	438	10,597 2/
1983	957,301 3/	19,948	6,322	13,626	511	379	10,067

1/ Deaths of children under 1 year of age

2/ The increase in 1982 and 1983 is due partly to improved registration of religious marriages as a result of changes in the Civil Status Act as from January 1982

3/ Enumerated 1983 census population (966,863) is not comparable with estimates for 1973-82 based on 1972 census data

Table A3 - Vital statistics rates - Island of Mauritius, 1921-83

Period	Crude birth rate	Crude death rate	Rate of natural increase	Infantile mortality rate 1/	Still birth rate 2/	Marriage rate 3/
1921-25 Average	39.1	31.0	8.1	141.8	96.3	10.9
1926-30 "	35.2	28.8	6.4	140.9	81.2	7.2
1931-35 "	31.3	29.8	1.5	140.3	88.7	7.5
1936-40 "	33.1	27.1	6.0	155.6	83.4	10.2
1941-45 "	36.0	28.5	7.5	154.3 4/	76.2	16.0
1946-50 "	44.7	20.8	23.9	119.6 5/	64.4	16.0
1951-55 "	44.3	14.7	29.6	81.3	59.7	12.7
1956	43.3	11.7	31.6	66.0	67.0	10.7
1957	42.6	12.8	29.8	75.1	66.5	9.8
1958	40.4	11.7	28.7	67.4	64.7	10.4
1959	38.1	10.8	27.3	62.5	68.5	10.5
1960	39.3	11.2	28.1	69.5	65.8	9.7
1961	39.4	9.8	29.6	62.0	70.0	10.5
1962	38.5	9.3	29.2	60.1	65.5	11.4
1963	40.2	9.6	30.6	59.3	51.5	10.0
1964	38.4	8.6	29.8	56.7	55.3	11.1
1965	35.7	8.6	27.1	64.1	55.9	10.8
1966	35.6	8.9	26.7	64.2	49.1	11.0
1967	30.6	8.5	22.1	70.5	43.7	10.3
1968	31.2	9.1	22.1	69.1	43.5	10.2
1969	27.4	8.1	19.3	70.4	41.9	9.8
1970	26.8	7.8	19.0	57.0	38.1	11.2
1971	25.5	7.7	17.8	51.7	38.8	10.6
1972	24.8	7.9	16.9	63.8	33.8	12.3
1973	22.7	7.8	14.9	63.3	34.5	13.3
1974	27.1	7.4	19.7	45.6	35.9	16.0
1975	25.1	8.1	17.0	48.7	40.0	16.1
1976	25.6	7.8	17.8	40.4	34.0	19.0
1977	25.8	7.9	17.9	45.0	30.4	19.1
1978	27.0	7.1	19.9	33.9	26.2	23.5
1979	27.5	7.3	20.2	32.9	25.3	19.9
1980	27.0	7.2	19.8	32.3	24.3	18.6
1981	25.2	6.8	18.4	33.6	22.8	17.4
1982	22.4	6.7	15.7	29.4	20.2	22.3 6/
1983	20.8	6.6	14.2	25.6	18.6	21.0

1/ Deaths of children under 1 year of age per 1,000 live births
2/ Still births per 1,000 total births (live births and still births)
3/ Number of persons civilly married per 1,000 of mid-period population
4/ The rate reached 188.0 in 1945 when there were poliomyelitis and dysentery epidemics
5/ The rate reached 186.2 in 1948 when there was an epidemic of whooping cough
6/ The increase in 1982 and 1983 is due partly to improved registration of civil marriages as a result of changes in the Civil Status Act

Table A 4 - Arrivals and departures by sex for Total and Mauritian population - Island of Mauritius, July 1972 - June 1983

