

POPULATION CENTRE BANGALORE

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**CHANGES OVER A GENERATION IN FERTILITY LEVELS
AND VALUES IN KARNATAKA**

**A Comparison of Salient Findings from the Mysore
Population Study (1951) and the Bangalore Population
Study (1975)**

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Preface

There has been a general feeling among academicians as well as administrators engaged in the formulation and implementation of family planning programme in India that the impact of the programme on fertility has not been commensurate with the enormous inputs in terms of personnel, financial resources and time invested in the programme. Though India can take legitimate pride in the fact that it was the first country in the world to declare a national demographic goal, and to launch an official programme of family planning, the time by which the targetted birth rate of 25 per mille was to be reached had to be deferred to a later and later date in each successive five-year plan. The present demographic goal is to reach the birth rate of 25 per mille by 1984. If the recent trends in the performance of family planning programme continue in future it is unlikely that this goal will be realised even by 1984. Analysis with data on births averted because of a certain number of acceptors taking to modern methods of family planning within the programme indicates that the observed birth rate declines do not match with births averted and the former are less than the latter.

In Karnataka State, it is found that the birth rate has been declining rather quite slowly, coming down from an estimated level of 40 in 1951 to about 35 in 1975. The bulk of this reduction appears to be due to structural changes in the population in age-sex distribution, and the real reductions in marital fertility appear to be only 5 to 6%. Computations reveal that the reductions in marital fertility that can be expected because of couples accepting family planning methods from within the programme should be of the order of 10%. There appears to have developed a situation wherein the potential fertility rates of married women in the State are changing or have changed in the past generation in the context of modernization.

The *Mysore Population Study* that was carried out in the then State of Mysore in 1951 and the *Bangalore Population Study* carried out by the Population Centre, Bangalore, in 1975 in an overlapping area of Karnataka State offer a unique opportunity for comparing the fertility patterns of the women in the *Mysore Population Study*, in different geographical regions, with the fertility patterns of women living in the same terrains in 1975, almost a

generation later. Comparison of findings from these two studies provides a rare data-base to study changes in the fertility patterns, attitudes to family size, knowledge and practice of family planning methods of couples in the reproductive ages in the area over a period of one generation. The findings indicate that while there has been a substantial increase in the knowledge and practice of modern methods of family planning in the area, attitudes to number of children desired and ideal family size have not changed to the same extent. It is also observed that the practice of traditional methods of family planning which was quite well prevalent before 1950 has declined very sharply with very few couples practising, nay, even aware of, by the year 1975, of these methods. Modernization seems to have set in motion a chain of changes in the socio-cultural practices of the population and has tended to release some of the traditional checks on fertility and this appears to be a major factor responsible for only a marginal decline in the marital fertility rates of women, even in the context of a strong family planning programme.

This monograph is the second in the series of *Occasional Papers* published by the Population Centre, and it is hoped that it will be useful in stimulating discussions on the extent to which modernization can contribute to an increase in the potential fertility of women in a society where culture and social conditions have exercised strong checks on fertility, either directly or indirectly, for long time in the past.

The authors wish to thank their colleagues in the Population Centre, especially the Research Assistants and Field Investigators who were responsible for the collection of data, under trying circumstances in the field, for the *Bangalore Population Study*. Special thanks are due to H.S. Surendra, Keshava, G. B. Venkatesha Murthy, Sholapurkar and Manjula Devi who assisted us in the presentation of tables.

Bangalore

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Chapter I

INTRODUCTION

In 1975, the Population Centre, Bangalore, undertook a large- longitudinal sample survey (LSS) of about 5,200 households. The setting of the survey, which is here called the *Bangalore Population Study* (BPS), is the Bangalore revenue division consisting of 5 districts namely, Bangalore, including Bangalore city, Chitradurga, Kolar, Shimoga and Tumkur in Karnataka State, India. It is the same as the geographic area covered by the India Population Project, Karnataka. The BPS, as already mentioned, is longitudinal in design. Its objectives are to (1) determine the levels of, and trends in, fertility mortality, and knowledge, attitudes and practice of family planning, (2) identify core variables associated with fertility, (3) assess the impact of additional family planning inputs provided under the auspices of the India Population Project, and (4) examine the structure of demand for family planning services.

