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Ministry of Economic Planning and Development

CENTRAL STATISTICAL OFFICE

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ANALYSIS REPORT

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(ISLAND OF MAURITIUS)

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FOREWORD

This report, Volume VII, is the last one to be published in the series of eight analytical reports on the evaluation and analysis of the 1983 Housing and Population Census data. Volume VIII has already been published in August 1988.

This series of reports was prepared by a team of eight statisticians and demographers from this office and the Ministry of Health under the supervision and guidance of Dr. K. V. Ramachandran, Regional Adviser at the United Nations Economic Commission for Africa. Work on this project started in 1984 and Dr. Ramachandran undertook several short missions to direct and supervise the analysis. The topics covered in the report were for the Island of Mauritius : Volume I - Evaluation of age and sex data (June 1985); Volume II - Education (June 1986); Volume III - Households and housing (July 1986); Volume IV - Economic activity (April 1987); Volume V - geographical distribution and migration (September 1987); Volume VI - Health, morbidity and mortality (March 1988). Volume VIII was devoted exclusively to the Island of Rodrigues and covered all the above topics.

The preparation of the present report has been unduly delayed because of data processing problems particularly due to the inherent difficulties in processing fertility history data. As a matter of fact assistance had to be sought from the International Statistical Institute which has wide experience in this field. This organisation delegated Dr. Ian Diamond of Southampton University for a 5-week mission to help in the procesisng and analysis of the fertility data.

The present report analyses the fertility data collected at the 1983 Census in the Island of Mauritius. The first part presents an overview of the population growth in the Island of Mauritius during the last century. The remaining chapters deal with trends in marriage pattern, current and completed fertility, and an analysis of birth intervals.

It is hoped that this analysis will be of some assistance to planners and policy makers, particularly those involved in population programmes.

I should like to place on record my gratitude to the analysis team and their staff for all the efforts that were put in the analysis of the data and the preparation of this report. My thanks also go to the United Nations Fund for Population Activities, the United Nations Economic Commission for Africa and the International Statistical Institute for financial and technical assistance. Finally the excellent supervision and guidance of both Dr. K. V. Ramachandran and Dr. I. Diamond are gratefully acknowledged.

D. Zmanay
Director of Statistics

Central Statistical Office
Rose Hill
Mauritius

June 1989

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INTRODUCTION

1.1 Background

Prior to 1871 population growth in the Island of Mauritius was almost exclusively dependent on immigration, since although the birth rate was high the death rate was also as high, and at times higher, than the birth rate. By 1880 immigration had ceased to be an important factor and subsequent population growth depended mostly on natural increase. However, the fertility rates prevailing during the first quarter of this century, although high, were barely sufficient to sustain population growth because of the high levels of mortality. After the Second World War mortality declined rapidly, and since this was not accompanied by declines in fertility, which in fact increased during the fifties, the population growth rate jumped to 3.12% per annum as compared to 0.01% at the beginning of the century.

The country was rapidly faced with all the problems of fast population growth including high unemployment and deterioration of social welfare. Expert opinion in the late fifties and early sixties was unanimous in recommending the early institution of an organised family planning programme backed up by all the supporting services such as information, education, medical service as well as provision of contraceptives. However because public opinion was divided on the issue it was initially left to voluntary organisations to promote family planning and to offer contraceptive services. With time, and perseverance on the part of the volunteers, the idea was gradually accepted by the population. In 1963 the Catholic Church started supporting the natural method of family planning, and finally in 1972 most of the services offerred by the non-government organisations were taken over by the Ministry of Health, excepting the propagation of the rhythm method which remained in the hands of a private organisation. Fertility which had been drastically reduced by that time continued on a general downward trend to reach a point below replacement level in 1985.

The fall in fertility which has occurred since the late sixties cannot be attributed exclusively to family planning. Later age at marriage, as a result of better and longer education and increased employment opportunities for women,have played a prominent role, accounting for one third of the total decline in fertility between 1962 and 1972. General socio-economic development including improvement in health and social services accompanied by changes in attitudes must also have been instrumental in favouring the decline. It can even be said that family planning has been only a partial success up to now since its strategy, which is to reduce fertility at

the relatively young and relatively old ages, has not worked as well as would have been expected. Fertility has been reduced at all ages, but there is still much scope for reduction at the very young ages, and also of fourth and higher order births among older women. Hence there is need for directing sustained efforts, including individualized attention, to this hard core which most probably consists of women who are relatively disadvantaged as regards socio-economic status, particularly education. If this high risk group is made to respond favourably to family planning pro-grammes then fertility should decline further. Furthermore family planning programmes and services may also have to be reviewed so that the need for resorting to abortion is reduced, since a lot of hospital and other re-sources are currently taken up in dealing with complications related to abortion.

In spite of the present below-replacement fertility the population will continue to grow during the next 50-70 years because of the growth mo-mentum generated by past regimes of high fertility. However, the recent fall has affected and will continue to affect the age-structure of the popu-lation, and the problems of an "ageing" population may have to be faced well before the time we reach zero population growth. Fewer children of school going age, decreasing additions to the labour force, higher and higher old age dependency ratios, increasing numbers of widowed persons, particularly women, will all necessitate adjustments to economic and social development policies and programmes as the need for certain services decreases and the strain on others increases.

While the decline in fertility can be monitored through vital registration, it is only through the use of census data that a comprehen-sive understanding can be achieved. Census data allow comparisons between different socio-economic groups and geographical areas as well as permit-ting the estimation of those women exposed to the risk of childbearing in these groups - the denominator in the calculation of fertility rates.

This volume aims to provide a comprehensive analysis of current and recent trends in fertility which will be of great benefit to planners and policy makers. It starts by describing the historical context in which this decline has taken place and introduces the data on fertility available from the 1983 Census. The main part of the report first describes recent trends in marriage, starting childbearing and completed fertility. It then discusses current levels of fertility in Mauritius.

1.2 Population Growth

Since the British occupation of Mauritius in 1810, when the population of the Island of Mauritius was estimated at 100,000 there have been three distinct phases of population growth - an initial rise due primarily to immigration, a stagnation as immigration declined and mortality remained high and finally an increase due primarily to a large decline in mortality. The size and evolution of the population of the Island of Mauritius as enumerated at each census since 1846 is contained in Table 1.1 and is clearly discernible from Figure 1.1, while Table 1.2 gives the crude birth rates for the period 1921 - 1960.

Table 1.1 - Population of Island of Mauritius as enumerated at each census (1846 - 1983)

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

1/ Number of males per 100 females

2/ 'de facto' population

Table 1.2 - Crude Birth Rates, 1921 - 1960

Period	Crude birth rate
1921 - 25 Average	39.1
1926 - 30 "	35.2
1931 - 35 "	31.3
1936 - 40 "	33.1
1941 - 45 "	36.0
1946 - 50 "	44.7
1951 - 55 "	44.3
1956 - 60 "	40.7

The first phase, between 1846 and 1881 is characterised by a high rate of increase caused primarily by high net immigration, particularly of indentured labourers from the Indian sub-continent. During this interval the average annual growth rate was 2.37% although it rose to as high as 5.87% in the period 1851-1861. Both fertility and mortality were high during this period but the high proportion of male immigrants led to a large im- balance in the sex ratio.

The period from 1881 to 1944 was the second phase. There was a low rate of increase in the population in this period. Immigration slowed down rapidly and by 1910 had virtually stopped. The period was characte- rised by moderately high fertility but population growth was slowed down as a result of high mortality with sporadic mortality crises caused by epide- mics and hurricanes. A major cause of the mortality was endemic malaria. During this 63 year period the population grew at an annual rate of only 0.24% and actually witnessed a decline between 1901 and 1911.

The third phase of the demographic development of Mauritius took place after the Second World War. There was a large increase in the popu- lation caused primarily by a sharp drop in mortality, but there was some increase in fertility too. As the drop was most marked amongst infant mortality the result was a sustained increase in the population size as fertility did not immediately decline. This increase caused great concern to planners and policy makers as the population density became very high. Mauritius is a small island with an area of only 1860 square kilometres. Between 1952 and 1962 the population density rose from 269 to 365 persons

FIG. 1.1- POPULATION OF ISLAND OF MAURITIUS AT EACH CENSUS (1846 - 1983)
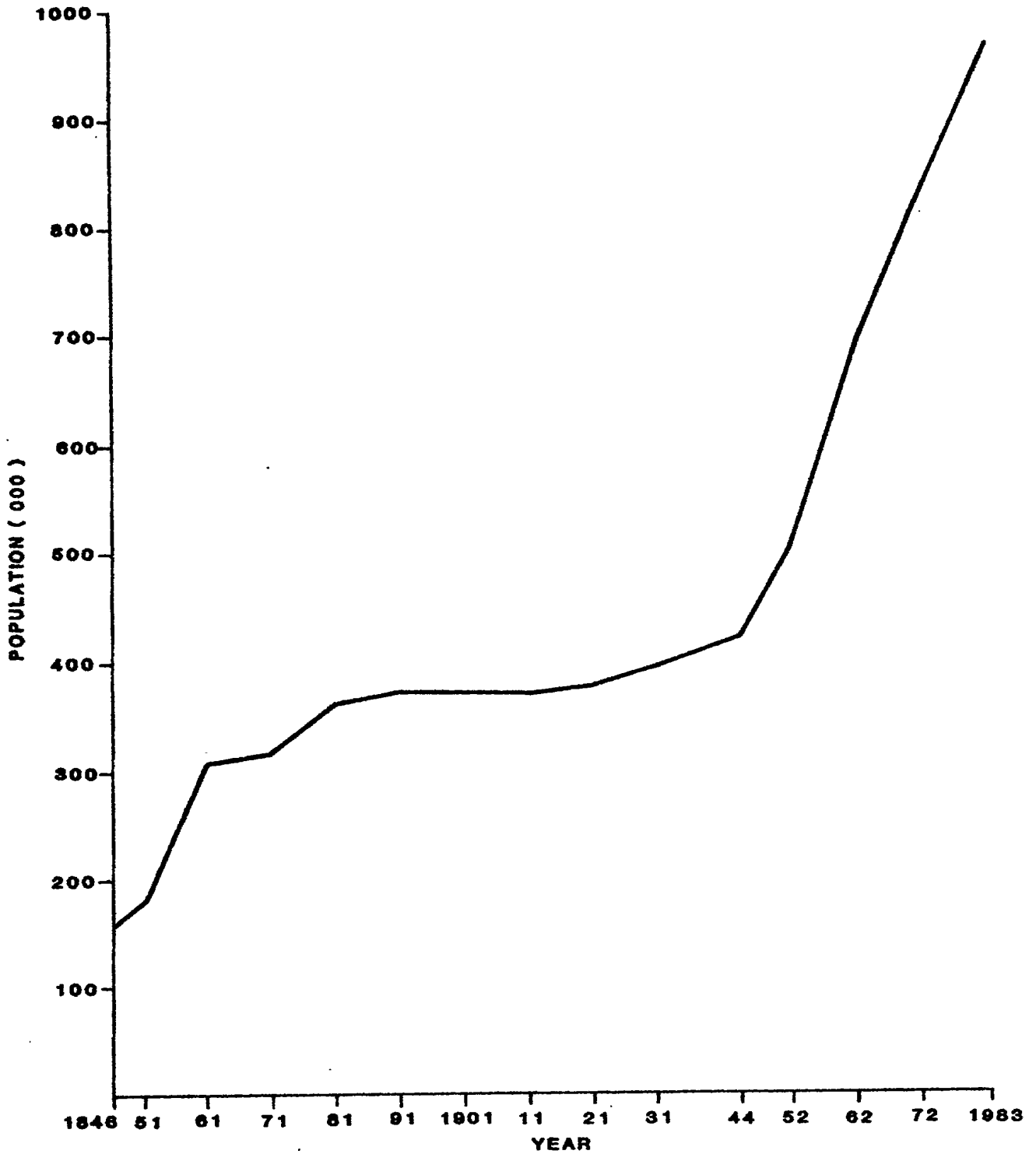
per square kilometre with an average rate of increase of 3.12% per annum. Were this rate of growth to be sustained the population would have risen from 682,000 to just under 3 million by the year 2002.

However, as with most societies, this period of high fertility and low mortality did not continue and in the years after 1962 Mauritius completed its demographic transition. Through Government programmes, the adoption of widespread family planning and an increased desire for smaller families, the population was able to check the high rate of natural increase.

Three organisations are presently advising the population about family planning practices and contraceptive methods. They are the Family Planning/Maternal Child Health Division of the Ministry of Health, the Mauritius Family Planning Association and Action Familiale. According to a Contraceptive Prevalence Survey conducted among ever-married women in 1985 by the Ministry of Health, virtually all respondents reported knowledge of at least one supplied method of contraception and 86% of them had used a contraceptive method at some time.

For the decade between 1962 and 1972 the rate of increase declined to an annual rate of 1.94% and still further to 1.44% between the two most recent censuses.

It is this last decline, its causes and the way it was achieved through a combination of factors, such as, later marriage, delayed childbearing, increased spacing between births and early stopping, which forms the substantive content of this volume.

1.3 Decline of Fertility

The first major decline in fertility took place between 1962 and 1972. During this time fertility fell by almost a half, as indicated by some indices of fertility displayed in Table 1.3. The crude birth rate (CBR), although a commonly used measure, is rather poor as it does not take into account changes in the age structure of the population. For example, it disguises the second decline in fertility which took place in the late 1970's because, while the fertility rate fell sharply there was actually an increase in the number of births as a result of there being an increasing number of women of reproductive age.

Table 1.3 - Some indices of fertility, Island of Mauritius, 1961 - 1986

	CBR 1/	Standardised GFR 2/	TFR 3/	NRR 4/
1961 - 63	39	200	6.07	2.84
1971 - 73	24	112	3.37	1.57
1974	27	114	3.47	1.62
1975	25	107	3.19	1.40
1976	26	106	3.13	1.38
1977	26	103	3.04	1.33
1978	27	105	3.09	1.36
1979	28	104	3.07	1.34
1980	27	99	2.89	1.27
1981	25	92	2.68	1.19
1982	22	82	2.39	1.05
1983	21	76	2.23	1.09
1984	20	72	2.10	1.02
1985	19	69	1.98	0.97
1986	18	67	1.95	0.97

1/ CBR = Crude Birth Rate = Number of births per 1000 population per year.

2/ Standardised GFR = General Fertility Rate, controlling for age struc-
ture. The standard population is that from the 1983 Census

3/ TFR (Total Fertility Rate):average number of children a woman now at
the start of her reproductive life would expect if she experienced
current fertility levels

4/ NRR (Net Reproduction Rate): average number of daughters to each woman
after controlling for mortality

A better index of current fertility is the standardised general
fertility rate (GFR) which relates only to women of reproductive age and
controls for the effects of different age structures. This rate shows
clearly that the initial decline in fertility slowed somewhat in the early
seventies, primarily as a result of slight increase in fertility of those
women who had postponed their childbearing in the sixties. There were
also favourable economic circumstances at this time due to a sugar price
boom and substantial increases in real income. From 1971 - 73 to 1979
the standardised GFR fell by only seven per cent.

Since 1979 however there has been a second rapid decline in fertility - between 1979 and 1986 the GFR fell by 36 per cent. It remains to be seen whether this decline will be maintained but a major aim of this report will be to use the census data to explain the social, economic and geographical context in which this second decline took place.

The remaining two indices in Table 1.3, the TFR and NRR give indications of expected family size. It can be seen that the expected number of children borne by each woman initially declined from 6.07 in 1962 to 3.37 in 1972 and recently has again reduced rapidly, reaching 1.95 in 1986. It is important to note that in 1985 for the first time fertility fell below replacement level. It is likely that part of this recent decline is caused by a further postponement of childbearing but it appears certain that there has also been a real decline in desired family size.

To demonstrate age patterns in the decline, Table 1.4 and Figure 1.2 contain the age specific fertility rates for this period. The decline is most marked among those women aged 20 - 24 and 25 - 29 but there are also steady declines amongst women aged 30 - 34 and 35 - 39. This suggests that as well as postponement there is a trend towards an earlier age at stopping childbearing. An important aspect of the analyses presented in this report will be to consider recent fertility, to assess the relative impact of each of these aspects on the decline in fertility.

The slight increase in ASFR at age 15 - 19 in recent years may be due to some increase in teen age marriage consequent on modifications to civil status law. As from 1984 children under 18 but above 16 years of age are allowed to marry with the consent of their parents only and without the previous requirement of approval from a magistrate.

The demographic change in the Island of Mauritius, marked particularly by a decline in fertility can be explained by the economic and social changes that have prevailed recently in the Island. With the creation of the Export Processing Zone more female oriented jobs have become available.

The changes in economic activities of women and their larger and longer participation in education have had great impact on marriage and child bearing. The improved social and economic conditions and better housing, health and recreational facilities certainly did have influence on age at marriage, household type and formation, fertility and family size.

Table 1.4 - Age-specific Fertility Rates, Island of Mauritius, 1962 - 1986

Age-groups (years)	1961-1963	1971-1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
15 - 19	114.6	49.7	55.9	56.6	60.5	60.0	62.2	63.3	60.6	54.4	48.8	40.1	37.0	37.2	39.6
20 - 24	307.1	187.1	185.8	173.6	174.8	168.1	179.6	178.9	172.3	160.6	143.6	132.6	127.3	120.7	115.9
25 - 29	306.2	186.0	192.0	176.6	179.2	172.7	175.6	171.6	159.4	146.1	132.8	131.0	123.9	117.5	115.5
30 - 34	248.0	130.4	137.9	125.6	116.2	117.8	114.2	113.4	104.9	101.7	86.1	85.7	78.5	74.8	69.9
35 - 39	168.2	84.4	84.4	72.0	65.6	64.5	61.9	64.2	58.3	54.9	49.5	40.8	39.4	39.1	35.3
40 - 44	62.5	31.7	32.3	30.5	27.4	23.2	21.6	19.4	19.5	16.1	14.3	13.6	12.7	12.5	10.4
45 - 49	8.0	3.7	4.9	3.0	2.3	2.0	2.3	2.9	2.5	2.4	2.0	1.9	1.3	1.0	1.4
TFR	6.1	3.4	3.5	3.2	3.1	3.0	3.1	3.1	2.9	2.7	2.4	2.2	2.1	2.0	1.9

Note : The Age Specific Fertility Rate (ASFR) is defined as

$$\text{ASFR} = \frac{\text{number of births to women aged } (x, x+n) \text{ in one year}}{\text{number of women aged } (x, x+n) \text{ in that year}} \times 1000$$

FIG. 1.2 - AGE SPECIFIC FERTILITY RATES (1974 - 1985)
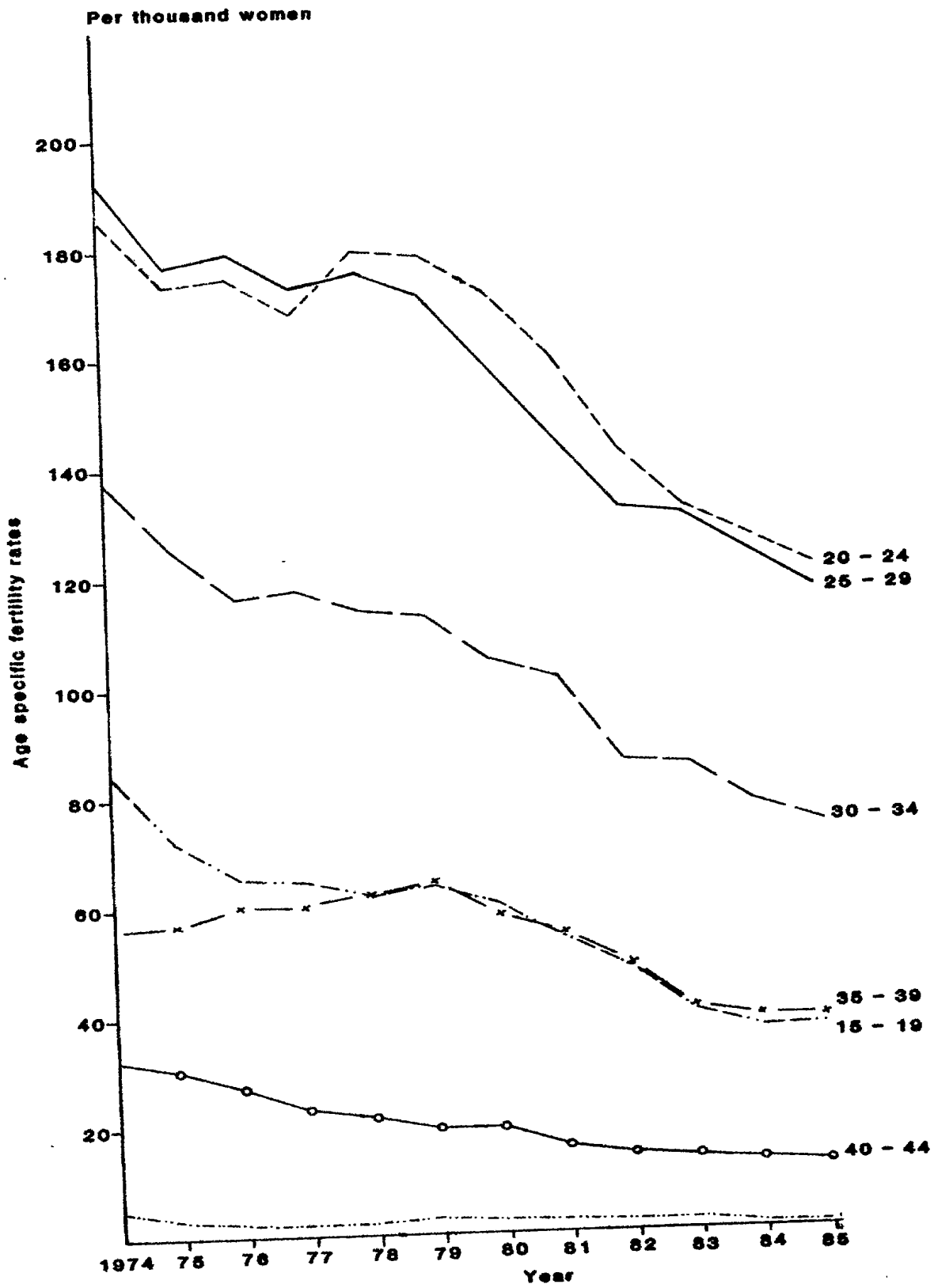
From 1962 to 1983 the female labour force increased by 5.1% annually on the average as compared to 2.7% for males. From the table below which shows the labour participation rates for females for the period 1962-1983, it can be noticed that there is a continuous rise in female participation rates in the reproductive ages.