Period	MALES			FEMALES		
	Arrivals (A)	Departures (D)	A - D	Arrivals (A)	Departures (D)	A - D
			TOTAL POPULATION			
1972-73	52,438	54,964	- 2,526	36,907	38,786	- 1,879
1973-74	61,830	63,990	- 2,160	44,757	46,731	- 1,974
1974-75	61,767	64,243	- 2,476	44,283	46,439	- 2,156
1975-76	76,312	77,278	- 966	55,004	56,769	- 1,765
1976-77	84,327	85,557	- 1,230	63,063	63,160	- 97
1977-78	86,881	88,233	- 1,352	65,681	66,149	- 468
1978-79	100,381	105,002	- 4,621	74,507	72,830	+ 1,677
1979-80	100,420	103,250	- 2,830	70,730	71,340	- 610
1980-81	94,460	98,230	- 3,770	70,940	71,500	- 560
1981-82	94,180	96,460	- 2,280	73,440	77,250	- 3,810
1982-83	95,070	98,730	- 3,660	74,750	77,670	- 2,920
Total	908,066	935,937	-27,371	674,062	688,624	-14,562
Period	MALES			FEMALES		
	Arrivals (A)	Departures (D)	A - D	Arrivals (A)	Departures (D)	A - D
			MAURITIAN POPULATION			
1972-73	11,962	15,043	- 3,081	7,091	10,199	- 3,108
1973-74	13,867	16,399	- 2,532	8,328	10,808	- 2,480
1974-75	14,567	17,170	- 2,603	8,495	11,112	- 2,617
1975-76	17,711	18,831	- 1,120	10,135	11,957	- 1,822
1976-77	18,397	19,308	- 911	10,782	12,041	- 1,259
1977-78	20,982	21,940	- 958	12,415	13,736	- 1,321
1978-79	23,285	24,608	- 1,323	13,809	14,480	- 671
1979-80	23,254	24,477	- 1,223	12,718	14,496	- 1,778
1980-81	21,600	22,733	- 1,133	11,807	13,909	- 2,102
1981-82	20,399	24,541	- 4,142	11,499	14,331	- 2,832
1982-83	21,835	24,766	- 2,931	12,438	15,399	- 2,961
Total	207,859	229,816	-21,957	119,517	142,468	-22,951
			NON-MAURITIAN POPULATION			
1972-83 Total	700,207	706,121	- 5,914	554,545	546,156	+ 8,389

Table A 5 - Arrivals and departures of Mauritian residents by age-group and sex - Island of Mauritius, July 1972 - June 1983

Arrivals males

Age-Group	1972-73	1973-74	1974-75	1975-76	1976-77	1977-78	1978-79	1979-80	1980-81	1981-82	1982-83	July 1972-June 1983
< 1	85	36	53	63	66	102	146	120	80	80	90	921
1 - 4	264	256	203	277	287	398	450	440	310	360	500	3,745
5 - 9	308	293	279	326	354	411	569	510	330	470	310	4,160
10 - 14	261	270	281	382	407	458	527	470	420	330	310	4,116
15 - 19	476	455	601	684	747	806	894	850	620	610	590	7,333
20 - 24	1,614	1,670	1,882	2,253	2,467	2,705	3,043	2,720	2,310	2,050	2,410	25,124
25 - 29	1,511	1,678	1,737	2,174	2,441	2,811	3,075	3,400	2,920	2,670	3,050	27,467
30 - 34	1,338	1,473	1,411	1,652	1,772	1,987	2,175	2,120	2,310	2,310	2,650	21,198
35 - 39	1,259	1,313	1,299	1,418	1,367	1,536	1,849	1,850	1,580	1,780	2,040	17,291
40 - 44	1,094	1,183	1,126	1,308	1,347	1,440	1,715	1,640	1,590	1,320	1,510	15,273
45 - 49	834	1,005	1,022	1,204	1,132	1,211	1,458	1,320	1,240	1,150	1,360	12,936
50 - 54	655	797	777	878	981	1,041	1,312	1,290	1,020	770	880	10,401
55 - 59	566	634	690	717	698	795	984	920	990	940	750	8,684
60 - 64	373	461	436	536	523	588	738	760	720	510	670	6,315
65 - 69	241	275	229	337	333	387	386	310	450	420	340	3,708
70+	157	216	217	279	255	305	373	420	260	300	420	3,202
N/S	926	1,852	2,324	3,223	3,220	4,001	3,591	4,114	4,450	4,329	3,955	35,985
All ages	11,962	13,867	14,567	17,711	18,397	20,982	23,285	23,254	21,600	20,399	21,835	207,859