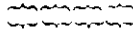
The collection of data in the first round began in May 1975 and was completed by December 1975. A detailed analysis of the data collected in the first round of the study is in progress. The availability of data from the *Mysore Population Study* (United Nations, Sales No. 61.:XII. 3), conducted about a generation ago in almost the same geographic area in which the BPS has been conducted, provides an unique opportunity to attempt an interesting and important comparison of fertility, knowledge, attitudes and practice of family planning, and opinions regarding desired and ideal family size.

The *Mysore Population Study* (MPS), jointly undertaken by the United Nations and the Government of India, was designed as a pilot project in the use of survey methods for obtaining information on the trends of population, factors which influence them, and their social and economic consequences. The collection of data for the MPS began in the middle of December 1951 and was completed by September 1952. Thus the gap between the MPS and BPS is about 24 years, almost a generation.

We thought it would be more interesting to make a quick study of changes, if any over a generation in important population parameters on the basis of the data available from the MPS and BPS rather than wait till the full findings of the BPS are published. Hence the monograph.

The objectives of this monograph are as follows :

1. To study changes in the population structure of the area (on the basis of the data available from the 1951 and 1971 censuses);
2. To study changes in fertility levels;
3. To study changes in the desired number of children by married women and their husbands;
4. To study changes in the opinions of married women and their husbands regarding ideal family size; and
5. To study changes in the knowledge and practice of various family planning methods.



Chapter II

DESCRIPTION AND COMPARABILITY OF THE TWO STUDIES

This chapter describes the *Mysore Population Study* (MPS) and the *Bangalore Population Study* (BPS), and examines comparability of the findings of the two studies in terms of (1) geographic areas covered by the two studies, (2) sampling design and (3) type of schedules administered and persons interviewed.

I. Geographic Areas

The geographic area covered by the MPS encompassed not only the present Bangalore revenue division in Karnataka State (Until November 1, 1973 known as the Mysore State) but also few other districts, either partly or wholly, in the State. But the present Bangalore revenue division accounted for the major part of the geographic area covered by the MPS. The BPS is confined only to the Bangalore revenue division.

Table I presents information on comparable geographic areas covered by the MPS and BPS. Zone I of the MPS covered parts of the rural areas of Chickmagalur, Hassan and Shimoga districts, and Zone II covered parts of the rural areas of Hassan, Chickmagalur, Shimoga and Mysore districts. The rural Shimoga district covered by the BPS is compared with zone I and Zone II of the MPS. Zone III of the MPS included the rural areas of Bangalore, Kolar and Tumkur districts as well as parts of the rural areas of Hassan and Mandya districts. The rural areas of Bangalore, Kolar and Tumkur districts covered by the BPS are compared with Zone III of the MPS. Among the rural areas, this is the largest geographic area covered by both the studies. Zone IV and Zone V of the MPS consisted of parts of the rural areas of Mysore and Mandya districts. Since the BPS has not covered either Mysore district or Mandya

district, no comparison is made with Zone IV and Zone V of the MPS. Zone VI of the MPS encompassed the rural areas of Chitradurga district and parts of the rural areas of Chikmagalur and Shimoga districts. The rural Chitradurga district covered by the BPS is comparable with Zone VI of the MPS, but no comparison is made because the MPS did not conduct the survey in Zone VI.

The MPS had in its universe all the towns with a population of 10,000-25,000 in 1941. For reasons explained elsewhere (Reddy *et al*, 1975), the BPS confined itself to the four district headquarter-towns of Chitradurga, Kolar, Shimoga and Tumkur. These four district headquarter-towns, each of which had a population of 10,000-25,000 in 1941, were included in the universe of towns of the MPS. Hence the towns of the MPS are compared with the four district headquarter-towns of the BPS.

Both the studies covered Bangalore city. Thus an analysis of changes over a generation in important parameters of population of Bangalore city poses no problem. Bangalore city is the largest urban area covered by both the studies.

The map of Karnataka State on the adjoining page shows the geographic areas covered by the MPS and BPS, as well as comparable areas of the two studies.