Thus, being in the labour force, women are becoming more and more self-dependent and tend to postpone marriage.

Table 1.5 - Labour participation rates (%) by age-groups,(females),1962 - 1983

Age-group	1962	1972	1983
15 - 19	8.0	14.8	24.3
20 - 24	16.0	21.8	38.7
25 - 34	18.0	21.3	32.3
35 - 44	24.0	26.6	32.9
45 - 54	26.0	28.0	29.7
55 - 64	18.0	19.0	16.1
65 +	7.0	5.1	2.6

From Table 1.6, it is obvious that there is a change in the occupational structure of women between 1972 and 1983. There is a decrease in the number of women working in agriculture while there are sharp increases in female employment in industries and higher status occupations.

Table 1.6 - Female population in employment by major occupational group, 1972 and 1983 Censuses

Major Occupational Group	1972	1983
Professional and administrative	4,987	8,903
Clerical and related workers	2,921	8,246
Sales and service workers	14,775	15,203
Agricultural workers	16,499	15,590
Production workers	4,677	19,059
Occupation not classified	271	60
Total female in employment	44,130	67,061

The school enrolment rate in the Island of Mauritius has increased by 7% for males and 15.3% for females from 1972 to 1983 as a result of the introduction of free secondary education. The gap between participation of boys and girls in education has narrowed considerably, mainly for secondary education which is free since January 1977. Table 1.7 presents the age-specific enrolment rates and growth rates in participation for both males and females as obtained from the 1972 and 1983 Censuses.

Table 1.7 - Age specific enrolment rates (%) by sex, 1972 and 1983 Censuses

Age	1972 Census		1983 Census		% increase 1972-83	
(years)	Male	Female	Male	Female	Male	Female
5	73.8	73.7	98.0[1/]	98.0[1/]	33	33
6	96.5	95.4	98.4	98.4	2	3
7	96.6	95.6	98.0	98.3	1	3
8	96.5	95.7	98.3	97.9	2	2
9	95.8	94.5	97.3	97.2	2	3
10	93.6	91.1	96.1	95.4	3	5
11	88.9	84.1	92.4	89.6	4	7
12	71.5	59.8	81.5	75.6	14	26
13	56.7	44.1	69.1	62.7	22	42
14	48.7	36.4	59.7	54.6	23	50
15	44.0	31.6	51.8	48.4	18	53
16	39.0	27.8	43.7	40.7	12	46
17	33.0	21.3	37.5	32.8	14	54
18	23.9	13.1	25.0	20.0	5	53
19	13.2	6.6	13.7	9.3	4	41

1/ These rates are irrespective of grade attended and include children attending pre-primary school.

The more educated the women become, the more conscious they are of the drawbacks of large families. Thus in the past decade or so there has been a perceptible socio-economic transformation in the country.

Chapter 2

DATA COLLECTION, QUALITY AND IMPUTATION

2.1 Data collection

2.1.1 Vital Registration

The registration of vital events in Mauritius dates back to the 18th Century. The first general order requiring the clergy to keep a register of baptisms, marriages and burials was passed in 1766 under French rule. 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.

In 1808, the laws relating to Civil Status were brought together under the "Code Napoleon", the provisions of which were added to and partly amended or repealed by the British, who took possession of 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 1981.

The occurrence of vital events, births (live and still), deaths and marriages, must by law be registered within a prescribed time at a Civil Status Office. After registration of any such event, the relevant information is transferred on special cards which are forwarded to the Central Statistical Office for editing, coding and subsequent computer processing.

The following information is collected on registration of a 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, age of father, plurality and place of delivery.

A delay of 45 days is allowed for the declaration of births and this may cause a problem in 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.

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. The 1983 census data evaluation further confirmed it. 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.

However, although the data are good with respect to coverage, the quality of information obtained on some topics may not be quite satisfactory. 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 order to identify the key aspects of the marriage data available it is also necessary to consider marriage legislation. Marriage in Mauritius is governed by the "Code Napoleon" in force since the time of the French occupation of the country (1715 - 1810). Under this law, two main types of marriages are celebrated - civil and religious. However, prior to 1982 only civil marriages were recognised by law. Couples married religiously were not considered to be legal spouses and their offspring were not considered legitimate but 'natural'. Catholics were required to contract a civil marriage before celebrating a religious marriage but this was not required for Hindu or Muslim marriages.

Conscious of the problems, legal and otherwise, facing both the partners and children of religious marriages, the Government brought certain amendments to the Code Napoleon. These amendments came into force on the 1st January, 1982. The main thrust of this change was that

"Except in the case of a muslim marriage, no religious marriage shall be celebrated unless

(a) the partners of the religious marriage are already civilly married to each other or

(b) the celebrant is the holder of an authority to celebrate a religious marriage which shall have the effect of a civil marriage or

(c) the celebrant is actively or passively assisted at the religious ceremony by a person authorised to celebrate civil marriage..."

Muslim marriages were exempt from this amendment, being subject to Muslim Personal Law if both partners declare at the time of marriage that they wish their marriage to be so governed. It must be noted that the Muslim Personal Law was repealed in 1987.

The registration of a marriage asks for the following information: 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.

2.1.2 Population Census

Questions on birth history and marriage history were included in the Population Census questionnaire for the first time in 1972. However, the data collected were neither published nor properly analysed. Because of the importance of fertility data, the questions were again included in the 1983 Census.

Information was sought from ever-married women under 55 years of age on all their live births. The live births include those to the women in all marriages (including cohabitation), no matter whether the child was adopted out or had died. They do not include the children adopted in or foetuses which were not alive at the time of delivery. All the live births were recorded in birth order, together with information on sex, date of birth, and whether the child was still alive at the time of census.

Unlike many other developing countries where only questions on total number of births are asked, the birth history method provides comprehensive information for the analysis of cumulative fertility, current fertility and birth intervals. The way the information was collected helped the enumerator to check to some degree, the accuracy of the information. However, missing information on the date of some live births may jeopardise a proper analysis of birth intervals.

As far as marriage history is concerned, information was asked on the date (month and year) of the start of the union and the date the union ended (if applicable). Women who had contracted more than one union were required to give information concerning the first and last unions only.

2.2 Data quality

These data are likely to be subject to a number of reporting errors:-

(i) prior to 1982 the time lag between a religious marriage
and its subsequent civil ratification was often quite
long. While it was made clear in the census questionnaire
that information was required on the date of the start of
the union it is likely that there were some reporting
errors in the date of the start of a union;

(ii) there may have been some misreporting with respect
to polygamous marriages. While polygamy is rela-
tively infrequent it is possible that a man could
have had children with different women each of whom
reporting themselves married;

(iii) there could be some misreporting due to the respon-
dent wishing to conceal unpleasant or socially un-
desirable facts regarding the marital experience
both of themselves and persons on whom they were
reporting;

In addition, the data collected by the census are not fully compre-
hensive with respect to marriage histories. In particular (i) for women who
had three or more marriages there is information only on the first and last
marriage and (ii) there is no information on the reason for the termination
of a marriage. This can be inferred for women who have not started a second
or subsequent union but for the others all that is known is that their first
marriage is terminated.

However it is not felt that any of these possible sources of bias
or missing information is likely to have a significant effect on the marriage
data collected by the census.

A number of consistency checks were made on the marriage data.
First the number of men and women stating that they were currently in a ma-
rriage was compared. There were 4,000 more women than men currently in a
marriage. It is possible that this excess is due to (a) men temporarily
working abroad and therefore not enumerated in a "de facto" census and (b)
men cohabiting with more than one woman.

The data were also checked for obvious inconsistencies such as a
'wife' cannot be reported as "single' or 'widowed'. In general such incon-
sistencies were few and were edited.

In all, the non-response rate for these census questions on mari-
tal status was low, 0.07% for men and 0.03% for women.

2.3 Editing and Imputation

When the data required from a respondent involve him having to
recall dates in the past, errors may occur. These can take a number of
forms but among the most important are :-

(a) misreporting - a respondent may report an event as further
    in the past than was the case because the event simply seems
    "a long time ago";

(b) partial or complete non-response - the date of the event may
    be reported only to some degree or not at all.

In many cases it is impossible to identify recall errors of the
first type but some responses may be assumed to be incorrect if they are
either biologically or socially very unlikely. For example if the time bet-
ween two births is less than 7 months or if the age at marriage is less than
12 years, it is fair to assume misreporting. Cases involving non-response
are obviously easier to detect but it can prove hard to identify the correct
date.

The fertility histories collected in the 1983 Census were first
checked for inconsistencies and non-reporting. The magnitude of non-reporting
among all the births reported in the census was as follows:

Field(s) not reported	No. of cases
Day only	22,716
Day and month	19,576
Day and year	34
Day, month and year	4,500
Month only	86
Year only	251
Month and year	13

It was decided to ignore, in the present analysis, the records of
any woman with at least one year of birth missing. As this type of error
involved only 2,539 women, i.e. about 2.6% of the women aged 15-54, it was
expected that this would not affect the analysis significantly. However,
when the data of these excluded women were analysed, it was clear that there
were a number of biases, particularly that non-response was higher among
older women and those with high parity. The total number of births to these
excluded women is 16,928, representing 3% of the total number of children
included in the analysis of completed fertility. Table 2.1 gives a break-
down of the 2,539 excluded women by age-group and geographical district.

Table 2.1 - Women excluded from fertility analysis by age-group and geographical districts

Age group (yrs)	Geographical district									
	Whole Island	Port-Louis	Pample-mousses	Riv. du Rempart	Flacq	Grand Port	Savanne	Plaines Wilhems	Moka	Black River
15-19	6	1	2	2	-	1	-	-	-	-
20-24	49	3	4	9	7	11	1	8	5	1
25-29	82	10	7	11	10	11	5	18	6	4
30-34	188	13	23	26	31	36	10	24	12	13
35-39	273	27	26	44	32	54	15	41	22	12
40-44	434	41	53	53	68	74	33	71	22	19
45-49	712	78	77	97	90	122	47	110	58	33
50-54	795	76	92	88	116	127	60	133	70	33
TOTAL	2,539	249	284	330	354	436	171	405	195	115

Missing day of birth was ignored but in cases where month was missing, they were imputed and the procedures applied are explained in Appendix I.

The tables obtained from the fertility records suggested that the number of children born to women aged 50-54 was, on average, less than those born to women aged 45-49. There were also some major regional differentials. In particular Black River had the highest levels of completed fertility among women aged 15 - 19 at the census but the lowest levels at older ages. This seems very unlikely especially given the socio-economic characteristics of Black River residents. A possible explanation is that a large number of the records excluded from the analysis would be of older women with large numbers of children as seen from Table 2.2.

Table 2.2 - Age specific completed fertility rates($\%oo$)of women excluded from analysis

Age-group (years)	Completed fertility rate
15 - 19	3.50
20 - 24	2.82
25 - 29	3.39
30 - 34	4.71
35 - 39	5.66
40 - 44	6.85
45 - 49	7.29
50 - 54	7.41

CHAPTER 3

MARRIAGE

3.1 Introduction

In a country such as Mauritius where the vast majority of people marry and where cohabitation and illegitimacy are both relatively infrequent, it is especially important to analyse trends in marriage patterns. Marriage will usually signal the onset of a couple's exposure to the possibility of childbearing and hence any change in marriage patterns will be likely to have important implications on levels and trends of fertility. For example in most countries where there has been a large decline in fertility this has been accompanied by an increase in the age at marriage.

Marriage patterns also have important policy implications with regard to family formation and in particular for household and labour force projections, the latter being increasingly important as a result of the upward trend in female labour force participation in Mauritius.

This section will first consider the availability of spouses in Mauritius. It will then describe the data collected in the 1983 Census and discuss the trends and patterns in marriage evident from the data.

3.2 · The marriage market in Mauritius

Levels of marriage in a society may depend on many social and economic factors but the relative number of men and women in the population is probably the most crucial. This relation is known as the marriage market and is probably best measured by a sex-ratio. Many have been proposed but the essential criteria are that the sex ratio reflects the numbers of eligible men and women in the society and that it compares those who are most likely to marry each other. This last factor is important as in almost all societies men marry at older ages than women, a phenomenon which is very clear in Mauritius.

From Table 1.1 it is clear that the predominance of male immigrants in the nineteenth century would have resulted in high levels of male celibacy. However, through the twentieth century the overall sex ratios have remained fairly steady, suggesting a stable marriage market.

A somewhat different picture is identified in Table 3.1 which considers the sex ratios by marital status at the 1983 Census. Two indices of the marriage market are shown - Single (A) is the ratio of single men in a particular age-group to single women in the same age-group while Single (B) is the ratio of single men in an age group to single women in the age-group younger than them. An average index perhaps may reflect the marriage market more realistically, because the mean age difference between spouses is around 3.7 years.

The most important ages are the younger ones as it is here that virtually all first marriages take place, with obvious planning and policy implications. Column (4) of Table 3.1, the Single (B) sex ratios shows that there are a number of distinct fluctuations in the marriage market. In particular there is a very low sex ratio for men aged 30-34 to women aged 25-29.

Table 3.1 - Sex ratios by marital status: Island of Mauritius (1983 Census)

Age (years) (1)	Total (2)	Single [1] (A) (3)	Single [2] (B) (4)	Married [3] (5)	Widowed (6)	Divorced/ Separated (7)
15 & over	99.7	139.1	-	97.8	14.3	33.1
15-19	102.0	113.9	-	5.7	26.7	3.5
20-24	101.6	180.1	92.7	25.6	11.9	11.9
25-29	100.1	197.1	82.5	72.4	8.7	22.3
30-34	101.4	122.1	64.6	106.4	6.6	23.7
35-39	96.9	95.8	95.7	109.5	5.2	21.8
40-44	97.3	120.6	120.6	111.6	5.5	28.7
45-49	98.6	128.2	128.2	120.1	6.5	38.9
50-54	100.7	131.2	104.7	133.2	9.3	48.0
55-59	98.7	126.5	128.7	150.7	12.7	61.0
60-64	93.5	92.0	85.4	171.6	15.6	84.4
65-69	86.6	73.7	94.0	197.6	18.4	112.0
70-74	74.3	54.2	44.5	231.1	20.2	125.4
75+	50.0	30.4	18.5	254.1	18.7	153.6

Note

[1] Single (A) is the sex ratio of men aged (x, x+4) to women aged (x, x+4)

[2] Single (B) is the sex ratio of men aged (x+5, x+9) to women aged (x, x+4) and more accurately reflects the marriage market

[3] Married includes both legal and consensual marriages

An important point to note from Table 3.1 is that there is definitely an excess male mortality which has resulted in the sex ratios for widowhood being fairly low.

In summary it would appear that the marriage market in the Island of Mauritius is fairly stable although there are likely to be relatively high levels of female celibacy among the cohorts born between 1948 and 1958.

3.3   Marital status

3.3.1   Introduction

The analysis of the marital status data has 3 main aims:
to examine recent trends and patterns in marriage and marital break-
down in the Island of Mauritius; to identify the extent to which
the decline in fertility can be explained by an increase in the
age at marriage and to investigate whether any changes have occurred
uniformly across geographical boundaries and socio-economic groups.
Figure 3.1 shows the differences in the distribution of the population
by marital status, age group and sex as revealed from 1983 census.

Table 3.2 shows the percentage distribution of female popu-
lation by 5-year age group and marital status. Marriage is almost
universal in the Island of Mauritius, as depicted by the low percent-
ages of never married women aged 50 and over. While the proportion
of women in a married state increases up to age-group 45-49 and then
declines, that of widowed women increases consistently with age to
reach a peak of 78.9% for women aged 75 and over.

Table 3.2 - Percentage distribution of female population by age-group
and marital status - 1983 Census

Age-group	Single	Married[1]	Widowed	Divorced and separated
Under 15	99.9	0.1	-	-
15 - 19	89.0	10.5	0.1	0.4
20 - 24	49.5	47.9	0.3	2.3
25 - 29	24.3	70.8	0.9	4.0
30 - 34	14.8	76.8	2.4	6.0
35 - 39	8.8	79.1	5.2	6.9
40 - 44	5.7	78.9	8.8	6.6
45 - 49	4.1	75.0	14.8	6.1
50 - 54	4.0	68.1	22.2	5.7
55 - 59	3.7	57.7	34.3	4.3
60 - 64	4.7	46.1	45.9	3.3
65 - 69	5.2	35.2	57.3	2.3
70 - 74	6.1	23.7	68.3	1.9
75 & over	7.9	12.4	78.9	0.8

1/ including consensually married

This section will first consider the basic demographic data
and then subsequently investigate the background factors influencing
marriage patterns.

- 22 -

FIG. 3.1 – MARITAL STATUS OF POPULATION AGED 15 AND ABOVE BY AGE AND SEX.