Table A5 - Arrivals and departures of Mauritian residents by age-group and sex - Island of Mauritius, July 1972 - June 1983 (cont'd)

Departures males

Age-Group	1972-73	1973-74	1974-75	1975-76	1976-77	1977-78	1978-79	1979-80	1980-81	1981-82	1982-83	July 1972-June 1983
/ 1	81	82	70	81	83	107	164	123	128	140	154	1,185
1 - 4	387	357	316	328	338	461	498	432	597	437	457	4,610
5 - 9	493	448	460	414	404	491	543	462	290	454	643	5,102
10 - 14	470	440	473	513	477	537	579	815	379	647	524	5,654
15 - 19	1,062	940	1,187	1,117	1,065	1,195	1,260	1,296	914	1,029	1,026	12,011
20 - 24	2,619	2,681	2,992	2,956	2,998	3,265	3,652	3,494	2,552	3,278	2,857	33,342
25 - 29	1,885	1,987	2,168	2,292	2,517	2,881	3,057	3,350	3,270	3,474	3,632	30,513
30 - 34	1,532	1,597	1,608	1,727	1,791	2,084	2,501	2,368	2,447	2,565	2,658	22,790
35 - 39	1,450	1,432	1,378	1,395	1,374	1,586	2,041	1,653	1,686	1,711	2,261	17,887
40 - 44	1,171	1,253	1,192	1,305	1,339	1,441	1,521	1,680	1,606	1,573	1,587	15,668
45 - 49	937	1,042	1,044	1,171	1,155	1,198	1,427	1,381	1,272	1,121	1,290	13,030
50 - 54	702	828	790	867	962	1,030	1,238	1,081	881	1,034	934	10,347
55 - 59	616	646	695	738	722	823	798	800	703	843	966	8,350
60 - 64	411	487	439	550	523	629	697	750	634	664	671	6,455
65 - 69	241	286	253	361	330	362	376	400	221	391	391	3,612
70 +	157	202	216	279	266	307	349	390	352	481	310	3,309
N/S	829	1,711	1,967	2,737	2,964	3,713	3,907	4,002	4,809	4,899	4,413	35,951
												229,816

Table A 5 - Arrivals and departures of Mauritian residents by age-group and sex - Island of Mauritius, July 1972 - June 1983 (cont'd)

Arrivals Females

Age Group	1972-73	1973-74	1974-75	1975-76	1976-77	1977-78	1978-79	1979-80	1980-81	1981-82	1982-83	July 1972-June 1983
< 1	63	22	43	51	70	74	78	40	40	80	110	671
1 - 4	227	225	220	252	250	341	400	310	390	360	370	3,325
5 - 9	311	274	272	283	312	336	377	420	380	500	490	3,955
10 - 14	275	317	307	365	362	392	463	470	270	380	340	3,941
15 - 19	485	500	520	722	612	751	790	710	550	470	650	6,760
20 - 24	922	1,088	1,093	1,274	1,437	1,710	1,705	1,740	1,470	1,330	1,440	15,209
25 - 29	759	824	802	965	1,187	1,397	1,644	1,440	1,400	1,250	1,380	13,048
30 - 34	687	743	690	799	832	930	1,159	1,100	900	1,080	1,140	10,060
35 - 39	566	651	666	741	805	836	965	780	740	740	860	8,350
40 - 44	479	519	558	591	666	781	874	830	750	790	840	7,678
45 - 49	504	555	608	699	657	738	867	770	640	520	720	7,278
50 - 54	403	437	447	604	671	699	835	810	670	630	680	6,886
55 - 59	369	414	406	464	442	468	520	570	670	530	550	5,403
60 - 64	281	333	326	391	424	476	565	480	450	370	440	4,536
65 - 69	148	187	201	251	250	290	358	310	350	320	240	2,905
70+	145	175	155	211	228	260	311	240	230	320	390	2,665
N/S	467	1,064	1,181	1,492	1,577	1,936	1,898	1,698	1,907	1,829	1,798	16,847
All ages	7,091	8,328	8,495	10,135	10,782	12,415	13,809	12,718	11,807	11,499	12,438	119,517