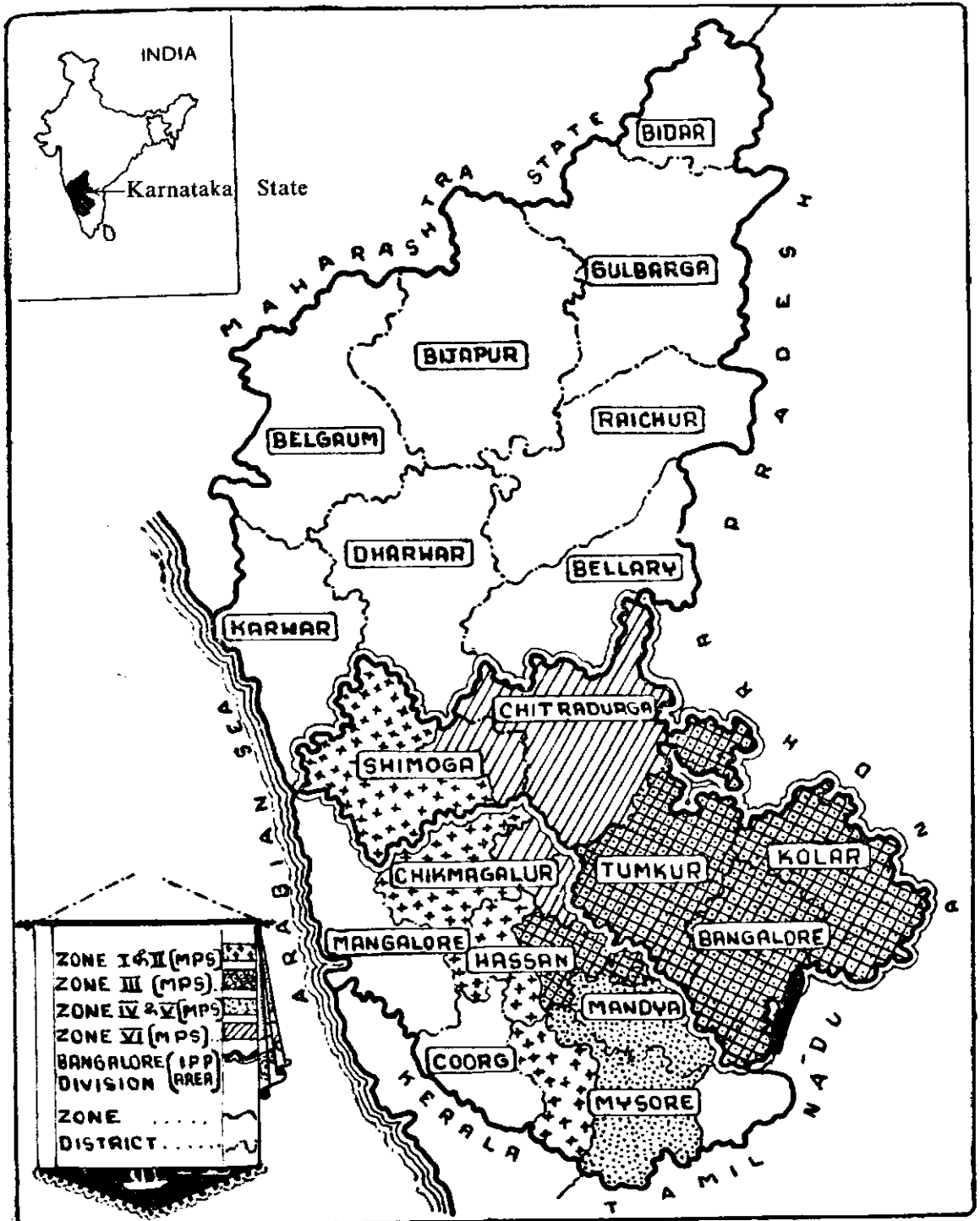
2. Sampling Design

For the selection of geographic areas for the study, the MPS first divided the then entire Mysore State into several Zones on the basis of degree of urbanization, geographical terrain (hilly areas or plains), source of irrigation for agriculture and development of public health activities. The rural areas were divided into 6 zones on the basis of rainfall, type of irrigation, principal crops grown and location of anti-malarial operations. Thus Zone I and Zone II included rural hills with and without large-scale anti-malarial operations respectively. Zone III comprised of rural plains with tank-irrigated areas. Zone IV and Zone V also comprised of rural plains with canal-irrigated areas and with and without large-scale anti-malarial operations respectively. Zone VI, too, covered rural plains but with dry-farming areas.

The towns were divided into 3 groups on the basis of population size: 5,000-10,000 formed the first group, 10,000-25,000 formed the second group and 25,000-50,000 formed the third group.

Bangalore city was divided into 5 strata on the basis of religious composition and literacy of the population. Municipal divisions in which Muslims accounted for 35 per cent or more formed one stratum, those in which Christians accounted for 35 per cent or more formed another stratum, and those in which Hindus belonging to Scheduled Castes accounted for 35 per cent or more formed the third stratum.