ISLAND OF MAURITIUS – 1983 CENSUS
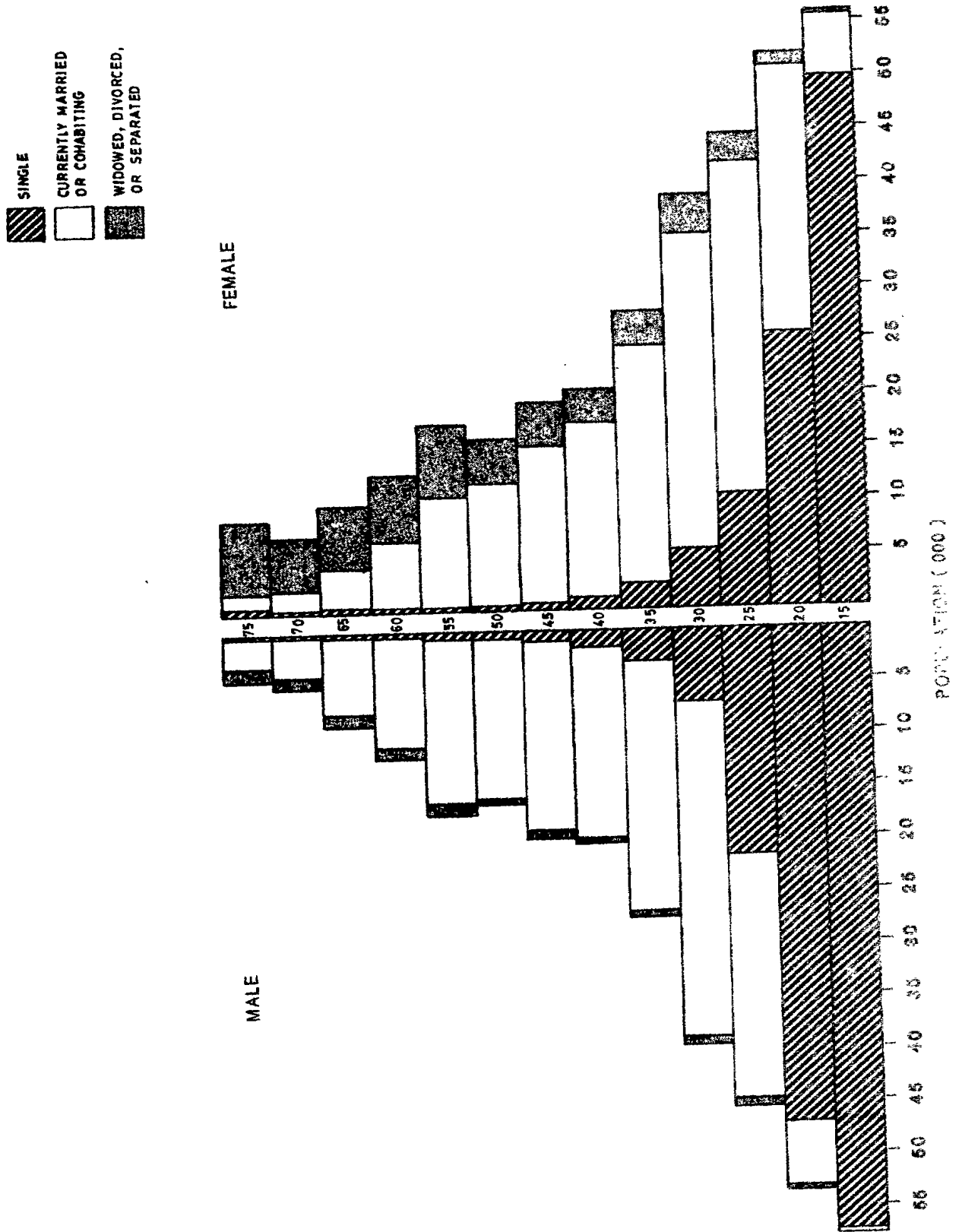
3.3.2 Trends in marriage

The proportion of the population in each marital state at the last 3 censuses is shown in Table 3.3.

Table 3.3 - Standardised percentage distribution of population aged 15 years and over by sex and marital status for last three censuses, using 1983 age distribution

Sex and marital status		Census Year		
		1962	1972	1983
Male:	Single	40.0	42.1	43.1
	Married[1]	52.0	51.5	52.0
	Consensually married	3.5	2.5	1.8
	Widowed	3.0	2.4	1.8
	Divorced and separated	1.5	1.5	1.3
Female:	Single	21.0	27.4	30.3
	Married[1]	56.5	53.0	51.8
	Consensually married	4.6	2.6	1.9
	Widowed	14.5	12.9	12.2
	Divorced and separated	3.4	4.1	3.8

[1] civilly/religiously married

The main trends are a steady increase in the proportions single aged 15 and over and a decline in those reporting consensual marriage.

It is likely that some people in the latter group have gone into the "married" group partly as a result of recent legislation and that the increase in the proportion single reflects an increasing age at marriage.

There is also a marked decrease in the incidence of widowhood reported at the census. This probably reflects the decline in mortality experienced at this time.

The age pattern of marriage at the 1983 Census is illustrated in Figure 3.2. Marriage starts at age 15-19 for women and at ages 20-24 for men and the number of people married in the population increases steadily until ages 25-29 for women and 30-34 for men after which mortality takes its toll and the number of married people in the population decreases steadily.

FIG. 3.2 – PROPORTIONS OF POPULATION MARRIED (INCLUDING CONSENSUALLY MARRIED)
– ISLAND OF MAURITIUS (1983 CENSUS)
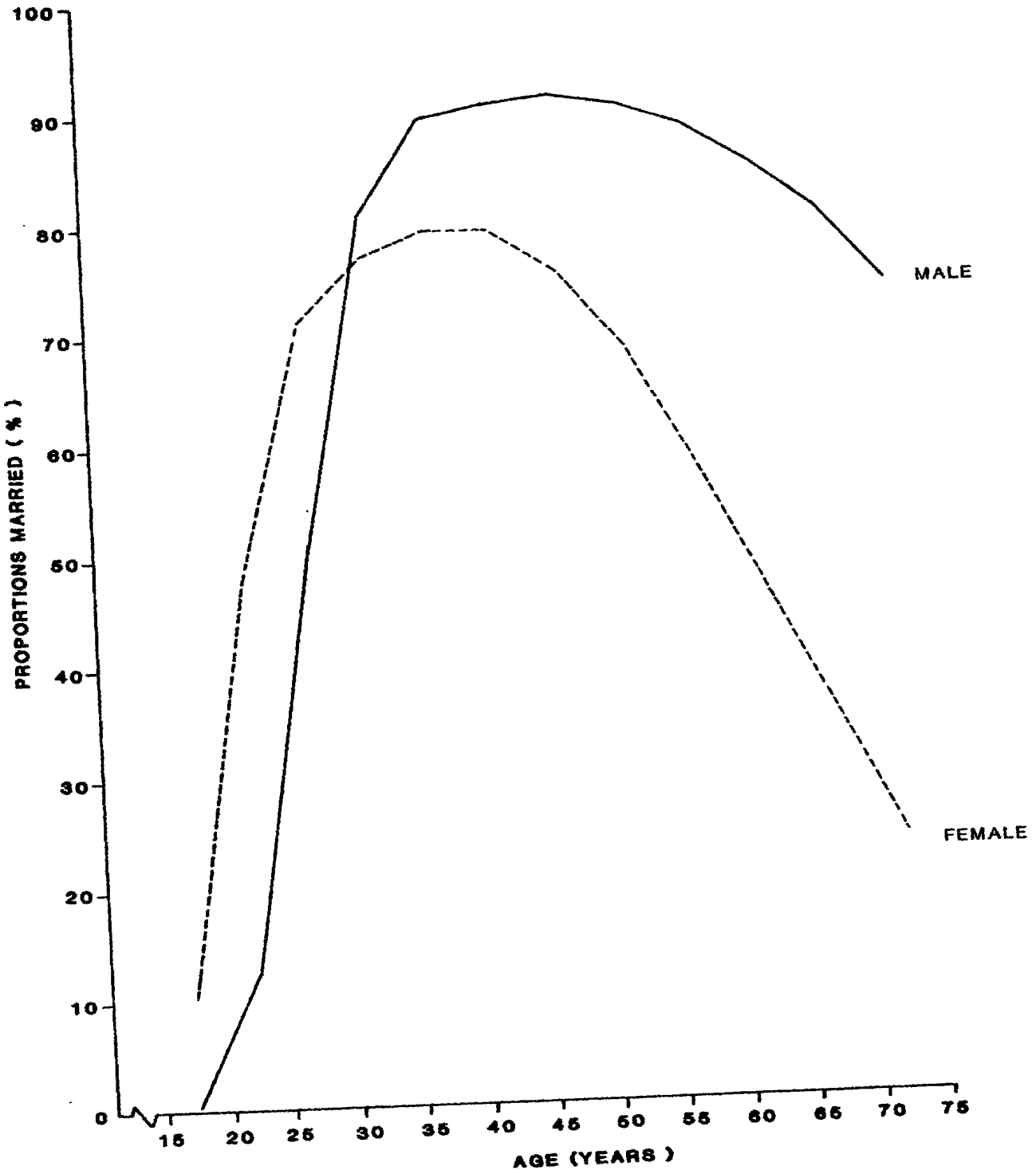
Table 3.4 - Proportions (%) married[1] by age-group, 1962, 1972 and 1983 Censuses

Age-group (years)	1962 Census		1972 Census		1983 Census	
	Male	Female	Male	Female	Male	Female
15 & over	59.7	61.5	52.9	53.4	53.8	53.8
15-19	0.9	27.8	0.6	12.5	0.6	10.5
20-24	21.1	68.2	15.4	49.8	12.1	47.9
25-29	62.4	83.1	54.4	76.0	51.2	70.8
30-34	81.1	85.3	80.4	83.6	80.6	76.8
35-39	87.4	83.9	88.4	84.1	89.4	79.1
40-44	89.1	78.5	89.3	79.9	90.4	78.9
45-49	88.0	71.1	89.3	74.3	91.3	75.0
50-54	86.2	61.2	88.5	64.9	90.0	68.1
55-59	83.8	48.4	85.8	54.6	88.1	57.7
60-64	78.7	37.5	81.0	42.0	84.7	46.1
65-69	73.1	26.4	75.9	30.8	80.4	35.2
70-74	67.3	17.7	67.9	20.8	73.7	23.7
75 & over	56.3	11.6	56.6	11.2	63.1	12.4

1/ including consensually married

The proportions married for different age groups are contained in Table 3.4. This shows that at ages 30-34 there has been little change in the proportions married indicating that there is no evidence of a decline in the proportions who will get married. However it is clear that there has been a change in the timing of marriage over the last 3 decades. Between 1962 and 1972 there were marked increases in the proportions of the population between 15-29 years not married — from 71% to 82% for males and from 47% to 57% for females. However this dramatic increase has not been maintained between 1972 and 1983 as the proportions under 30 not married has remained constant. Thus in 1983, 80% males and 57% females between 15-29 years have never contracted a marriage. This probably reflects that the transition to later marriage occurred quickly but there was neither a real decline in the propensity to marry nor a massive increase in the age at marriage which would have taken longer to effect.

Marriage is essentially a universal institution in the Island of Mauritius as evidenced by the fact that less than 5% of both men and women aged 50 and over have never been in a union. There is no evidence from these data that this figure is likely to increase significantly among the younger cohorts now in the main marriageable ages.

The extent of the increase in the age at marriage can be measured by the Singulate Mean Age at Marriage (SMAM). This is an index of the mean age at first marriage of those who ever marry. It is usual to assume that all first marriages occur between 15 and 50 when calculating SMAM. In addition the small number of cases where marital status was not stated have been left out of this calculation.

The SMAM's for the last 3 censuses are contained in Table 3.5

Table 3.5 - SMAM (years) by sex for last censuses (1962-1983)

Census Year	Male	Female
1962	26.18	19.93
1972	27.20	22.45
1983	27.51	23.76

It can be seen that the rate of increase observed between 1962 and 1972 has not been maintained. However the increases have continued more markedly for women than for men resulting in a decrease in the difference between average age at marriage for men and women from around 6.3 years in 1962 to 3.7 years in 1983. A continued decrease in this difference could have a marked effect on the marriage market in the future as the smaller cohorts resulting from the recent decrease in fertility reach marriageable age.

The median age at marriage for ever-married women by 5-year age group is shown in Table 3.6. From the table one notices that the older cohorts married rather at an early age but recently there seems to be a reduction in age for the very young cohorts.

Table 3.6 - Median age at marriage for ever-married women - 1983 Census

Age-group (years)	Median age at marriage (years)
15 - 19	16.38
20 - 24	18.36
25 - 29	19.90
30 - 34	19.97
35 - 39	18.60
40 - 44	17.96
45 - 49	17.74

3.3.3 Marriage differentials

As to be expected, women with no education have a higher propensity to marry earlier. The higher the level of education, the more advanced is the age at marriage. Table 3.7 shows the proportion of women aged 15-24 who are ever married by level of education.

Table 3.7 - Proportion of women aged 15-24 who are
ever married by level of education -
1983 Census

Level of education	Proportion ever married (%)
No education	47
Primary	40
Secondary	20
Tertiary	14

Figure 3.3 which displays the percentage of ever married women under 45 years by age at Census and age at first marriage clearly indicates that the distribution of older cohorts are highly skewed to the right, thus showing that the older women have marrried earlier than the younger cohorts.

3.3.4 Age pattern of marital stability

The age at which a woman married and the subsequent stability of her marriage are 2 factors that can have direct effects upon the number of children she may have during her reproductive life. A measure of the frequency of first marriage is provided by the number of first marriages in a given age group per 1,000 single women in the same age group. This measure is known as the age-specific first marriage rate (ASMR).

The table below shows the ASMR for the 1983 Population Census

Table 3.8 - Age-specific marital rates - Island of Mauritius (1983 Population Census)

Age-group (years)	Total number of married women	Number of women married once only before age 50	Proportion of women married once only before age 50 (%)	ASMR (Per 1000)
15 - 54	173,963	167,137	96.1	1,712
15 - 19	6,125	6,098	99.6	122
20 - 24	26,137	25,892	99.1	1,001
25 - 29	33,431	32,798	98.1	3,028
30 - 34	32,435	31,256	96.4	5,449
35 - 39	24,825	23,561	94.9	9,601
40 - 44	18,678	17,493	93.7	14,926
45 - 49	17,865	16,656	93.2	20,872
50 - 54	14,467	13,383	92.5	21,009

FIG. 3.3 — PERCENTAGE OF EVER MARRIED WOMEN UNDER 55 YEARS
BY AGE AT CENSUS AND AGE AT FIRST MARRIAGE
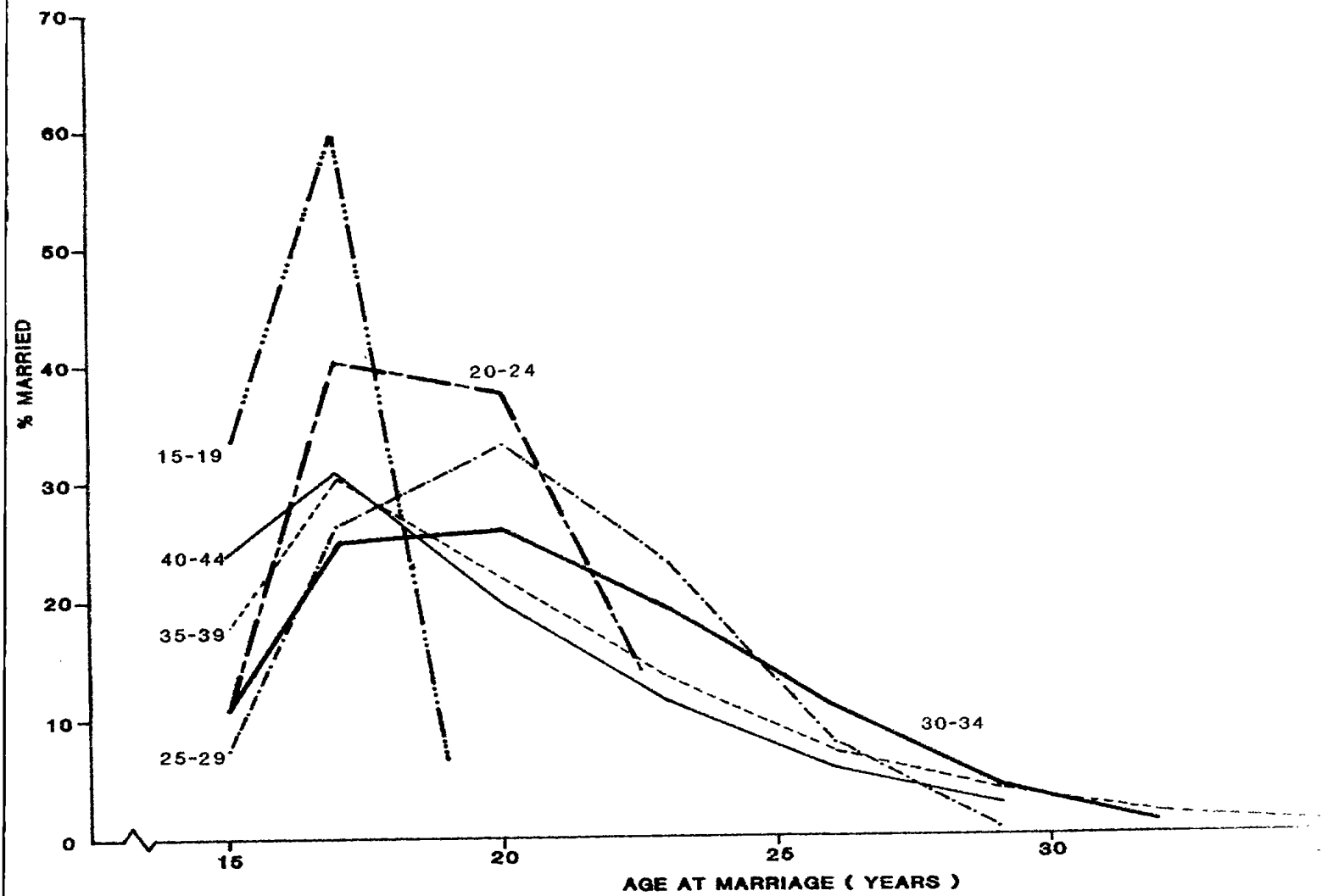
Marital life is very stable in the Island of Mauritius as shown by the proportion of women who married once only before reaching age 50 (Table 3.8). Overall, only 3.9% of women had more than one union before age 50. This proportion is low for women below the age of 30 and then starts increasing to reach a maximum of 7.5% for women aged 50-54 years. The index of marital instability which is defined below is shown in figure 3.4

- Index of marital instability = 100 - percentage married only once before age 50

Thus the nuptiality statistics clearly indicate that there is a fall in proportions married, the mean age at marriage has further gone down even though not as fast as in the previous decade and that there is not as many second marriages as experienced by older cohorts. All these changes work towards reduction of fertility. The next chapters analyse fertility in recent years and in the past.

FIG 3.4 - INDEX OF MARITAL INSTABILITY - ISLAND OF MAURITIUS
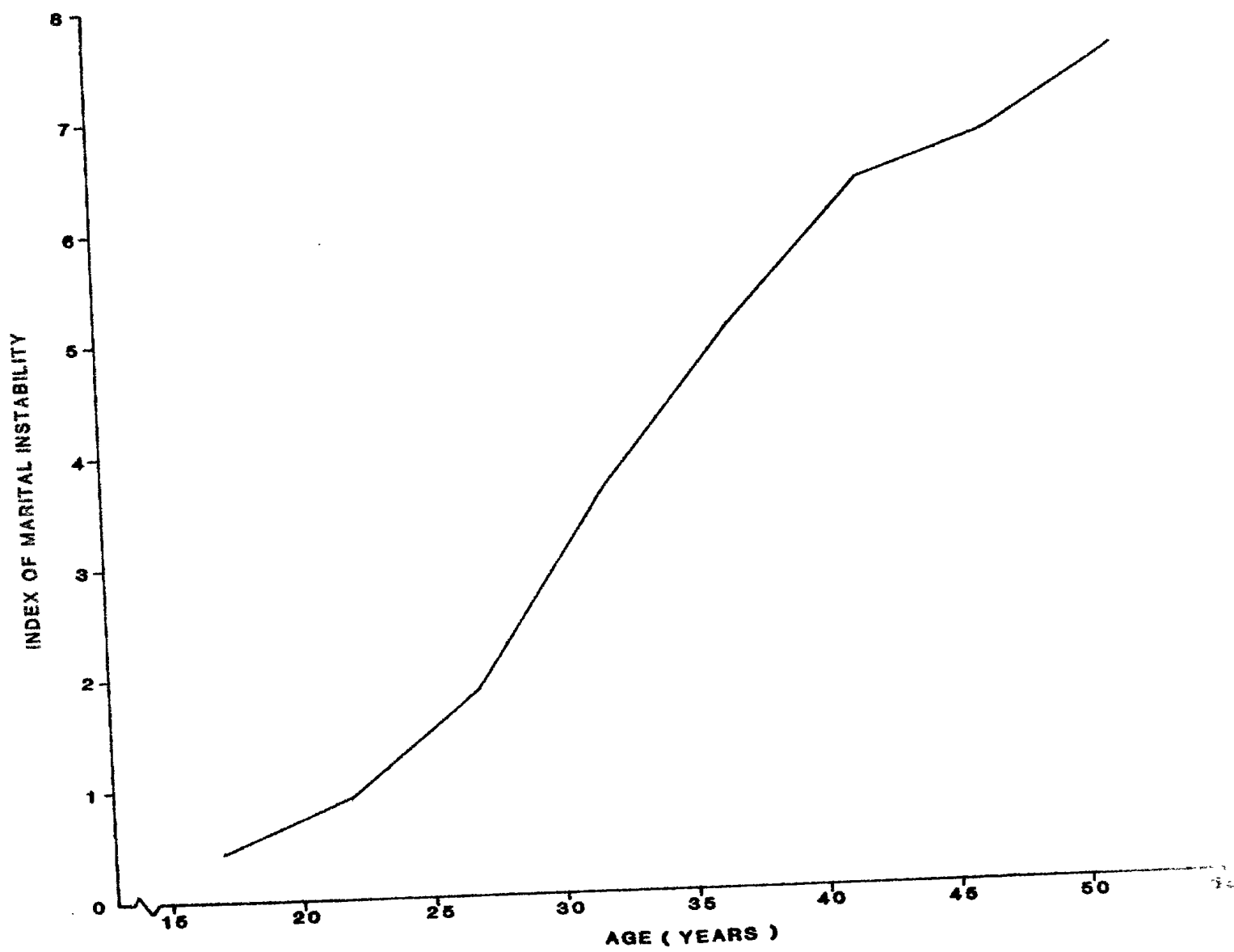
CHAPTER 4

CURRENT FERTILITY

4.1 Introduction

Since the total number of live births is a kind of cumulative fertility, it cannot represent the fertility level of a specified year. A vital task of the fertility questions in a census is to measure current and recent levels of fertility. It is clear that since 1979 there has been a second major decline in fertility but in order to assess the extent to which it will continue or to make policy decisions with regard, say, to future education provision, it is necessary first to assess whether the decline is uniform across age groups or whether it is, for example, occurring mostly at younger ages which might indicate postponement rather than reduction in childbearing. Secondly, one must examine whether fertility patterns are universal, cutting across either geographical boundaries or socio-economic groups.