Table A 5 - Arrivals and resident ones of Mauritian residents by age-group and sex - Island of Mauritius, July 1972 - June 1983 (cont'd)

Departures Females

Age-Group	1972-73	1973-74	1974-75	1975-76	1976-77	1977-78	1978-79	1979-80	1980-81	1981-82	1982-83	July 1972-June 1983
/ 1	75	39	58	72	66	77	112	130	110	71	117	927
1 - 4	336	285	314	293	310	367	417	332	377	489	390	3,930
5 - 9	499	466	412	398	342	415	431	393	451	402	436	4,669
10 - 14	499	481	460	465	438	492	464	548	416	419	515	5,196
15 - 19	1,061	938	1,106	1,145	946	1,081	1,123	989	899	885	889	11,067
20 - 24	1,741	1,861	1,884	1,827	1,861	2,035	2,147	2,049	1,730	2,094	2,117	21,349
25 - 29	1,118	1,172	1,147	1,182	1,333	1,521	1,547	1,883	1,753	1,955	1,798	16,409
30 - 34	870	936	887	926	915	971	1,129	1,188	1,301	1,152	1,564	11,839
35 - 39	775	778	763	843	834	907	953	1,015	915	1,019	1,051	9,853
40 - 44	656	604	592	644	716	814	819	763	633	532	810	7,953
45 - 49	631	660	675	740	690	780	750	762	666	862	785	7,941
50 - 54	448	495	516	677	710	756	965	833	673	564	744	7,381
55 - 59	436	484	454	507	466	515	598	582	702	632	812	5,990
60 - 64	308	334	355	422	461	479	444	463	432	412	441	4,551
65 - 69	193	212	235	290	282	322	296	320	321	401	230	3,102
70 +	149	201	180	243	226	273	314	231	342	398	311	2,770
N/S	402	844	1,064	1,283	1,445	1,923	1,966	2,015	2,188	2,022	2,389	17,541
All Ages	10,199	10,866	11,112	11,957	12,041	13,736	14,480	14,496	13,909	14,331	15,399	142,468

Table A 6 - Age and live birth order specific fertility rates for Mauritian women based on 1983 enumeration, 1972-83, selected years

1972

Age of mother \ Live birth order	First	Second	Third	Fourth	Fifth	Sixth & over	Total
15 - 19	35.54	11.63	2.59	0.38	0.08	-	50.22
20 - 24	65.81	54.63	39.04	16.97	6.68	1.98	185.11
25 - 29	28.00	35.24	34.92	32.27	26.39	27.57	184.39
30 - 34	8.73	12.56	15.22	17.42	18.02	58.74	130.69
35 - 39	3.40	4.38	6.71	7.49	8.85	57.30	88.13
40 - 44	1.00	1.17	1.41	1.58	2.76	24.99	32.91
45 - 49	0.26	0.10	0.26	0.32	0.21	2.57	3.72
15 - 49	28.08	21.10	16.11	10.99	8.28	19.08	103.64