Map : Geographical area under Mysore Population Study (1951) and Bangalore Population Study [1975]



The remaining Municipal divisions were divided into two strata - one in which literates accounted for 60 percent or over in the age group 5 and above and the other in which they accounted for less than 60 per cent.

It may be noted that for some practical reasons the MPS did not cover all the rural zones and all the 3 groups of towns. "To carry out the study in all zones of the State would have involved a greater expenditure for field work than could have been justified in view of the amount of funds available and the fact that the study was planned mainly as pilot project for testing (survey) methods. It was therefore decided to make the field survey only in Bangalore City, the towns of 10,000 to 25,000 population, and the villages in rural Zones I, II and III, that is, the rural hills and the tank-irrigated areas of the plains" (United Nations, 1961: 14)

The MPS adopted a two-stage stratified sampling design, selecting villages in the rural areas and census blocks in the urban areas at the first stage, and households at the second stage. The sampling design adopted by the study is as follows:

"(1) For each of the three rural Zones:

- (a) Selection of a constant proportion (1 in a) of villages, at random, from each of six strata established by dividing the villages by population size, viz., under 100-299, 300-499, 500-999, 1,000-1,999, and 2,000-4,999
- (b) Selection of a constant proportion (1 in b) of households, at random, in each village to be surveyed.

(2) For the towns of 10,000 to 25,000 inhabitants taken as a group :

- (a) Selection of a constant proportion (1 in a) of census blocks, at random, in each of the fifteen towns lying within the surveyed areas
- (b) Selection of a constant proportion (1 in b) of households, at random, in each selected block

(3) For each of the five strata of Bangalore City :

- (a) Selection of a proportion (1 in a) of census blocks, at random, from those belonging to the given stratum.
- (b) Selection of a constant proportion (1 in b) of households, at random, in each selected block" (United Nations, 1961 : 21).

are contiguous and each block consists of about 130 households. The investigator units were numbered on the map in concentric circular fashion. From the list of total number of households in all the investigator units in each of the 4 district headquarter-towns and in Bangalore city, samples of investigator units were drawn systematically with probability proportional to the number of households. Since the number of households did not vary significantly from one block to another, blocks within the selected investigator units were selected at random. All the households in each of the selected blocks were enumerated and 2 independent and interpenetrating samples of households were selected by simple random method without replacement.

Table 2 presents details of sampling in the MPS and Table 3 in the BPS. Although the two tables are self-explanatory, it may be noted that on the whole the MPS covered 10,663 households, as compared with 5,142 covered by the BPS. The number of currently married women aged 18-33 and their husbands interviewed in the MPS accounted for 1,403 and 1,116 respectively, while in the BPS they accounted for 2,145 and 2,043.

3. Type of Schedules Used and Persons Interviewed:

Table 4 presents information on the type of schedules used and persons interviewed in the MPS and BPS. The household schedule in both the studies was administered by male interviewers to heads of households or, in their absence to responsible adult members of the households. In the MPS, fertility and attitude schedules were administered by female interviewers to currently married women aged 18-33 and married atleast 3 years prior to the survey. The attitude schedule in the MPS was also administered by male interviewers to the husbands of the currently married women. Thus the men and women to whom the attitude schedule in the MPS was administered were their own husbands and wives. But the fertility schedule in the BPS was administered by female interviewers to ever married women aged 15-49. The attitude schedule in the BPS was administered by female interviewers to currently married women aged 15-44 in 50 per cent of the selected households and by male interviewers to husbands of currently married women aged 15-44 in the other 50 per cent of the selected households. Thus the men and women to whom the attitude schedule was administered were not spouses. This is not expected to provide any problem for comparative purposes. The problem posed by differences mainly in the broad age groups of currently married women is largely overcome by further subdividing them into various groups and focussing attention on the women belonging to the same age groups.

It must be remembered that the purposes for which the MPS and BPS were conducted were different. There is no one-to-one correspondence between the two studies. There were differences in the geographic areas covered by the two studies,

in the definitions of some of the terms used and in the structure of sentences in the interview schedules. Keeping all these problems in mind, an attempt is made in the monograph to study changes over a generation in a limited number of population parameters. Caution has been exercised wherever necessary.