4.2 Recent Fertility in the Island of Mauritius

Among the different age groups, 20-24 and 25-29 are the most fertile groups, while fertility for those over 40 is so low that these women no longer contribute much to the total fertility.

At the average fertility levels prevalent throughout the five years prior to the census, the cohort of 15 year old women would have expected to bear an average of 2.69 children each. This number was declining rapidly throughout the period and by the period 1st July, 1982 to 30th June, 1983, it had reached 2.34 children.

To project what might happen in the future, it is necessary to examine whether this decline has been uniform across age groups or has been concentrated at specific ages. Table 4.1 gives the age specific fertility rates for 1972 and 1982-83.

Table 4.1 - Age specific fertility rates , 1972 & 1982/83 - Island of Mauritius

Age-group (years)	A.S.F.R. (per thousand)			Percentage decline (1972-1983)
	1972 (vital registration)	1.7.82 - 30.6.83		
		Census	Vital registration	
15 - 19	50	43	45	10
20 - 24	188	134	138	27
25 - 29	191	129	133	30
30 - 34	130	83	85	35
35 - 39	88	43	44	50
40 - 44	32	13	14	44
45 - 49	4	2	2	50

Comparisons of the A.S.F.R. for the period 1.7.82 to 30.6.83 using census data and vital registration statistics show only marginal differences in the rates. Thus it is convenient to compare the 1972 rates, calculated from birth registration with similar figures of 1983 to study the trend in ASFR between those 2 periods. The closeness between the census and vital registration figures for 1982-83 gives confidence in the use of census fertility information for further analysis on social and economic characteristics, cumulative fertility and birth intervals.

The figures in the last column of Table 4.1 indicate that the decline in fertility between 1972 and 1983 among women aged 15-19 has not been very consequential. However, the decline becomes more pronounced for women of higher ages and is more or less uniform across age-groups for ages 20-34. The high decline for women aged 35 and over may not be of much value for analytical purposes as fertility is relatively infrequent in those age-groups, but indicates that family planning is more at older ages. In fact, the mean age of the fertility schedule $\bar{m}$ fell by about one year from 27.9 in 1972 to 27.0 in 1983.

The way in which the decline could have occurred is through a postponement of marriage. In this case one might expect that there would not be so pronounced a decline in marital fertility.

The age-specific marital rate which takes into account only the married women, is quite different from the age-specific fertility rates which consider all women. Table 4.2 contains the age-specific marital fertility rates for the two periods.

Table 4.2 - Age specific marital fertility rates, 1972 and 1982/83, Island of Mauritius

Age-group (years)	A.S.F.R. (per thousand)			Percentage change 1972-1983
	1972 (Vital registration)	1.7.82 - 30.6.83		
		Census	Vital registration	
15 - 19	379	394	409	+ 8
20 - 24	349	265	273	- 22
25 - 29	231	170	176	- 24
30 - 34	141	98	100	- 29
35 - 39	93	47	48	- 48
40 - 44	33	14	15	- 55
45 - 49	4	2	2	- 50

It is clear that there have been similar declines in the fertility of married women to those for all women, except for age-group 15-19. In fact, women of that particular age-group have even shown an increase of 8% over 1972 in their marital fertility rate reflecting the younger age profile of recent mothers.

Figures 4.1 and 4.2 illustrate the age-specific fertility rates for both periods for total women and married women respectively.

We note that between 1972 and 1983 there was a fall in fertility not only for all women but also for married women. The fall in total fertility for all women was about 33% whereas for married women it was only 17%. Thus the fertility decline was more or less equally shared by postponement of marriage and curtailment of births within marriage.

11.2% of married women had a birth in the 12 months preceding the census. About 74% of all these births are to women under 30 years while only 2% are accounted by women above 40 years of age. The median age of women having a birth in the period one year before census is 26.1 years.

30.8% of married women in the age-group 15-19 gave birth to a child in that period but the percentage decreased with age. Table 4.3 and figure 4.3 show the percentage of women in each age-group having a birth in last 12 months.

Table 4.3 - Percentage of married women by age group having a birth in the last 12 months - Island of Mauritius -1983 Census

Age-group (years)	No. of married women	No. of women having a birth in last 12 months	Percentage
15 - 54	173,963	19,534	11.2
15 - 19	6,125	1,889	30.8
20 - 24	26,137	6,640	25.4
25 - 29	33,431	5,847	17.5
30 - 34	32,435	3,480	10.7
35 - 39	24,825	1,280	5.2
40 - 44	18,678	315	1.7
45 - 49	17,865	65	0.4
50 - 54	14,467	18	0.1

FIG. 4.1 - AGE SPECIFIC FERTILITY RATES - ISLAND OF MAURITIUS (1972 AND 1982/83)
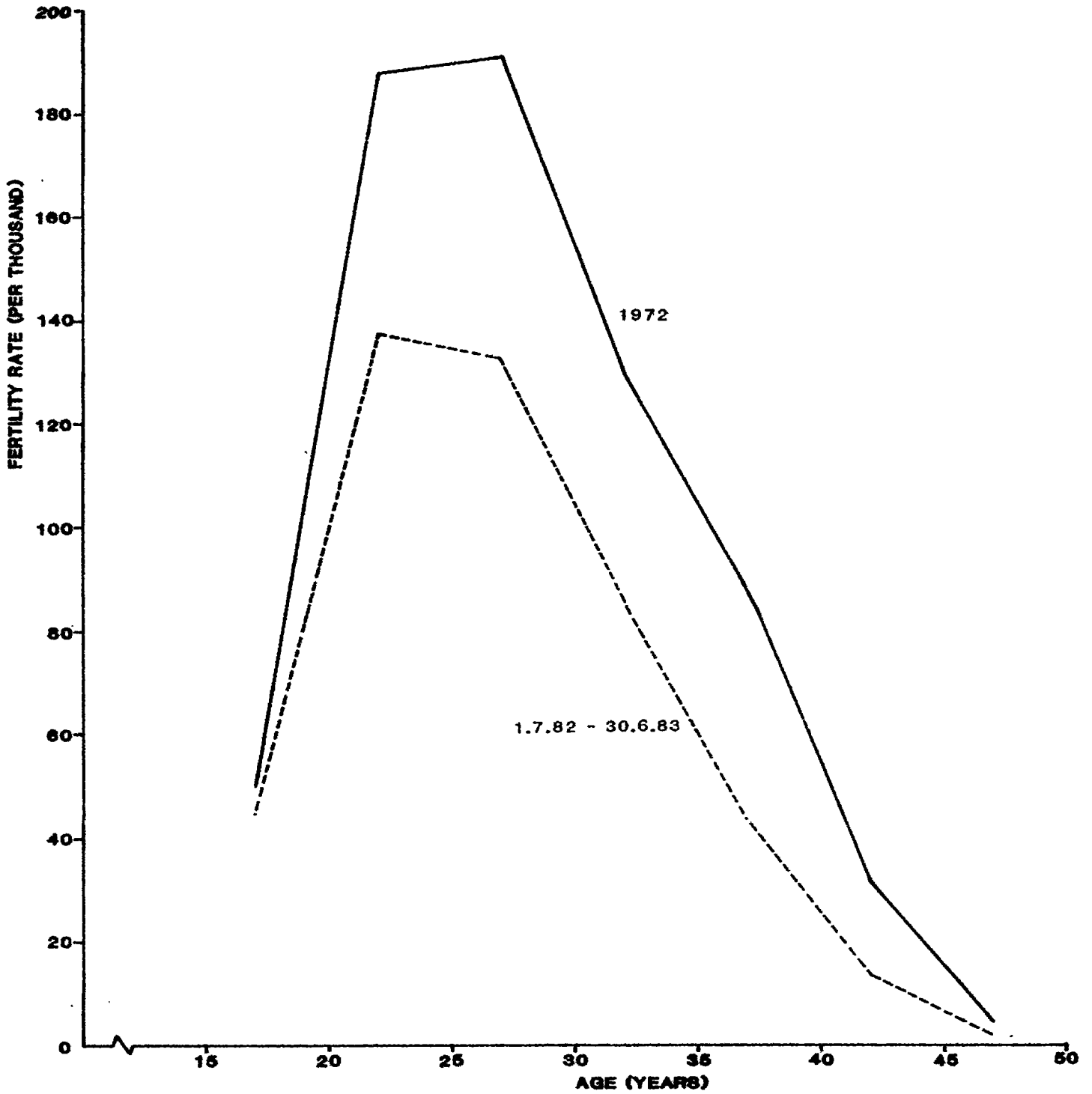
FIG. 4.2 - MARITAL FERTILITY RATES (PER THOUSAND) - ISLAND OF MAURITIUS

(1972 AND 1982/83)
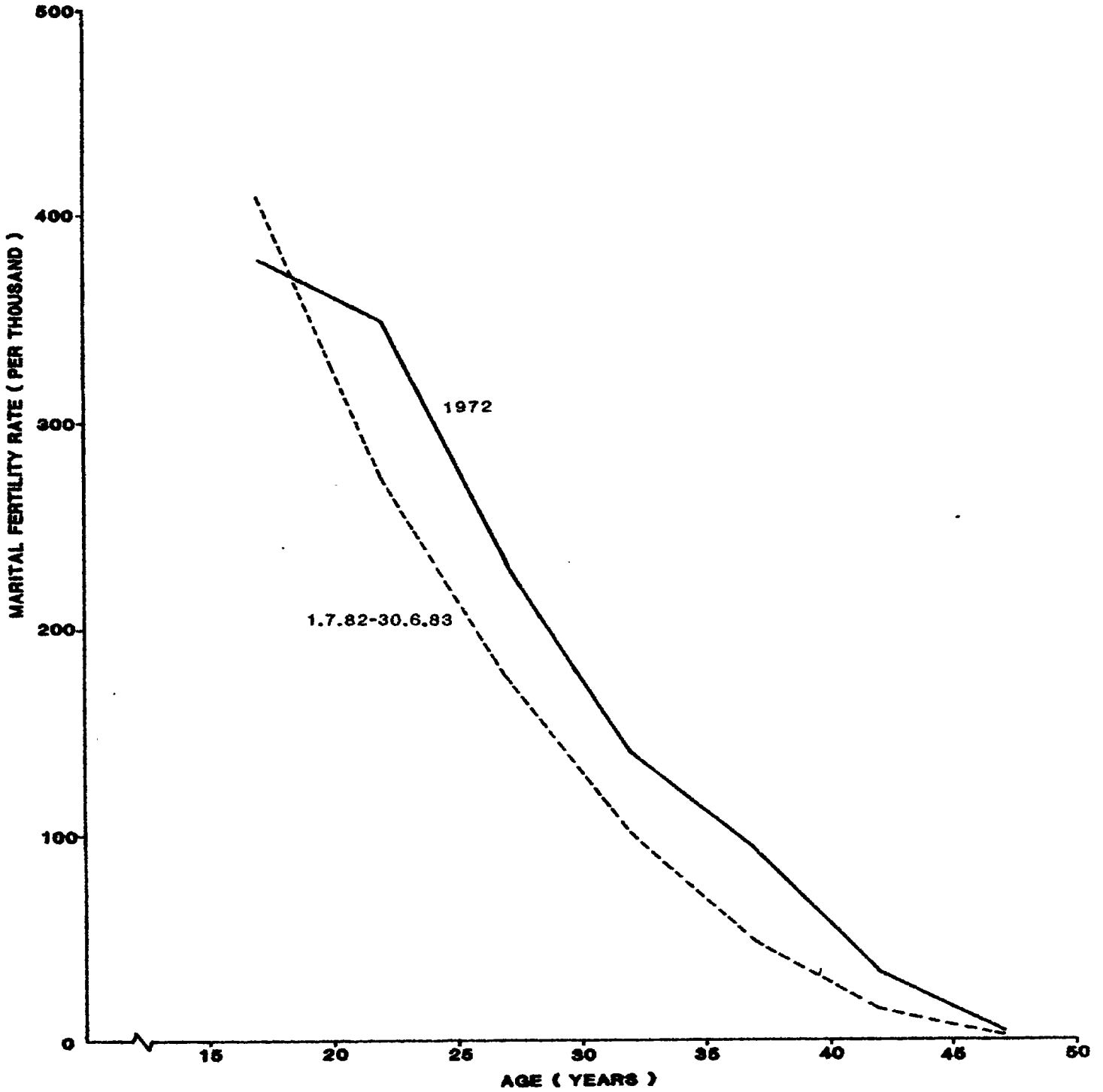
FIG. 4.3 – PERCENTAGE OF MARRIED WOMEN BY AGE HAVING A BIRTH
IN THE LAST 12 MONTHS PRECEDING THE CENSUS
– ISLAND OF MAURITIUS
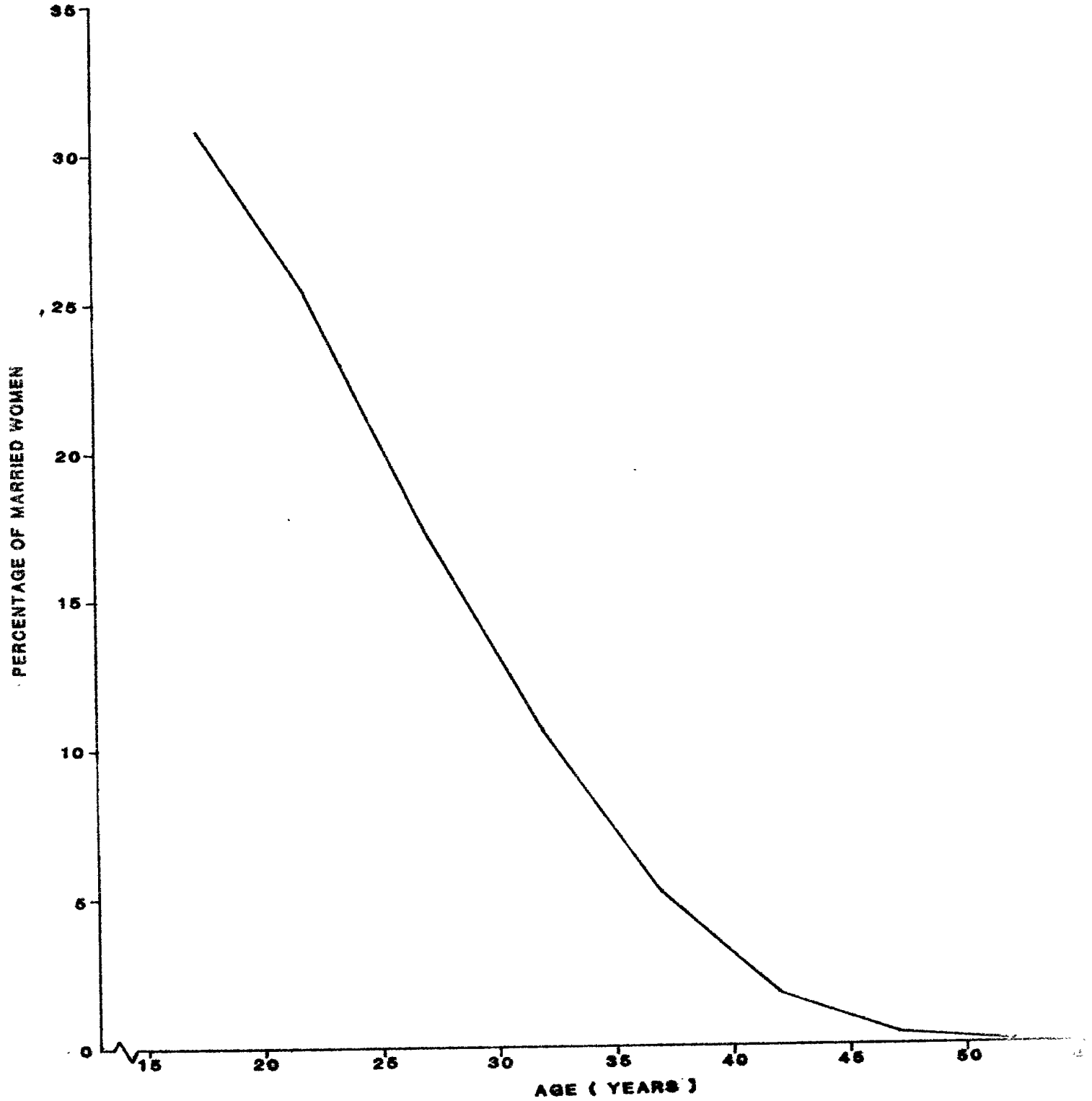
Correspondingly in 1972 about 17.3% of married women aged 15-54 had a birth in that year and 41.1% of married women aged 15-19 had a birth and as in 1983 the women under age 30 contributed 74% of all births.

The proportion of births to women aged 30 - 49 years has been almost constant between 1976 and 1980. However, it suddenly increased from 21.4% in 1980 to 23.3% in 1981, to reach a peak of 24.2% in 1985 (Table 4.4).

Table 4.4 - Proportion of births to women 30-49 years (1975-1985)

Year	Percentage
1975	23.6
1976	21.4
1977	21.7
1978	21.0
1979	21.3
1980	21.4
1981	23.3
1982	23.0
1983	24.1
1984	24.0
1985	24.2

Thus a quarter of births occur to women aged 30 and above and has more or less remained constant inspite of the fall in fertility.

However the high parity births have reduced. For instance at every age there has been a reduction in the proportion of higher order births. At age 25 - 29 there were only 19% of births which were of fourth or higher order in 1983 as compared with 47% in 1972. This is true for other ages too.

A comparison of the census results with births registered during the year 1982 shows that the two sets of data agree fairly well again confirming that census data can be used for further analysis.

Between 1972 and 1982, slight increases have been registered in the proportions of lower birth orders whereas the proportion of birth of the fourth order or higher has decreased considerably for all age-groups.

Table 4.5 - Percentage distribution of births by age-group of mother and birth order

Age-group of mother (years)	First			Second			Third			Fourth and over		
	Vital registration		Census	Vital registration		Census	Vital registration		Census	Vital registration		Census
	1972	1982	1.7.82 - 30.6.83	1972	1982	1.7.82 - 30.6.83	1972	1982	1.7.82 - 30.6.83	1972	1982	1.7.82 - 30.6.83
15 - 19	71	75	77	23	22	20	5	3	3	1	0	0
20 - 24	36	45	47	29	36	35	21	15	14	14	4	4
25 - 29	15	25	24	19	34	35	19	22	23	47	19	18
30 - 34	7	13	12	10	22	23	13	23	24	70	42	41
35 - 39	5	9	6	7	14	12	10	15	17	78	62	65
40 - 44	5	6	4	6	7	11	7	7	11	81	80	74
45 - 49	13	3	5	5	8	9	13	16	15	69	73	71

Birth Order

4.3 Fertility differentials

4.3.1 Regional differences

Table 4.6 clearly indicates that below age 25 the age-specific ferti-
lity rates are much lower in the urban districts, Port Louis and Plaines Wilhems,
than in rural regions. As age increases, the differences become much lower and
for age 30 - 34 the fertility rates in Port Louis and Plaines Wilhems are even
higher than those in most of the rural districts, showing that couples in the
urban region have a tendency to postpone births.