1973

Age of mother \ Live birth order	First	Second	Third	Fourth	Fifth	Sixth & over	Total
15 - 19	34.81	10.34	1.86	0.36	0.04	0.02	47.43
20 - 24	68.81	50.76	32.86	14.34	4.25	1.39	172.41
25 - 29	26.72	33.89	30.19	29.29	22.22	21.48	163.79
30 - 34	8.14	11.70	13.96	13.96	17.98	50.85	116.59
35 - 39	3.09	4.35	5.46	7.20	8.21	46.76	75.07
40 - 44	1.01	0.71	1.67	1.79	1.91	19.29	26.38
45 - 49	-	0.21	0.26	0.21	0.21	2.42	3.31
15 - 49	28.50	20.13	14.12	9.88	7.16	15.59	95.38

Table A 6 - Age and live birth order specific fertility rates for Mauritian women based on 1983 enumeration, 1972-83, selected years (cont'd)

1977

Age of mother \ Live birth order	First	Second	Third	Fourth	Fifth	Sixth & over	Total
15 - 19	44.73	13.04	1.88	0.18	0.02	0.04	59.89
20 - 24	73.95	59.41	27.19	7.58	1.94	0.70	170.77
25 - 29	38.12	46.43	39.65	25.70	14.11	8.84	172.85
30 - 34	11.38	16.75	20.21	19.34	16.94	30.91	115.53
35 - 39	4.08	5.10	6.75	6.90	7.43	35.16	65.42
40 - 44	1.26	0.76	0.96	1.32	2.12	16.49	23.41
45 - 49	0.12	0.24	0.06	0.12	0.36	1.22	2.12
15 - 49	34.83	26.16	16.07	9.14	5.75	10.18	102.13

1978

Age of mother \ Live birth order	First	Second	Third	Fourth	Fifth	Sixth & over	Total
15 - 19	46.22	13.77	1.62	0.04	-	0.04	61.69
20 - 24	80.43	61.81	29.92	8.60	1.65	0.38	182.79
25 - 29	38.44	51.26	41.05	25.38	12.57	7.67	176.37
30 - 34	13.00	18.19	21.07	19.10	17.26	26.34	114.96
35 - 39	4.31	5.84	6.99	6.56	6.41	31.12	61.23
40 - 44	1.15	1.00	1.69	1.49	2.14	14.74	22.21
45 - 49	0.49	0.06	0.06	0.12	-	1.66	2.39
15 - 49	36.70	28.01	17.23	9.39	5.50	9.00	105.83

Table A 6 - Age and live birth order specific fertility rates for Mauritian women based on 1983 enumeration, 1972-83, selected years (cont'd)

1 9 8 2

Age of mother \ Live birth order	First	Second	Third	Fourth	Fifth	Sixth & over	Total
15 - 19	37.03	10.69	1.30	0.07	-	-	49.09
20 - 24	66.23	52.19	21.30	5.08	1.03	0.16	145.99
25 - 29	34.31	45.95	30.67	17.07	6.56	2.60	137.16
30 - 34	11.92	19.44	20.69	15.57	10.62	10.24	88.48
35 - 39	4.76	7.02	7.64	7.45	6.74	17.23	50.84
40 - 44	0.94	1.04	1.09	1.74	1.83	8.03	14.72
45 - 49	0.05	0.16	0.31	0.21	0.21	1.04	1.98
15 - 49	29.90	24.52	13.79	7.17	3.73	4.42	83.53

1 9 8 3

Age of mother \ Live birth order	First	Second	Third	Fourth	Fifth	Sixth & over	Total
15 - 19	29.93	9.29	0.89	0.07	-	-	40.18
20 - 24	62.19	47.40	18.03	4.34	0.88	0.17	133.01
25 - 29	33.84	47.33	29.45	13.56	5.26	2.29	131.73
30 - 34	11.86	21.12	20.02	15.19	9.52	8.53	86.24
35 - 39	3.94	5.94	7.93	6.08	5.21	12.02	41.12
40 - 44	1.47	1.33	1.28	1.42	1.92	6.24	13.66
45 - 49	0.26	0.21	0.21	0.15	0.10	0.98	1.91
15 - 49	27.16	23.59	12.83	6.25	3.21	3.55	76.59

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