Women in Black River have by far the highest fertility rates.

Table 4.6 - Age specific fertility rate one year before census by geographical district

Age group (yrs)	Whole Island	Port Louis	Pample- mousses	Rivière du Rempart	Flacq	Grand Port	Savanne	Plaines Wilhems	Moka	Black River
15-19	43	28	42	41	44	38	37	23	38	55
20-24	134	111	151	146	151	143	121	110	147	155
25-29	129	124	143	130	136	137	123	130	134	169
30-34	83	99	99	83	93	89	89	90	87	125
35-39	43	45	54	45	44	52	53	44	50	65
40-44	13	14	17	13	16	17	18	12	19	38
45-49	2	5	5	3	2	3	3	3	5	5
50-54	1	1	1	0	0	2	2	1	3	0

4.3.2 Fertility and Education

Many studies have shown that there is a strong negative correlation
between education and fertility, i.e. fertility is lower among well-educated
women. The situation is not different in the Island of Mauritius.

Table 4.7 shows that the relationship between education and marital fertility rate is negative for those younger than age 30. However, after age 30 the situation is reversed, i.e. the higher the level of education, the higher the fertility rates. Thus, there is a marked tendency for higher educated women to postpone birth.

The Total Fertility Rate of women with only primary education is 17% higher than that of women with secondary education and 28% higher than women who have pursued tertiary education.

Table 4.7 - Age specific marital fertility rate[1]/ (1.7.82 - 30.6.83) by level of education - Island of Mauritius - 1983 Census

Age-group (years)	Level of education		
	Primary	Secondary	Tertiary
15 - 19	68	23	21
20 - 24	156	108	70
25 - 29	128	136	122
30 - 34	81	91	103
35 - 39	41	44	48
40 - 44	13	12	18
45 - 49	2	2	-
T.F.R.	2.44	2.08	1.91

The relation between fertility and education is also noted from birth order statistics (see Table 4.8). Education definitely plays an important role in controlling fertility. While 90% of children born, one year before census, to women aged 20 - 24 year having followed tertiary education were first births, only 29% of those born to women of the same age group but with no education were of the first order. Births of the fourth or higher order are not common among women with secondary or tertiary education. However, such is not the case for women aged 30 years and over and who have neither been to school or followed only the primary level of education.

1/ per thousand women

Table 4.8 - Percentage distribution of live births, one year before the census, by age of mother, educational level and birth order

- 1983 Census

Age of mother (years)	No education				Primary education				Secondary education				Tertiary education			
	First order	Second order	Third order	Fourth order & over	First order	Second order	Third order	Fourth order & over	First order	Second order	Third order	Fourth order & over	First order	Second order	Third order	Fourth order & over
15 - 19	71	25	4	-	75	22	3	0	85	15	0	-	-	-	-	-
20 - 24	29	36	24	11	39	39	17	5	62	30	7	1	90	10	-	-
25 - 29	12	21	28	39	17	33	28	22	37	42	15	6	65	26	8	1
30 - 34	6	13	16	65	10	20	24	46	18	37	29	16	29	54	15	2
35 - 39	4	7	11	78	5	10	17	68	12	22	29	37	12	42	27	19
40 - 44	2	6	6	86	4	11	11	73	12	14	31	43	20	40	40	-
45 - 49	0	14	19	67	5	8	11	76	17	-	33	50	-	-	-	-
50 - 54	9	0	9	82	14	-	29	57	-	-	-	-	-	-	-	-

4.3.3 Fertility and Activity Status

Among married women, housewives have the highest fertility rates and unemployed women looking for work the lowest. At younger ages, the differences in the fertility rates between housewives and women in other activity status groups are very much higher. However, the rates for the various groups tend to become more uniform for older women. The Total Fertility Rate of housewives is almost three times that of unemployed women.

Table 4.9 - Mean number of live births per woman by age-group and activity status, one year before the census

Age-group (years)	Activity Status		
	Employed	Housewife	Looking for work
15 - 19	0.01	0.07	0.01
20 - 24	0.06	0.19	0.03
25 - 29	0.10	0.16	0.05
30 - 34	0.07	0.10	0.05
35 - 39	0.04	0.05	0.04
40 - 44	0.01	0.02	0.02
45 - 49	0.00	0.00	0.01
50 - 54	0.00	0.00	0.00
T.F.R.	1.45	2.95	1.05

4.4 Conclusion

Thus we note that fertility has fallen even among married women. Regional and socio economic differentials also are noted. Since the analysis so far has been based on births of one year, fluctuations may mar the picture. We proceed to have a look at cumulated fertility.

FIG. 4.4 – AGE SPECIFIC FERTILITY RATES BY TYPE OF ACTIVITY (1.7.82–30.6.83)
ISLAND OF MAURITIUS
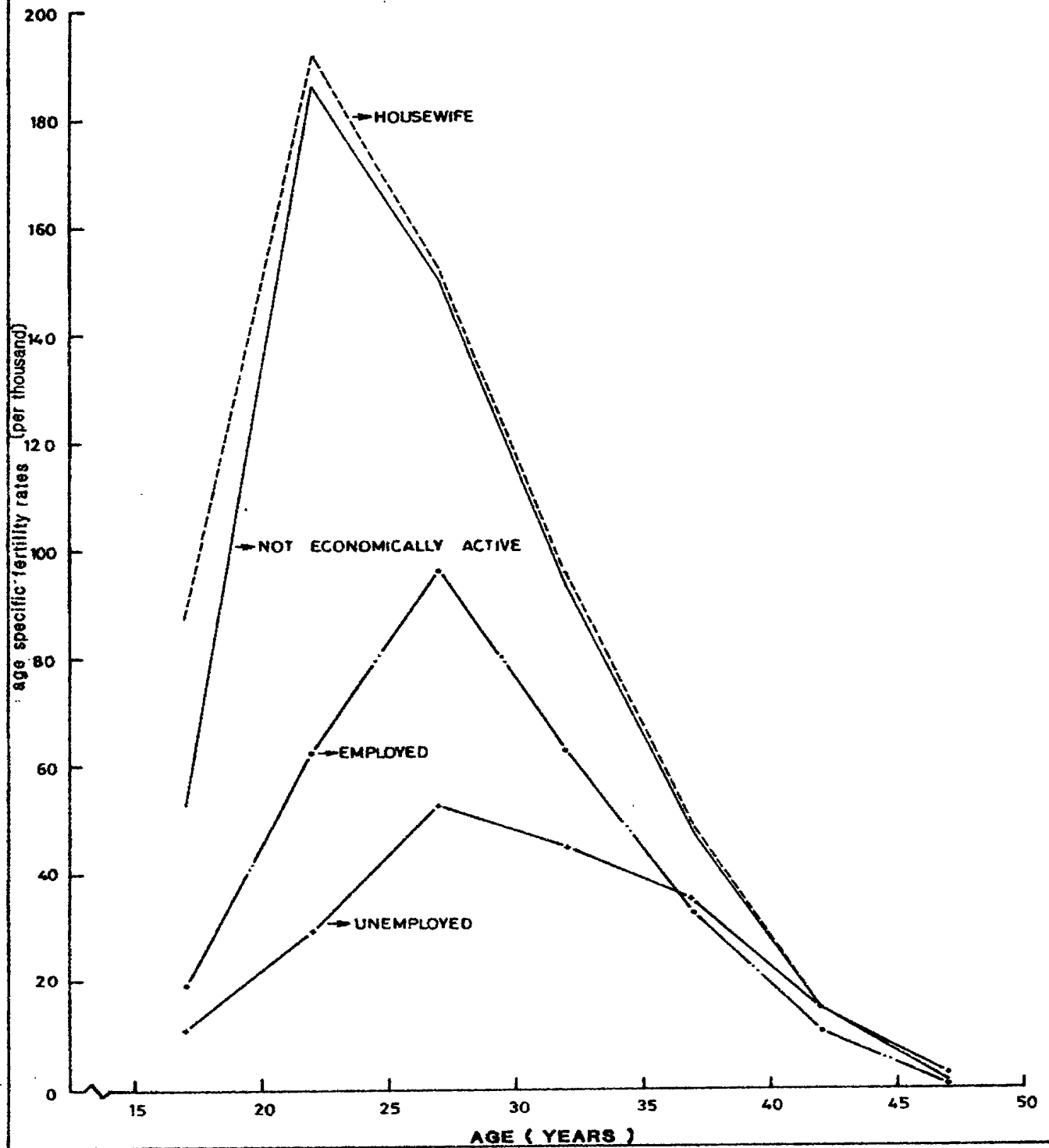
CHAPTER 5

CUMULATED FERTILITY

5.1 Geographical and Socio-economic differentials in completed family size

5.1.1 Introduction

The influence of social and economic characteristics on the number of children couples have is an important area of research because of its implications for government policies and programmes. Differences in fertility among socio economic subgroups have been observed in many countries, even those with high, stable fertility.

The average completed family sizes for each age group by geographical district, education, activity and occupation are contained in Tables 5.1 to 5.4. Before discussing these differentials it is worth commenting again on the data quality with particular reference to the topic being discussed.

It has been observed in many developing societies that older women tend to under-report their number of children. This is because they may forget infants who died or mistakenly disregard those who have left home. The usual way in which this phenomenon is manifested is through women at the oldest ages in a study having lower completed family sizes than their younger contemporaries. This can only be true in societies where there has been no large scale reduction in fertility.

In Mauritius, this comparison is only valid among the two oldest cohorts as below these, the decline in fertility started. Comparing these cohorts across geographical districts, it can be seen that in every region except Plaines Wilhems and Moka there is evidence of under-reporting, the levels being particularly high in Black River which reports the lowest completed family size among women aged 50-54 but the highest in a number of other age-groups.

However, an important light is shed on the identity of those under-reporting by considering education. The only group amongst whom completed family size is lower among the 50-54 year olds than the 45-49 year olds is that of "education not stated". As these will primarily be women with little or no education, it suggests that there is under-reporting rather than a real fertility differential between women aged 45-49 and their peers aged 50-54. The usual way to adjust data such as these is through the use of Brass P/F ratio technique. However this is not proposed here as the crucial assumption of the P/F ratio is that fertility has not declined amongst the cohorts under study. This assumption is clearly not tenable among these data.

Table 5.1 - Average no. of children by age-group of mother and geographical district

Age-group (years)	Port Louis	Pample-mousses	Rivière du Rempart	Flacq	Grand Port	Savanne	Plaines Wilhems	Moka	Black River	Whole Island
15 - 19	0.06	0.10	0.10	0.11	0.09	0.09	0.05	0.09	0.12	0.08
20 - 24	0.54	0.60	0.76	0.84	0.73	0.69	0.52	0.77	0.87	0.66
25 - 29	1.35	1.69	1.72	1.78	1.64	1.59	1.29	1.68	1.87	1.52
30 - 34	2.16	2.56	2.63	2.79	2.54	2.47	2.05	2.44	2.77	2.36
35 - 39	2.99	3.68	3.72	4.00	3.73	3.52	2.80	3.38	3.87	3.30
40 - 44	3.73	4.55	4.65	4.91	4.52	4.40	3.47	4.47	4.35	4.06
45 - 49	4.36	5.21	5.31	5.52	4.95	5.20	4.12	4.69	4.90	4.66
50 - 54	4.50	5.11	5.19	5.35	4.75	5.01	4.41	5.04	4.54	4.73
Standardised mean parity	1.79	2.18	2.21	2.33	2.12	2.09	1.69	2.08	2.21	1.96

FIG. 5.1 – MEAN NUMBER OF LIVE BIRTHS BY AGE GROUP AND GEOGRAPHICAL DISTRICT
ISLAND OF MAURITIUS
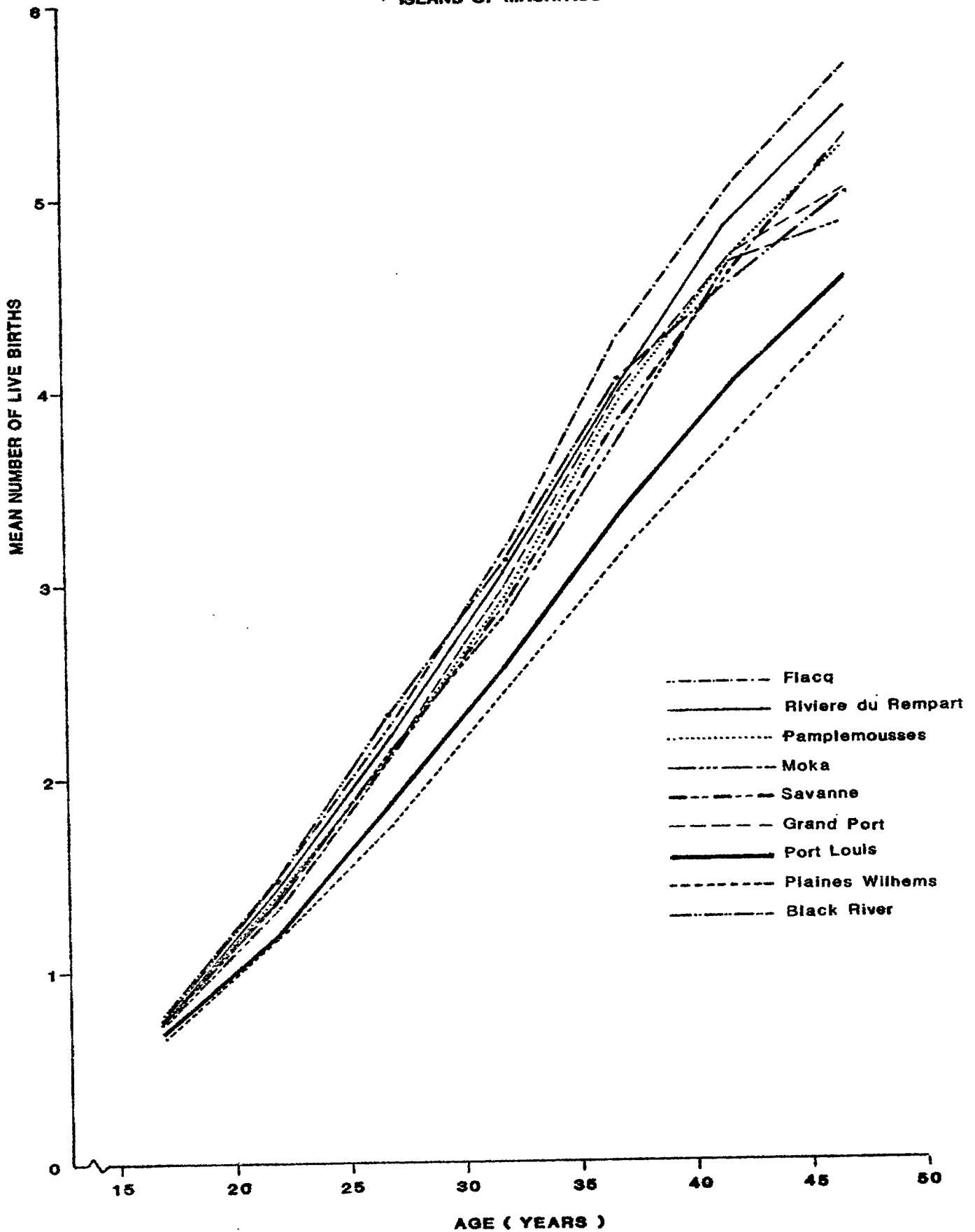
Instead the data are presented without adjustment and it will be necessary to take care when interpreting differentials among women aged 50-54 as those differentials observed are likely to be lower than the true value. This is because under-reporting is also likely to be most prevalent among high fertility women.

5.1.2 Place of residence

Women in the urban districts, viz Port Louis and Plaines Wilhems, have the lowest mean parity. The highest parity women are those from Flacq with an average of 2.33 births, which is about 38% higher than the average for Plaines Wilhems. The mean parity for women of the other rural districts are more or less the same. The rural-urban differential would have been higher if the errors of ommission at older ages had not occurred.

5.1.3 Women's Education

In general, the average number of children per woman declines as the woman's level of education increases.

Table 5.2 - Average number of children by age-group of mother and level of education - Island of Mauritius

Age-group (years)	Level of education			
	Pre-primary & No education	Primary	Secondary	Tertiary
15 - 54	3.88	2.18	0.97	0.77
15 - 19	0.22	0.14	0.07	0.00
20 - 24	1.13	0.90	0.40	0.10
25 - 34	2.49	2.11	1.41	0.68
35 - 44	4.33	3.84	2.54	1.31
45 - 54	5.11	4.71	3.08	1.43
Standardised mean parity	2.43	2.12	1.36	0.64

FIG. 5.2 – MEAN NUMBER OF LIVE BIRTHS BY AGE-GROUP AND LEVEL OF EDUCATION
ISLAND OF MAURITIUS
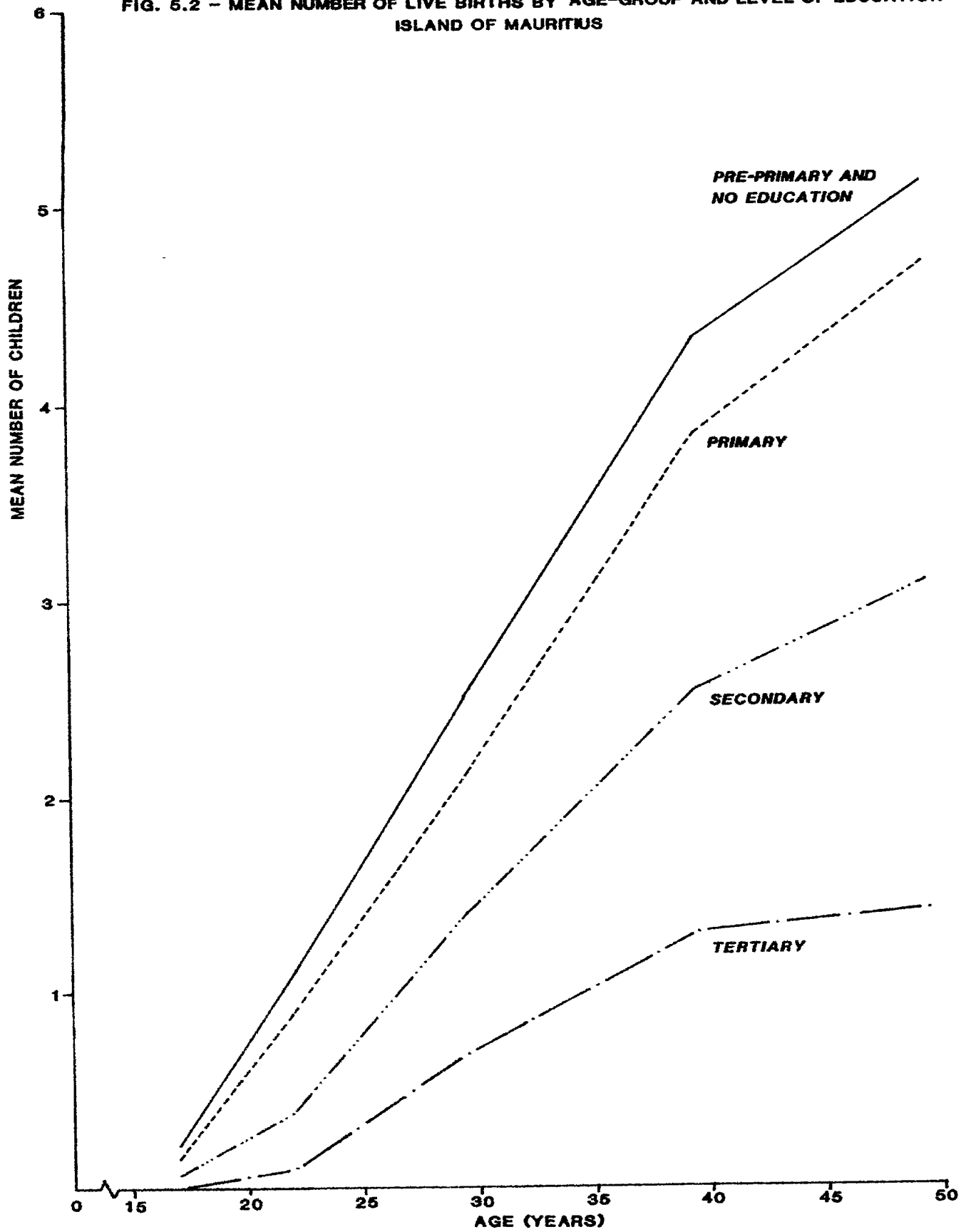
Table 5.3 — Percentage distribution of live births by age and level of education of mother, and birth order

Age of mother (years)	No education				Primary education				Secondary education				Tertiary education			
	First order	Second order	Third order	Fourth order & over	First order	Second order	Third order	Fourth order & over	First order	Second order	Third order	Fourth order & over	First order	Second order	Third order	Fourth order & over
15 - 19	61	30	7	2	67	26	6	1	78	19	3	0	78	16	3	4
20 - 24	21	29	27	23	32	32	22	14	54	31	11	4	72	22	4	2
25 - 29	7	13	19	61	13	20	22	44	33	35	18	14	52	36	9	3
30 - 34	4	6	10	80	7	11	14	68	16	29	25	30	26	39	24	11
35 - 39	2	4	6	88	5	7	10	78	12	20	23	45	15	32	25	28
40 - 44	2	3	5	90	5	6	7	82	16	14	14	56	11	27	27	35
45 - 49	5	5	9	81	8	7	8	77	29	23	10	38	-	-	-	-
50 - 54	6	3	13	78	6	0	13	81	50	33	0	17	-	-	-	-

On the average, women with very little or no education have nearly four times as many children as women who have attended post-secondary education. The differences in fertility according to level of education are much smaller among older cohorts than among younger women. The differentials would have been larger had there been no errors of omission at older ages especially among the 'no education' group.

The educational differentials are mostly brought about by the variations of parities among the groups. For example, we can see that women with no education have relatively higher proportion of higher parity women at every age. Tertiary educated women have the lowest proportion of high parities. Even at age 40 - 44 only 35% are fourth or higher parity whereas among the 'no education' group it is 90%, among primary it is 82% and among secondary it is 56%.

5.1.4 Economic activity

Research in developing societies suggests that the relationship between work and fertility is complex. Participation in economic activities is considered to have negative effect on fertility because those who do so will have less time to raise children.

From Table 5.4, it is noticed that housewives have the highest mean cumulative fertility and unemployed women looking for work the lowest. The former group has an average standardised parity of 2.22 which is 54% higher than the value for unemployed women and 39% higher than for employed women. At every age the unemployed women have lower fertility.

Table 5.4 - Average number of children by age-group of mother and type of activity - Island of Mauritius

| Age-group | Type of activity | | |
(years)	Employed	Looking for work	Housewife
15 - 19	0.04	0.02	0.16
20 - 24	0.28	0.15	0.97
25 - 29	0.90	0.73	1.88
30 - 34	1.84	1.67	2.67
35 - 39	2.96	2.80	3.55
40 - 44	3.71	3.34	4.35
45 - 49	4.34	4.03	4.92
50 - 54	4.42	4.16	4.98
Standardised mean parity	1.60	1.44	2.22

FIG. 5.3 — MEAN NUMBER OF LIVE BIRTHS BY AGE-GROUP OF MOTHER AND TYPE OF ACTIVITY — ISLAND OF MAURITIUS
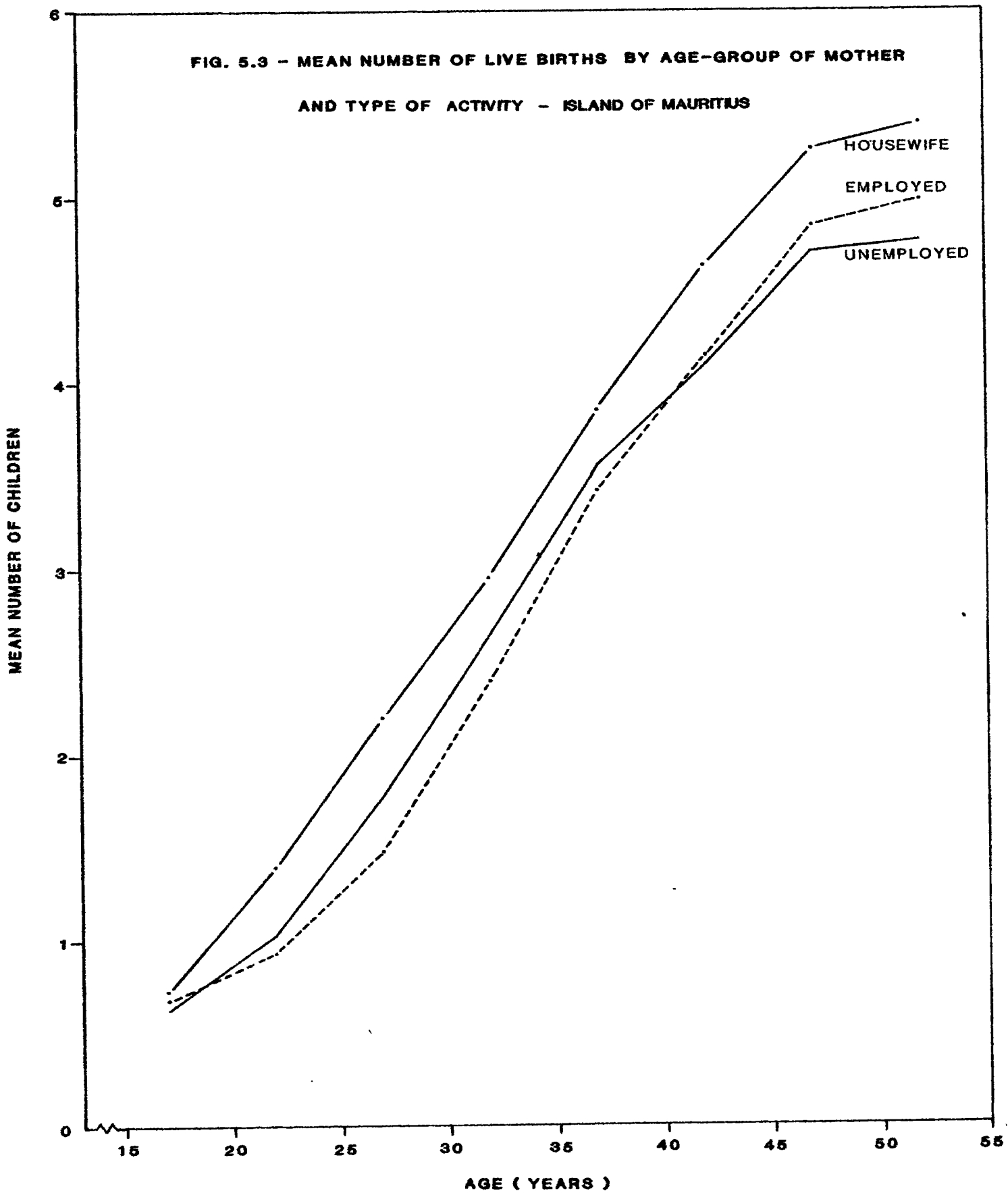
5.1.5 Fertility and duration since first marriage

Apart from the woman's current age, a basic demographic control used in presentation and analysis of fertility is the duration since her first marriage. This duration provides, in most circumstances, a more precise indication of the length of exposure to childbearing than does age. Women marrying about the same time also tend to share certain values and experiences at similar points in their family building process.

Table 5.5 shows the average number of children ever born by marriage duration together with the standardised mean parity.

Table 5.5 - Average number of children by age of mother and marriage duration and standardised mean parity by duration, Island of Mauritius

Age-group (years)	Duration since first marriage (months)						
	Total	Under 7	7-under 18	18-under 36	36-under 72	72-under 120	120 +
15 - 54	3.11	0.44	0.56	0.98	1.57	2.34	4.41
15 - 19	0.72	0.03	0.33	0.83	1.38	2.12	1.97
20 - 24	1.32	0.06	0.33	0.88	1.54	2.33	2.61
25 - 29	2.03	0.34	0.43	0.88	1.49	2.35	3.21
30 - 34	2.82	0.81	1.00	1.07	1.53	2.26	3.48
35 - 39	3.70	1.41	1.37	1.66	1.94	2.35	4.06
40 - 44	4.46	2.58	2.20	2.07	2.22	2.49	4.72
45 - 49	5.10	2.96	2.95	3.11	2.90	2.68	5.33
50 - 54	5.24	4.15	2.86	2.77	3.16	3.01	5.51
Standardised mean parity		0.62	0.73	1.05	1.62	2.39	4.22

Within each age group, the longer the duration of marriage the higher the average number of children. A woman aged 15-19 married for 6 years or more is noted to have about 2 children whereas for those with duration of 3 to 6 years it is only 1.4. At older ages duration of marriage is more crucial in determination of mean number of children.

CHAPTER 6

Analysis of Birth Intervals

6.1 Introduction

A woman's reproductive life can be expressed in terms of a sequence of events and changes in the age at which these events take place will have an important impact on fertility levels in a country. The events include the on-set of the biological capacity to reproduce, the initiation of a stable sexual union, ages at motherhood and the termination of reproduction either through menopause, sterilisation or death. In this chapter the focus will be on the length of birth intervals and in the influence of socio economic factors on birth interval length.

In assessing the impact of changes in birth interval length on ferti-lity levels it is important to consider also age at starting and stopping childbearing. This is because in societies such as Mauritius with a rapidly increasing female labour force there can actually be a decline in birth inter-val length as women delay the onset of childbearing, then have say two births very quickly and then stop. This would minimise the time the woman spends out of the labour force and the net result would be a decline in both birth inter-val length and parity progression ratios.

Therefore the analysis in this chapter will focus on two main areas:

1. to investigate change in birth interval length for different socio economic groups

2. to examine whether there has been a sharp decline in family size at particular parities.

6.2 Birth Interval Analysis

A few summary measures are available which convey most of the infor-mation contained in the birth history and describe meaningfully the speed and timing of fertility.

The average length of birth interval has not been used as a summary measure in the present exercise since it does not take into account those women who do not "close" the birth interval satisfactorily and also since, as with all means, it is biased by extremely skewed distributions. Instead the following measures are used:

(a) Quintum

Rodriguez and Hobcraft[1] chose the proportion of women having a birth within 60 months as the most convenient measure of the

1/ W.F.S.: Comparative Studies No. 28, March 1984

quantum of fertility. As this measure is based on five years'
experience, they referred to it as the quintum of fertility.
The rationale is that it is rare for women to have birth inter-
vals more than 60 months and so the proportions without a birth
after 60 months can be thought of as an approximation to those
who have completed their family either through choice or
infecundity.

Table 6.1 shows the values of the quintum, or proportion having
a birth within five years of the previous event, according to
age of mother, age at marriage, education level and occupation
group. These are also shown graphically in Figure 6.1. The
values show considerable variability according to age of mother,
the differences becoming more marked at higher birth orders.
In general, younger mothers have lower quintums than older ones.
While those women at young ages will be very likely to have
more children, the older women may be considered to have essen-
tially finished their families. It is notable that the propor-
tions having a third birth or above is much lower among those
women aged 35-39 compared with those aged 45 and above at the
census.

Women who married at an earlier age moved faster from one parity
to the other. For instance, 75% of women who married before the
age of 16 have their fourth birth within five years of the third
birth while the corresponding proportion for those who married
between 31-33 years is only 32%.

To consider education, women with tertiary education have much
smaller families than their contemporaries with less education
while among the group with no education the proportion of women
with a birth within 60 months is high at all parities.

(b) Proportion with a birth within 30 months

Another measure used for analysis of birth intervals is the pro-
portion of women having a birth within 30 months of the previous
event. It gives a good measure of those who have made a serious
attempt to delay.

Table 6.2 gives the proportion of women with a birth within 30
months according to age of mother and educational level. It
does not seem that there is much difference in the proportion
among various age cohorts for the first and second birth inter-
val. However, for higher births the proportions are lower for
young women.

To consider education it is notable that women with secondary
or tertiary education are much less likely to have a birth
within thirty months than those with less education. This is
a clear indication that there has been increased spacing among
these groups.

Table 6.1 - Interval Analysis : Quintums

	Birth interval					
	1	2	3	4	5	6
Age of mother						
20 - 24	78	48	28	-	-	-
25 - 29	88	68	45	34	28	25
30 - 34	90	78	58	48	42	36
35 - 39	90	82	70	61	53	49
40 - 44	88	85	78	72	66	59
45 - 49	85	84	81	78	74	70
50 - 54	82	82	81	78	76	73
Age at marriage						
/ 16	86	80	79	75	70	66
16 - 18	96	79	73	68	63	61
19 - 21	97	69	56	57	57	55
22 - 24	56	61	44	44	47	49
25 - 27	97	57	40	41	12	-
28 - 30	96	57	38	36	-	-
31 - 33	96	53	32	32	-	-
34 +	94	41	26	27	-	-
Education						
None	84	81	78	74	70	65
Primary	88	76	64	58	56	55
Secondary	81	60	39	36	39	41
Tertiary	77	59	29	26	32	32

Note: (-) denotes not applicable

FIG.6.1—ANALYSIS OF BIRTH INTERVALS:QUINTUM — ISLAND OF MAURITIUS

AGE OF MOTHER
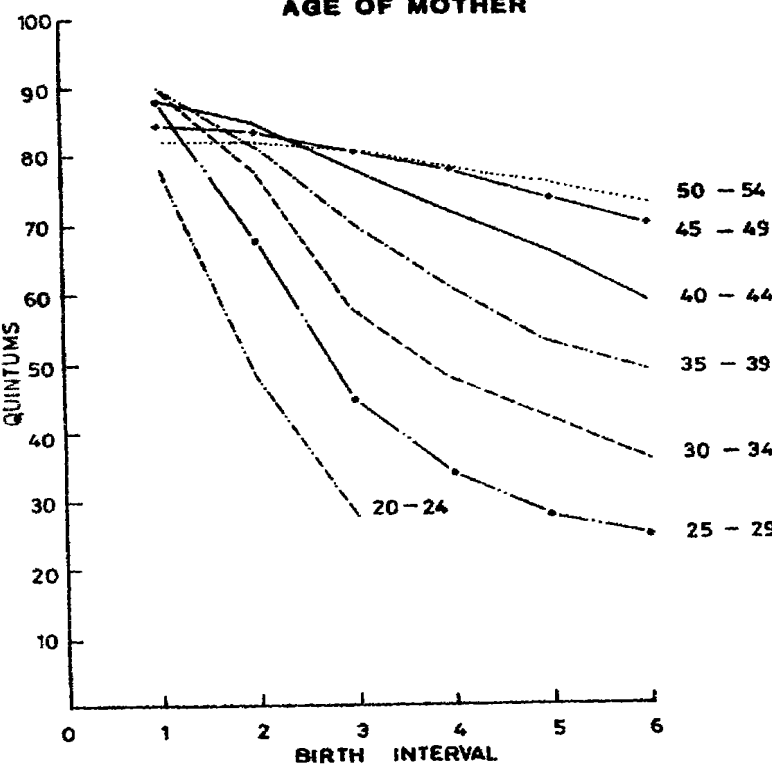
AGE AT MARRIAGE
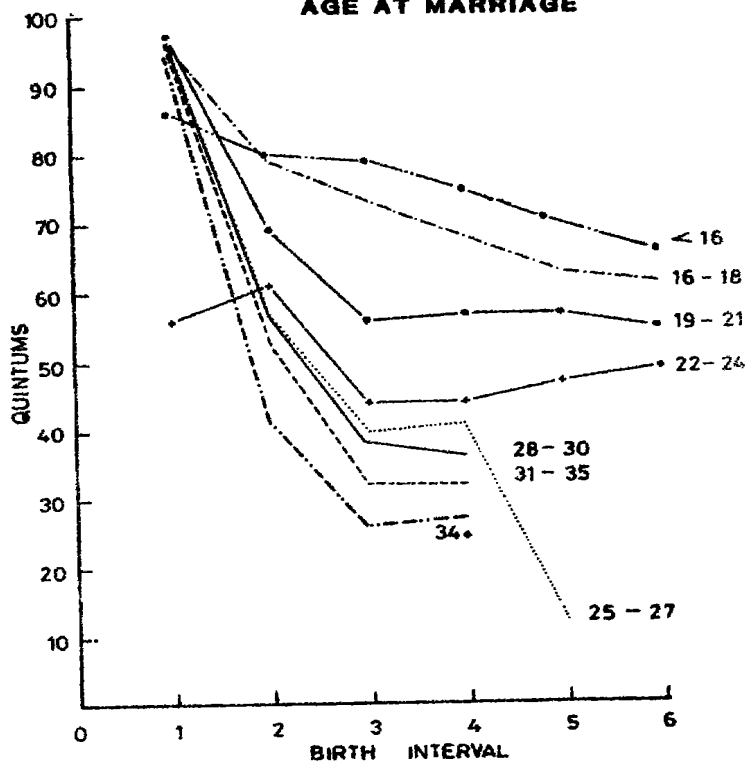
EDUCATION
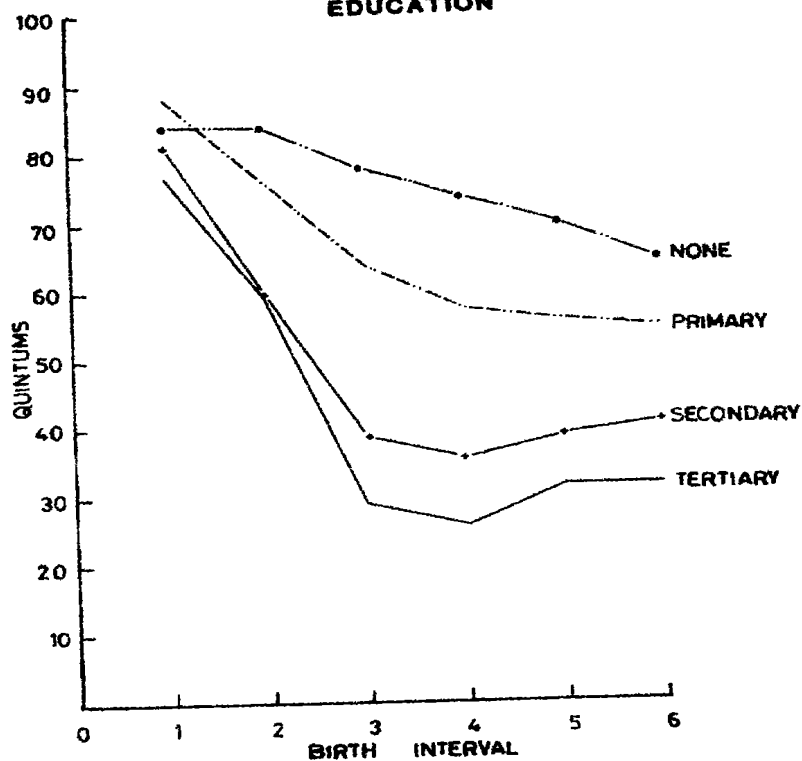
Table 6.2 - Birth Interval Analysis : Proportion with a birth within
30 months

	Birth Interval					
	1	2	3	4	5	6
Age of mother						
20 - 24	72	35	21	–	–	–
25 - 29	79	45	29	22	19	17
30 - 34	79	52	36	29	26	23
35 - 39	77	59	48	39	35	30
40 - 44	74	62	55	49	44	38
45 - 49	71	60	56	53	49	46
50 - 54	67	58	55	52	50	47
Education						
None	68	56	52	47	44	41
Primary	78	54	44	39	38	37
Secondary	73	39	25	23	25	26
Tertiary	63	35	17	19	18	23

(c) Trimean

Another summary measure is the trimean which is a non-parametric
average measure and is calculated as follows:

$$\text{Trimean} = 1/3 \ (P_{25} + P_{50} + P_{75})$$

where P_{25} is the 25th centile

P_{50} is the median

P_{75} is the 75th centile

The trimeans for the first six birth intervals according to age
of mother, age at marriage, level of education and occupation
are shown in Table 6.3.

The trimeans for the first six birth intervals according to age
of mother, age at marriage, level of education and occupation
are shown in Table 6.3.

Table 6.3 - Birth Interval Analysis : Trimean

	Birth Interval					
	1	2	3	4	5	6
Age of mother						
20 - 24	14.3	23.4	23.3	-	-	-
25 - 29	15.4	26.6	27.8	27.2	25.2	25.3
30 - 34	16.3	27.6	30.6	31.2	30.0	29.5
35 - 39	17.2	26.2	28.8	30.9	32.2	32.0
40 - 44	17.1	25.7	27.0	28.0	29.0	30.0
45 - 49	19.6	26.7	27.4	27.8	28.0	28.4
50 - 54	21.1	27.4	28.0	25.8	28.3	28.2
Age at marriage						
$\angle$ 16	24.2	27.7	28.3	28.8	29.3	29.7
16 - 18	16.0	25.3	27.7	28.8	28.9	29.1
19 - 21	14.9	26.2	28.4	28.9	29.1	28.9
22 - 24	15.3	26.8	28.9	29.0	28.6	28.9
25 - 27	15.4	27.4	28.1	29.1	29.0	28.8
28 - 30	15.4	27.0	27.7	27.4	-	-
31 - 33	15.8	26.4	27.6	30.7	-	-
34 +	17.2	25.5	26.9	-	-	-
Level of education						
None	20.7	27.8	28.6	29.4	29.6	29.8
Primary	15.7	25.2	27.2	28.2	28.4	28.7
Secondary	15.3	27.7	31.2	31.4	31.1	30.0
Tertiary	18.1	30.4	34.2	31.4	30.8	25.1

For the first birth interval, these values mainly reflect
variations in the relationship between the timing of the
first union to the timing of first birth. The trimean is
higher for older cohorts which may partly be due to some date
misreporting from the older women. This suspicion is also
reflected in the high values of trimean for women with no
education since these are more likely to be older women. In
fact a trimean of 20.7 months from first union to first birth
is rather high for these women as compared to 18.1 months for
women with tertiary education.

6.3 Open Birth Interval

The open birth interval is the length of time from the last birth to
the census. Among older cohorts this is particularly useful as an indicator
of the age at stopping fertility. Tables 6.4 and 6.5 contain estimates of the
age at last birth (ALB) for women aged 35 and over by parity and education
(Table 6.4) or activity (Table 6.5). The following points emerge from these
tables:

1. At higher parities, 4 and over, there is little difference in
   ALB between women with different educational characteristics
   or of different activity status. However, there is a clear
   decline in ALB among the younger cohorts. For example, for
   all women those aged 50-54 had completed their childbearing
   at age 36 on average whereas those aged 35-39 had their last
   child at around age 31. It is necessary to remember that
   those aged 35-39 could continue to have children but as their
   average OBI is greater than 60 months this seems unlikely.

2. At lower parities, particularly parity 1 there are differences
   in ALB by education with those women with little or no edu-
   cation completing their families earlier. The interpretation
   of this is that these women will probably have been unable to
   have any more children either through infecundity or widowhood
   as it will be rare for women such as these to have only one
   child by choice.

3. It is interesting that there are so few differences by activity
   status as one might have expected those in the labour force to
   have stopped childbearing earlier than those who were house-
   wives. The interpretation could be that many of those working
   in the labour force have returned following the completion of
   their family, often into the jobs in the textile industry which
   have been created only relatively recently.

Evidence on spacing can be obtained from the trimeans for the open birth interval (Table 6.6).

Table 6.4 - Estimates of age at last birth for older women by education and parity

Age at Census (years)	Level of Education				
	None/ Not Stated	Primary	Secondary	Tertiary	All
Parity 1					
35 - 39	25.3	27.3	30.3	31.7	27.3
40 - 44	25.0	27.7	31.3	32.6	27.3
45 - 49	26.6	28.7	30.3	31.5	28.3
50 - 54	27.2	28.7	29.0	30.4	28.4
Parity 2					
35 - 39	27.5	27.9	29.5	30.3	28.5
40 - 44	28.5	28.9	30.3	31.9	29.3
45 - 49	28.8	29.7	31.3	32.2	29.7
50 - 54	29.6	30.8	31.6	30.1	30.4
Parity 3					
35 - 39	27.6	27.8	29.7	31.4	29.1
40 - 44	29.2	30.3	31.2	33.0	29.8
45 - 49	31.0	31.4	31.6	32.1	31.0
50 - 54	32.3	31.6	32.6	33.4	32.0
Parity 4 +					
35 - 39	31.0	30.8	31.7	33.7	30.9
40 - 44	32.9	32.1	32.8	33.8	32.4
45 - 49	34.8	33.5	33.6	33.7	34.2
50 - 54	36.6	35.6	34.3	32.9	36.0

Note 1. These data are calculated by subtracting the mean OBI from the mid point of each age group. Hence there are two assumptions:

(a) uniform distribution by age within each age group

(b) uniform distribution by OBI within each age group.

Table 6.5 - Estimates of Age at Last Birth for older women by Activity Status and Parity

Age at Census (years)	Activity Status			
	Employed	Housewife	Looking for Work	All
Parity 1				
35 - 39	26.4	28.1	26.9	27.3
40 - 44	26.4	28.0	27.9	27.3
45 - 49	28.4	28.3	29.1	28.3
50 - 54	28.4	28.5	28.4	28.4
Parity 2				
35 - 39	28.3	28.6	28.3	28.5
40 - 44	29.3	29.3	30.0	29.3
45 - 49	29.9	29.7	29.8	29.7
50 - 54	31.0	30.2	31.1	30.4
Parity 3				
35 - 39	28.8	29.2	29.0	29.1
40 - 44	30.0	29.8	30.8	29.8
45 - 49	31.3	30.8	32.3	31.0
50 - 54	3 .5	31.8	33.0	32.0
Parity 4+				
35 - 39	30.3	31.1	31.0	30.9
40 - 44	32.3	32.4	33.2	32.4
45 - 49	34.3	34.1	35.3	34.2
50 - 54	36.4	35.8	37.7	36.0

Note 1.   These figures in this table are calculated by subtracting the mean OBI from the mid point of the age group and assume a uniform distribution within both age group and open birth interval.

Table 6.6 - Open Birth Interval : Trimeans months

Age of mother (years)	Parity			
	1	2	3	4 & above
15 - 19	14.7	13.6	14.4	40.5
20 - 24	23.0	21.5	19.1	16.7
25 - 29	35.7	34.8	31.9	25.9
30 - 34	63.4	59.1	54.5	43.7
35 - 39	104.4	97.0	92.2	74.5
40 - 44	124.3	122.3	120.6	106.8
45 - 49	130.0	130.3	130.0	127.2
50 - 54	131.4	131.5	131.6	130.9
Level of education				
Primary	39.4	49.6	64.4	95.2
Secondary	28.0	45.0	61.3	79.2
Tertiary	31.4	57.0	68.4	87.6
Activity Status				
Employed	58.7	72.9	90.0	106.5
Unemployed	40.8	51.5	55.7	75.4
Housewife	33.6	46.1	62.3	90.5

6.4 Summary

The analysis of the birth intervals contained in this chapter is very instructive. It demonstrates clearly that the decline in fertility is being achieved through an increase in the age at starting childbearing and in the speed of childbearing together with a decrease in the age at stopping childbearing. This has started amongst younger women, more educated women and those in higher status group. It remains to be seen whether the younger women will "catch-up" when they enter their thirties but there is little evidence to suggest that they will.

CHAPTER 7

CONCLUSIONS

This section lists briefly the main conclusions from this volume.

1. Fertility in Mauritius has undergone a second rapid decline in the period between the last two censuses. In fact fertility in Mauritius has already reached replacement level.

2. The main trends in marriage have been for an increase in the mean age at marriage for women.

3. It is clear that the decline in fertility has started among educated younger women. This is to be expected. The important question is whether this will permeate through to the rest of Mauritian society.

4. There is evidence both of increased birth spacing and a lowering in the age at stopping childbearing. This demonstrates that the decline in fertility is under way in all the components which make up the pace and quantum of fertility.

5. The collection of fertility histories has been successful and informative thus justifying the effort and expense.

6. The decline in recent fertility among women aged 15 - 19 years has not been very consequential.

APPENDIX 1

DATA IMPUTATION

APPENDIX I - Data imputation

A number of techniques have been proposed to edit the errors and impute new values. Many of these techniques were developed for use by the World Fertility Survey (WFS) and it is their approach which has been used in this case. Typically non-response of day is ignored and the sorts of errors where imputation is undertaken are the following:

(1) Date of birth too early or late (i.e. before maternal aged 12 or after 50)

(2) No calendar year recorded

(3) Interval between births less than 7 months

(4) Month of birth missing

The main computation for the data analysed in this report was the imputation of month of birth.

The approach used is based on imputing the entire birth history of each incomplete case. Let C be number of children for a typical respondent. Let T_j be the time from birth $j-1$ to birth $j(j=1,2,\ldots,c)$ where birth zero is defined as first marriage. Let T_0 be the time from birth c to the interview. Then Time Since First Marriage (TFSM) = $T1+T2+\ldots+Tc+T0$

The first step in the imputation procedure is to find for each T_j a logical range (T_{jm}, T_{jp}) in which T_j is constrained to lie by knowledge of the year of the dates of birth $j-1$ and j and knowledge of the permissible values of T_j (e.g $T_j \geq 7$).

If the month and year of both births are known then T_j is the difference of the two dates and $T_{jm}=T_{jp}=T_j$. If the months are unknown and the years are Y_{j-1} and Y_j then $T_{jm}=\max[7,12(Y_j-Y_{j-1})]$; $T_{jp}=12(Y_j-Y_{j-1})+11$. It then remains to impute a value for T_j within this range. A number of approaches have been considered, the two main ones being (i) random imputation where the month is imputed randomly using a random number generator and (ii) a weighted approach where $T_j=W_j.T_{jm}+(1-W_j)T_{jp}$.

Simulation studies have shown that if the prime interest lies in minimising deviations from the true values then the second approach is perfectly acceptable. If, however, the requirement is to reproduce the distribution of the true values, for example to fit a parametric form to this distribution or for life table analysis then the second approach cannot be recommended as it will lead to heapings at the mean of the logical range. In this case a random method is superior.

APPENDIX 2

CALCULATION OF FERTILITY RATES

APPENDIX 2 : Calculation of Fertility Rates

An important feature of the analysis of fertility data is the calculation of period fertility rates. These are normally defined as :

$$FR = \frac{\text{number of births in a time period}}{\text{number of women to whom the births could have occurred}} \times 1,000$$

in their simplest form although it is of course possible to make them more specific by referring say, to married women or to women of a particular age or birth order. An essential criteria in the calculation of rates is that the numerator and denominator should refer to the same population. While this may seem a simple criterion it has often been abused. The data collected in the 1983 Census enable the calculation of fertility rates for many subgroups of the population disaggregated by geographical, socio-economic or demographic characteristics but only indirectly. It is necessary to make a number of assumptions in order to estimate both the numerator (the births) and the denominator (the women exposed to risk) of the rates.

To understand the problem consider the data that are available:

(a) from the birth histories it is possible to calculate the number of births in anytime period before the census. However if the number of births to women at a particular age in that time period is required then some adjustment is necessary as the preparation of the data does not immediately permit the calculation of the number of births by age of mother at the birth. Age of mother is available at the census and so an adjustment is required to account for the number of births in the time period to women aged (x, x+4) who had entered another age group typically (x+5,x+9) by the census date;

(b) the number of women to whom these births could have occurred requires a similar adjustment to account for those who have moved age group since the time period under question.

This appendix describes the methods used to make these estimations for a number of different rates:

(i) the number of women aged (x, x+4) exposed to the risk of childbearing. It is assumed that women are uniformly distributed within each age group. Then for the period one year before the census the estimate is

$E=9/10$ $W(x, x+4)$ + $1/10$ $W(x+5,x+9)$

and for the period five years before the census

$E=1/2[W(x,x+4)+W(x+5,x+9)]$

where $W(x,x+4)$ is the number of women aged $(x,x+4)$ at the census.

(ii)   the number of married women aged (x,x+4) exposed to the risk
       of childbearing. The above assumption would be innappro-
       priate for married women particularly at the younger ages
       where the proportion of women married will be skewed towards
       the upper end of the age group. Therefore the number of
       women is calculated as at (i) and then adjusted by the pro-
       portion of married women in each age group at the census.

(iii) the number of births to women aged (x,x+4) in a time period.
       Here again the assumption that there is a uniform distribu-
       tion of births by age of mother does not hold particularly
       at younger ages where births will be skewed towards the upper
       end of the age group and at older ages where the opposite
       will be true. Without data on births by mother's age in
       single years the only feasible approach is to use the pro-
       portionate distribution of births by mother's age from vital
       registration. The total number of births reported in the
       census is then multiplied by the respective proportion in
       each age group from vital registration to get an estimate
       of the number of births in a time period by age of mother.

(iv)   Estimates by socio-economic characteristics; in this case
       the socio-economic characteristics such as activity state
       or occupation can only be identified at the census. Hence
       it is important to identify the number of women who move an
       age group as a result of the adjustments described above
       and multiply them by the proportion in each particular
       socio-economic category at the time of the census.

The World Fertility Survey approach would be to adopt the random method. However as no random number generator was easily available in Mauritius it was decided to adopt a simple middle point imputation method. This method sets $Wj=1/2$ and imputes $Tj=1/2(Tjm+Tjp)$. This is the crudest form of imputation but simulation studies have shown that it is probably acceptable for analyses such as those undertaken for this report. For those proposed in the secondary analysis it is intended that random imputation method will be used.

APPENDIX 3

FERTILITY TABLES

(ISLAND OF MAURITIUS)

Notes. The tables refer to enumerated women who were over 15 years of age at the time of census.

Table A1 - Number of ever married women by age at census, marital status and number of times married

Age at census (years)	Marital Status					
	Total		Widowed, separated, divorced		Currently married	
	Married once only	Married more than once	Married once only	Married more than once	Married once only	Married more than once
Total	167,143	6,809	19,472	1,853	147,671	4,956
15 - 19	6,098	27	241	3	5,857	24
20 - 24	25,890	245	1,273	35	24,617	210
25 - 29	32,798	632	2,078	95	30,720	537
30 - 34	31,252	1,178	2,940	235	28,312	943
35 - 39	23,561	1,264	2,996	292	20,565	972
40 - 44	17,492	1,185	2,720	335	14,772	850
45 - 49	16,655	1,208	3,482	415	13,173	793
50 - 54	13,397	1,070	3,742	443	9,655	627

Table A2 - Number of ever married women by age at census and age at first marriage

Age at census (years)	Age at first marriage (years)								
	Total	Under 16	16-18	19-21	22-24	25-27	28-30	31-33	34 and above
Total	173,884	27,637	55,469	45,879	26,164	11,276	4,342	1,702	1,415
15 - 19	6,075	1,977	3,691	407	-	-	-	-	-
20 - 24	26,129	2,912	10,668	9,948	2,601	-	-	-	-
25 - 29	33,428	2,500	8,999	11,197	7,775	2,691	266	-	-
30 - 34	32,417	3,635	8,344	8,638	6,348	3,607	1,497	348	-
35 - 39	24,825	4,498	7,723	5,594	3,374	1,881	1,003	501	251
40 - 44	18,678	4,520	5,874	3,729	2,208	1,123	553	304	367
45 - 49	17,865	4,672	5,698	3,220	2,018	1,022	548	288	399
50 - 54	14,467	2,923	4,472	3,146	1,840	952	475	261	398

Table A3 - Number of ever married women by age at census and marriage duration

Age at census (years)	Total	Duration of marriage (months)						
		Under 7	7-17	18-35	36-71	72-119	120 and above	Not stated
Total	157,367	688	2,845	9,670	23,909	27,663	87,470	5,122
15 - 19	3,565	20	490	1,705	1,227	70	25	28
20 - 24	20,656	66	1,045	4,361	10,047	4,605	371	161
25 - 29	30,113	144	475	2,085	8,107	12,797	6,087	418
30 - 34	30,545	173	344	791	2,834	7,176	18,502	725
35 - 39	23,797	114	203	330	893	1,784	19,655	818
40 - 44	17,927	77	122	167	333	601	15,768	859
45 - 49	17,080	58	97	135	265	363	15,121	1,041
50 - 54	13,684	36	69	96	203	267	11,941	1,072

Table A4 - Number of ever married women by age at first marriage and duration of first marriage

Age at first marriage (years)	Total	Duration of first marriage (months)						
		Under 7	7-17	18-35	36-71	72-119	120 and above	Not stated
Total	173,963	3,717	7,399	12,465	25,956	28,881	89,602	5,943
Under 16	27,637	270	382	905	2,006	2,451	19,822	1,801
16 - 18	55,469	912	1,659	3,350	7,157	8,336	32,252	1,801
19 - 21	45,879	1,172	2,415	3,728	7,653	8,721	21,079	1,111
22 - 24	26,213	712	1,645	2,452	5,030	5,570	9,922	882
24 - 27	11,277	368	757	1,180	2,469	2,332	3,980	191
28 - 30	4,343	155	306	496	982	800	1,513	91
31 - 33	1,707	77	134	196	327	328	612	33
34 and above	1,438	51	101	158	332	341	422	33

Table A5 - Number of live births (1.7.82 - 30.6.83) by age and type of activity of mother

Age of mother (years)	Type of activity of mother			
	Total	Employed	Housewife	Looking for work
Total	19,556	2,815	16,070	671
15 - 19	1,895	62	1,757	76
20 - 24	6,651	584	5,810	257
25 - 29	5,856	1,109	4,558	189
30 - 34	3,482	681	2,703	98
35 - 39	1,278	280	957	41
40 - 44	313	77	228	8
45 - 49	63	17	44	2
50 - 54	18	5	13	-

Table A6- Number of live births (1.7.82 - 30.6.83) by age and educational level of mother

Age of mother (years)	Total	Educational level of mother		
		Primary	Secondary	Tertiary
Total	17,441	11,039	6,110	292
15 - 19	1,771	1,213	558	-
20 - 24	6,242	3,758	2,455	29
25 - 29	5,355	3,253	1,961	141
30 - 34	2,919	1,977	851	91
35 - 39	915	652	237	26
40 - 44	188	141	42	5
45 - 49	44	38	6	-
50 - 54	7	7	-	-

Table A7 - Number of ever married women having a birth between 1.7.82 and 30.6.83 by age group and parity

Age (years)	Total	Parity			
		1	2	3	4 and above
Total	19,534	6,457	5,768	3,405	3,904
15 - 19	1,889	1,456	383	47	3
20 - 24	6,640	3,093	2,360	901	286
25 - 29	5,847	1,408	2,013	1,368	1,058
30 - 34	3,480	407	819	820	1,434
35 - 39	1,280	75	154	220	831
40 - 44	315	13	33	36	233
45 - 49	65	3	6	10	46
50 - 54	18	2	-	3	13

Table A8 - Number of children ever born by age of mother and geographical district

Age of mother (years)	Total	District								
		Port Louis	Pamplemousses	Rivière du Rempart	Flacq	Grand Port	Savanne	Plaines Wilhems	Moka	Black River
Total	540,668	72,146	52,857	47,382	65,040	52,967	34,332	158,041	35,388	20,905
15 - 19	4,437	500	502	475	684	523	322	862	511	258
20 - 24	34,576	4,004	3,802	3,281	4,771	3,788	2,233	8,684	2,421	1,592
25 - 29	67,919	8,411	7,344	6,466	8,706	6,565	4,094	18,567	4,712	3,054
30 - 34	91,433	11,089	9,523	3,650	11,456	9,111	5,749	25,646	6,156	4,053
35 - 39	91,962	11,614	9,112	8,625	11,221	9,523	6,006	26,302	6,139	3,420
40 - 44	83,314	11,702	7,740	7,183	9,903	8,335	5,057	25,236	5,238	2,915
45 - 49	91,186	13,340	8,364	7,290	10,016	9,247	6,050	28,040	5,652	3,207
50 - 54	75,841	11,486	6,480	5,412	8,278	6,875	4,821	25,304	4,779	2,406

Table A9 – Number of ever married women and live births by age and activity status of women

Age-group	Activity status					
	Employed		Housewife		Looking for work	
	Women	Live births	Women	Live births	Women	Live births
Total	61,438	122,710	166,738	400,668	25,880	14,546
15 – 19	5,067	220	24,832	4,047	8,615	170
20 – 24	10,681	2,984	30,991	30,147	9,518	1,403
25 – 29	11,338	10,198	29,225	55,042	3,555	2,581
30 – 34	10,028	18,416	26,033	69,458	2,041	3,401
35 – 39	8,036	23,739	18,220	64,767	1,111	3,113
40 – 44	6,255	23,212	13,352	58,107	488	1,631
45 – 49	5,733	24,906	13,026	64,055	378	1,523
50 – 54	4,300	18,985	11,059	55,045	174	724

Table A10 - Number of ever married women and live births by age and level of education of women

Age-group	Total		None		Level of education — Primary		Secondary		Tertiary	
	Women	Live births	Women	Live births	Women	Live births	Women	Live births	Women	Live births
Total	273,844	540,197	45,487	176,600	134,154	289,933	89,319	70,089	4,884	3,575
15 - 19	56,041	4,434	1,498	326	21,646	2,956	32,699	1,152	198	-
20 - 24	51,894	34,556	2,313	2,604	24,792	22,351	23,972	9,532	817	69
25 - 34	82,689	159,223	10,553	26,275	47,425	99,862	22,199	31,378	2,527	1,707
35 - 44	47,940	175,113	14,955	64,718	24,346	89,700	7,657	19,414	981	1,281
45 - 54	35,280	166,871	16,182	82,676	15,945	75,064	2,792	8,613	361	518

Table A11 - Number of ever married women, and number of children ever born by age of mother and marriage duration

Age at census (years)	Total Women	Total Children	Marriage duration (months) Under 7 Women	Under 7 Children	7 - 17 Women	7 - 17 Children	18 - 35 Women	18 - 35 Children	36 - 71 Women	36 - 71 Children	72 - 119 Women	72 - 119 Children	120 & above Women	120 & above Children
Total	168,020	521,687	3,717	1,632	7,399	4,144	12,465	12,216	25,956	40,808	28,881	67,540	89,602	395,347
15 - 19	6,038	4,401	891	24	1,515	495	2,211	1,846	1,315	1,810	72	153	34	67
20 - 24	25,821	34,507	1,355	80	3,240	1,085	5,498	4,821	10,635	16,334	4,709	10,984	384	1,003
25 - 29	32,931	67,089	657	225	1,366	586	2,794	2,453	8,763	13,060	13,176	30,940	6,175	19,825
30 - 34	31,593	89,468	378	308	611	610	1,046	1,123	3,216	4,950	7,511	16,978	18,831	65,519
35 - 39	23,909	89,166	199	281	295	404	418	695	1,029	1,995	1,933	4,534	20,035	81,257
40 - 44	17,741	79,836	112	289	166	365	222	459	419	951	689	1,719	16,133	76,073
45 - 49	16,727	86,354	79	234	116	342	159	495	334	969	454	1,217	15,585	83,097
50 - 54	13,260	71,066	46	191	90	257	117	324	245	773	337	1,015	12,425	68,506

Table H2 - Number of ever married women and number of children ever... age at marriage and marriage duration in months

| Age at marriage (yrs) | Total | | Marriage duration (months) | | | | | | | | | | | |
| | | | Under 7 | | 7 - 17 | | 18 - 35 | | 36 - 71 | | 72 - 119 | | 120 & above | |
	Women	Children	Women	Children	Women	Children	Women	Children	Women	Children	Women	Children	Women	Children
Total	168,020	521,687	3,717	1,632	7,399	4,144	12,465	12,216	25,956	40,808	28,381	67,540	89,602	395,347
Under 16	25,836	120,080	270	531	382	634	905	1,319	2,006	5,867	2,451	6,695	19,822	107,034
16 - 18	53,668	192,011	912	544	1,659	1,295	3,350	3,677	7,157	12,261	8,338	21,020	32,252	153,214
19 - 21	44,768	120,998	3,172	553	2,415	1,150	3,728	3,550	7,653	12,035	8,721	20,731	21,079	83,579
22 - 24	25,331	56,214	712	110	1,645	676	2,452	2,085	5,030	7,303	5,570	12,257	9,922	33,783
25 - 27	11,086	21,616	568	58	757	234	1,180	995	2,469	3,410	2,332	4,822	3,980	12,097
28 - 30	4,252	7,163	155	22	306	99	496	376	982	1,281	800	1,538	1,513	3,847
31 - 33	1,674	2,455	77	13	134	48	196	136	327	410	328	572	612	1,276
34 and over	1,405	1,150	51	1	101	8	158	78	332	241	341	305	422	517

Table A13 - Average number of children ever born by age of mother and sex of last surviving child

Age (years)	Number of boys	Number of girls	Number of mothers	Average (boys)	Average (girls)
		Last surviving child (male)			
Total	179,093	96,927	80,722	2.22	1.20
15 - 19	2,018	228	1,803	1.12	0.13
20 - 24	14,055	3,502	10,504	1.34	0.33
25 - 29	24,952	9,769	15,457	1.61	0.63
30 - 34	31,377	15,608	15,732	1.99	0.99
35 - 39	29,404	17,539	12,315	2.39	1.42
40 - 44	25,805	16,310	9,168	2.81	1.78
45 - 49	28,357	18,530	8,788	3.23	2.11
50 - 54	23,125	15,441	6,955	3.32	2.22
		Last Surviving child (female)			
Total	96,642	167,424	76,154	1.27	2.20
15 - 19	222	1,920	1,714	0.13	1.12
20 - 24	3,489	13,414	10,047	0.35	1.34
25 - 29	9,485	23,630	14,578	0.65	1.62
30 - 34	15,113	29,249	14,738	1.03	1.98
35 - 39	17,386	27,584	11,441	1.52	2.41
40 - 44	16,692	24,467	8,725	1.91	2.80
45 - 49	18,545	25,671	8,235	2.25	3.12
50 - 54	15,710	21,489	6,676	2.35	3.22

Table A14 - Number of ever married women by parity, length of open birth interval and age-group

Open birth interval (months)	Age-group								
	Total	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54
Parity - 1									
Total	30,678	2,788	10,312	8,225	4,253	1,986	1,118	1,017	979
∠ 12	5,844	1,333	2,804	1,276	352	63	11	3	2
12-17	3,117	564	1,476	750	255	58	9	3	2
18-23	2,951	393	1,425	811	240	61	15	5	1
24-35	4,645	376	2,142	1,509	495	94	24	3	2
36-47	3,398	97	1,373	1,299	482	104	27	14	2
48-59	2,098	15	610	921	390	107	35	13	7
60-71	1,353	4	288	584	316	110	29	19	3
72-83	882	–	116	364	273	76	38	13	2
84-95	731	1	34	277	250	96	49	20	4
96-119	1,106	–	16	289	430	220	74	54	23
120 +	4,553	5	28	145	770	997	807	870	931
Parity - 2									
Total	37,134	668	7,317	11,141	8,627	4,364	2,261	1,569	1,187
∠ 12	5,282	359	2,172	1,842	742	135	26	6	–
12-17	2,854	136	1,129	1,036	421	111	19	2	–
18-23	2,705	77	1,010	1,039	459	99	19	1	1
24-35	4,918	70	1,507	2,063	992	231	43	10	2
36-47	4,092	16	905	1,742	1,063	290	62	12	2
48-59	3,042	7	362	1,324	980	286	67	15	1
60-71	2,240	–	148	853	853	278	82	22	4
72-83	1,639	–	63	543	659	275	73	22	4
84-95	1,341	1	14	343	543	303	96	35	6
96-119	2,098	1	5	293	963	531	211	67	27
120 +	6,923	1	2	63	952	1,825	1,563	1,377	1,140

Table A14 (cont'd) - Number of ever married women by parity, length of open birth interval and age-group

Open birth interval (months)	Age group								
	Total	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54
	Parity - 3								
Total	28,274	86	2,378	6,746	7,795	4,952	2,832	2,006	1,479
Under 12	3,071	45	809	1,232	736	204	32	9	4
12-17	1,691	13	409	707	398	134	26	2	2
18-23	1,693	13	357	672	477	140	29	4	1
24-35	3,101	12	437	1,273	1,007	294	67	7	4
36-47	2,789	2	232	1,112	1,008	345	75	14	1
48-59	2,208	-	91	788	879	347	88	14	1
60-71	1,728	-	27	449	759	341	118	29	5
72-83	1,372	1	8	275	598	344	109	33	4
84-95	1,133	-	4	121	533	307	109	52	7
96-119	1,941	-	1	102	772	633	286	123	24
120 & over	7,547	-	3	15	628	1,863	1,893	1,719	1,426
	Parity 4 and over								
Total	61,076	10	605	3,946	9,838	12,467	11,703	12,475	10,032
Under 12	3,491	2	265	935	1,277	740	214	46	12
12-17	2,066	1	106	549	708	512	153	25	12
18-23	2,072	1	70	442	764	556	181	51	7
24-35	4,096	1	100	781	1,494	1,081	482	140	17
36-47	4,000	-	38	598	1,411	1,171	553	203	26
48-59	3,637	1	9	318	1,162	1,174	680	263	30
60-71	3,085	1	2	158	862	1,048	662	318	34
72-83	2,944	1	-	88	652	942	726	466	69
84-95	2,877	1	3	38	506	871	745	575	138
96-119	6,049	-	3	20	661	1,701	1,671	1,470	523
120 & over	26,759	1	9	19	341	2,671	5,636	8,918	9,164

Table A15- Number of ever married women by parity, length of open birth interval and activity status

Open birth interval (months)	Activity Status							
	Parity 1				Parity 2			
	Total	Employed	Housewife	Looking for work	Total	Employed	Housewife	Looking for work
Total	30,539	7,433	21,604	1,502	37,019	8,303	27,485	1,231
Under 12	5,838	1,018	4,554	266	5,277	787	4,345	145
12-17	3,112	588	2,380	144	2,852	436	2,332	84
18-23	2,950	559	2,258	133	2,704	418	2,197	89
24-35	4,641	970	3,445	226	4,912	824	3,911	177
36-47	3,392	819	2,392	181	4,089	789	3,151	149
48-59	2,096	532	1,448	116	3,035	659	2,250	126
60-71	1,348	374	906	68	2,235	548	1,603	84
72-83	881	249	574	58	1,636	395	1,178	63
84-95	724	218	460	46	1,336	400	888	48
96-119	1,099	398	640	61	2,091	640	1,372	79
120 & over	4,458	1,708	2,547	203	6,852	2,407	4,258	187

Open birth interval (months)	Parity 3				Parity 4 and over			
	Total	Employed	Housewife	Looking for work	Total	Employed	Housewife	Looking for work
Total	28,150	5,670	21,622	858	60,750	14,104	45,175	1,471
Under 12	3,065	318	2,657	90	3,485	425	2,962	98
12-17	1,691	186	1,455	50	2,060	268	1,708	84
18-23	1,691	203	1,432	56	2,067	315	1,677	75
24-35	3,090	414	2,559	117	4,088	670	3,272	146
36-47	2,785	430	2,235	120	3,990	692	3,151	147
48-59	2,202	364	1,771	67	3,628	738	2,783	107
60-71	1,727	340	1,320	67	3,076	715	2,275	86
72-83	1,369	306	1,018	45	2,935	732	2,118	85
84-95	1,131	261	832	38	2,860	726	2,040	94
96-119	1,931	511	1,365	55	6,017	1,700	4,170	147
120 & over	7,468	2,337	4,978	153	26,544	7,123	19,019	402

Table A16 - Number of ever-married women by parity, length of open birth interval and level of education

Open birth interval (months)	Level of Education									
	Total	No Educ.	Prim.1/	Sec.2/	Ter.3/	Total	No Educ.	Prim.1/	Sec.2/	Ter.3/
	Parity 1					Parity 2				
Total	30,678	3,425	15,847	10,804	602	37,134	4,305	20,969	11,104	756
Under 12	5,844	285	2,834	2,594	131	5,282	363	2,973	1,854	92
12 - 17	3,117	151	1,523	1,371	72	2,854	180	1,657	960	57
18 - 23	2,951	165	1,517	1,209	60	2,705	210	1,597	855	43
24 - 35	4,645	262	2,443	1,836	104	4,918	384	2,910	1,538	86
36 - 47	3,398	211	1,880	1,239	68	4,092	339	2,415	1,255	83
48 - 59	2,098	156	1,170	728	44	3,042	249	1,808	922	63
60 - 71	1,353	101	790	438	24	2,240	217	1,261	698	64
72 - 83	882	105	497	270	10	1,639	148	970	482	39
84 - 95	731	107	407	204	13	1,341	150	751	401	39
96 - 119	1,106	202	617	260	27	2,098	287	1,160	598	53
120 & over	4,553	1,680	2,169	655	49	6,923	1,778	3,467	1,541	137
	Parity 3					Parity 4 and over				
Total	28,274	5,157	17,259	5,568	290	61,074	23,966	32,721	4,254	133
Under 12	3,071	340	1,959	737	35	3,491	926	2,180	378	7
12 - 17	1,691	210	1,089	378	14	2,066	547	1,312	201	6
18 - 23	1,693	214	1,085	374	20	2,072	611	1,264	192	5
24 - 35	3,101	405	2,023	641	32	4,096	1,211	2,514	363	8
36 - 47	2,789	398	1,838	529	24	4,000	1,232	2,386	372	10
48 - 59	2,208	322	1,432	437	17	3,637	1,252	2,062	313	10
60 - 71	1,728	267	1,091	349	21	3,085	1,152	1,699	227	7
72 - 83	1,372	238	833	279	22	2,944	1,180	1,569	187	8
84 - 95	1,133	189	701	230	13	2,877	1,250	1,437	181	9
96 - 119	1,941	405	1,130	385	21	6,048	2,747	2,943	344	14
120 & over	7,547	2,169	4,078	1,229	71	26,758	11,858	13,355	1,496	49

1/ Primary

2/ Secondary

3/ Tertiary

Table A17 - Number of ever married women by length of birth interval and age at first marriage

Interval (months)	Age at first marriage (years)								
	Total	∠16	16-18	19-21	22-24	25-27	28-30	31-33	34+
Length of birth interval - From marriage to 1st birth									
Total	157,367	26,639	52,170	41,327	22,383	9,442	3,413	1,268	725
∠ 10	33,091	3,766	10,742	10,061	5,132	2,119	799	332	140
10 - 14	47,992	5,354	16,385	13,872	7,487	3,171	1,124	393	206
15 - 17	15,820	2,372	5,537	4,150	2,276	958	338	102	87
18 - 23	20,401	3,433	7,075	5,152	2,866	1,225	409	146	95
24 - 29	12,376	2,709	4,123	2,818	1,631	688	261	84	62
30 - 35	7,311	1,762	2,384	1,582	937	417	136	53	40
36 - 47	7,709	2,200	2,468	1,531	903	372	132	69	34
48 - 59	3,895	1,257	1,173	742	405	189	75	34	20
60 - 83	3,949	1,490	1,145	662	362	163	79	28	20
84 - 107	1,871	756	489	317	187	73	34	8	7
108 & over	2,952	1,540	649	440	197	67	26	19	14
Length of birth interval - From 1st to 2nd birth									
Total	126,412	24,107	44,347	32,189	16,148	6,376	2,181	761	303
∠ 10	2,011	389	764	518	218	82	27	7	6
10 - 14	20,151	2,862	7,191	5,638	2,820	1,060	381	139	60
15 - 17	14,127	2,385	5,202	3,707	1,803	672	241	79	38
18 - 23	24,578	4,899	9,232	5,931	2,828	1,096	402	140	50
24 - 29	19,602	4,314	7,078	4,597	2,243	942	274	113	41
30 - 35	12,234	2,358	4,178	3,158	1,588	630	216	78	28
36 - 47	15,220	2,871	5,022	3,864	2,136	879	311	98	39
48 - 59	7,764	1,484	2,422	2,074	1,123	440	141	60	20
60 - 83	6,496	1,333	1,971	1,732	905	386	122	32	15
84 - 107	2,236	567	644	570	281	109	51	10	4
108 & over	1,993	645	643	400	203	80	15	5	2

Table A17 (cont'd) - Number of ever married women by length of birth interval and age at first marriage

Interval	Age at first marriage (years)								
(months)	Total	∠16	16-18	19-21	22-24	25-27	28-30	31-33	34+
Length of birth interval - From 2nd to 3rd birth									
Total	89,023	20,713	33,852	20,812	9,027	3,206	993	314	106
∠ 10	1,577	405	598	374	136	51	10	2	1
10 - 14	10,545	2,049	3,998	2,661	1,173	455	149	46	14
15 - 17	8,335	1,671	3,193	2,055	912	352	106	30	16
18 - 23	17,545	4,150	6,878	4,034	1,652	570	190	57	14
24 - 29	15,616	4,245	6,053	3,241	1,377	466	150	60	24
30 - 35	9,288	2,267	3,690	2,038	852	309	93	30	9
36 - 47	11,030	2,628	4,045	2,605	1,162	422	120	37	11
48 - 59	5,923	1,293	2,163	1,495	649	219	72	24	8
60 - 83	5,585	1,176	1,993	1,392	697	234	64	23	6
84 - 107	2,099	440	720	555	267	86	24	4	3
108 & over	1,480	389	521	362	150	42	15	1	-
Length of birth interval - From 3rd to 4th birth									
Total	60,648	16,991	24,288	12,512	4,745	1,559	420	108	25
∠ 10	1,073	305	426	219	87	27	8	1	-
10 - 14	6,241	1,563	2,436	1,419	563	189	55	12	4
15 - 17	5,239	1,329	2,089	1,138	455	158	55	10	5
18 - 23	11,602	3,313	4,715	2,328	856	285	76	23	6
24 - 29	11,231	3,450	4,542	2,162	755	244	59	17	2
30 - 35	6,866	2,020	2,789	1,353	499	159	39	5	2
36 - 47	7,770	2,264	3,022	1,609	599	194	62	16	4
48 - 59	3,964	1,040	1,539	880	333	128	30	13	1
60 - 83	3,901	984	1,570	853	351	110	28	4	1
84 - 107	1,539	391	616	329	151	39	7	6	-
108 & over	1,222	332	544	222	96	26	1	1	-

Table A18 - Number of ever married women by length of birth interval and level of education

Interval (months)	From marriage to 1st birth					From 1st to 2nd birth				
	Total	No education	Primary	Secondary	Tertiary	Total	No education	Primary	Secondary	Tertiary
Total	157,365	36,378	86,933	31,772	1,782	126,410	33,426	70,954	20,857	1,173
< 10	33,091	6,668	19,302	6,799	322	2,011	607	1,175	225	4
10 - 14	47,991	8,402	28,315	10,788	486	20,151	4,006	12,539	3,453	153
15 - 17	15,820	3,170	8,875	3,564	211	14,127	3,254	8,567	2,201	105
18 - 23	20,401	4,813	11,132	4,210	246	24,576	6,512	14,327	3,541	196
24 - 29	12,376	3,528	6,332	2,379	137	19,602	6,124	10,458	2,850	170
30 - 35	7,311	2,204	3,646	1,348	113	12,234	3,363	6,571	2,166	134
36 - 47	7,708	2,549	3,751	1,293	115	15,220	4,041	8,009	3,000	170
48 - 59	3,895	1,506	1,785	535	69	7,764	2,032	4,052	1,567	113
60 - 83	3,949	1,698	1,753	445	53	6,496	1,899	3,261	1,249	87
84 - 107	1,871	863	810	181	17	2,236	772	1,071	365	28
108 & over	2,952	1,477	1,232	230	13	1,993	816	924	240	13

Table A18 (cont'd). - Number of ever married women by length of birth interval and level of education

Interval (months)	From 2nd to 3rd birth					From 3rd to 4th birth				
	Total	No education	Primary	Secondary	Tertiary	Total	No education	Primary	Secondary	Tertiary
Total	89,021	29,081	49,829	9,699	412	60,646	23,891	32,484	4,142	129
∠ 10	1,577	540	919	114	4	1,073	412	593	68	-
10 - 14	10,545	2,853	6,412	1,232	48	6,241	2,059	3,672	484	16
15 - 17	8,335	2,282	5,088	933	32	5,239	1,792	3,076	357	14
18 - 23	17,545	5,676	10,183	1,621	65	11,602	4,447	6,432	706	17
24 - 29	15,616	5,920	8,367	1,277	52	11,229	4,891	5,690	620	28
30 - 35	9,288	3,283	5,086	883	36	6,866	2,983	3,485	393	5
36 - 47	11,030	3,823	5,823	1,327	57	7,770	3,342	3,881	529	18
48 - 59	5,925	1,859	3,168	853	43	3,964	1,568	2,046	340	10
60 - 83	5,585	1,688	2,961	883	53	3,901	1,449	2,069	370	13
84 - 107	2,098	642	1,083	361	12	1,539	510	864	162	3
108 & over	1,479	515	739	215	10	1,222	428	676	113	5