Chapter III

ANALYSIS AND RESULTS

A. Structural Changes in the Population as Obtained from the 1951 and 1971 censuses

Before proceeding to analyse the data obtained from the two studies in the area, it seems worthwhile to gauge the major structural changes in the population of the area during the period 1951-1971 on the basis of the results from the 1951 and 1971 censuses. It is possible to make very elaborate comparison of demographic and socio-economic characteristics of the population and changes in these over time. But such a detailed comparison is not attempted in this monograph since the main objective here is to compare changes in fertility, family planning practice and related attitudinal variables in the population over a generation as could be gathered from a comparative analysis of the data available from two large scale studies. A comparison of the data available from the two censuses is carried out mainly to provide a background of the broad changes in the population against which specific changes in fertility and related variables could be studied.

A few tables, Tables 5 to 8, present some of the salient characteristics of the population of the area such as the age distribution and growth, occupational structure, literacy rates and composition by religion and caste as obtained from the two censuses. From Table 5 it can be seen that in broad age groups 0-14, 15-25 and 25+, there appear to be no significant shifts in the age distribution of the population of males and females during the two decades of 1951-1971, either in the rural plains or in Bangalore city. In the rural plains as well as in Bangalore city the population in the age group 0-14 has recorded a marginal increase of less than 3 per cent, the percentages increasing from 40.31 to 41.89 in rural plains and from 34.73 to 37.47 in Bangalore city.

The age group 15-24 has recorded a small decline of about 4 per cent in the rural plains and 2 per cent in Bangalore city; the age group 25+ has recorded an increase of about 2 per cent in rural plains, while it has recorded a decrease of about one per cent in Bangalore city.

The increase in the proportion of children in the population is mostly due to the effects of rapid decline in child mortality during the two decades, even in the presence of declining fertility. Though the declines in fertility could have contributed to a substantial decrease in the proportion of children below 15 years, the decline in mortality has been of such a scale in this age group that not only have the effects of fertility been counteracted but a net marginal increase in the proportion of children has been observed. The possibility of differential errors in the reporting of ages by the population in the two censuses cannot, however, be ruled out.

With regard to the growth, the population of rural plains appears to have increased at an arithmetic rate of 1.66 per cent per year and at a geometric rate of 1.44 per cent per year; Bangalore city has grown at an arithmetic rate of 4.89 per cent per year and a geometric rate of 3.47 per cent per year. The high rate of growth in Bangalore city is mostly due to migration from rural areas. The population growth appears to have been the maximum among children below 15 years and the minimum among the adolescents and young adults of the age group 15-24.

Table 6 presents the proportion of the workers in the rural plains and Bangalore city in 1951 and 1971 according to the sector of activities of the workers. The primary sector is essentially made up of agricultural labourers, tenant cultivators, and owner cultivators and those employed in mining, forestry, etc. The secondary sector is made up of those employed in industries, including the household industries and production other than cultivation and the tertiary sector is made up of construction workers and those employed in trade, commerce, transport, communication and other public services. From Table 6, it can be seen that there is practically no change either in the rural areas or in the urban areas in the three broad categories of the occupational structure of the population. There is a marginal increase in the proportion of the population employed in the primary sector, namely, agriculture from 1951 to 1971 and a marginal increase in those employed in the secondary sector in Bangalore city. The proportion employed in the tertiary sector has recorded a marginal decline in both the areas. This table reveals that there has been no significant transfer of population from agriculture to industries in the rural areas.

Table 7 provides rates of literacy among men and women in rural plains and Bangalore city in 1951 and 1971. The overall literacy rate, literacy being defined as the ability to read and write in at least one language, has increased from 14 to 24 per cent in the rural plains and from 43 to 59 per cent in Bangalore city. The increase in literacy as a percentage to the base figure is substantially higher among women both in rural areas

and in urban areas, the percentage increasing from 5 to 13 in rural areas and from 31 to 51 in Bangalore city. However, even in 1971 the proportion literate is significantly higher among men than among women in rural plains as well as in Bangalore city.

Table 8 provides the distribution of the population by different religious denominations and by major caste groups within Hindus in 1951 and 1971 in rural plains and Bangalore city. There does not appear to be any major changes in the religious distribution of the population in the area excepting that the proportion of non-Hindu population in rural plains and Bangalore city has recorded a marginal decrease possibly because of migration to other areas. The Hindu population has increased from 93.5 per cent in 1951 to 94.2 per cent in 1971 in the rural plains and from 73.9 to 77.0 per cent in Bangalore city. Among Hindus, there is a marginal decrease in the proportion of scheduled castes and scheduled tribes, from 21.3 to 20.9 per cent in rural plains and 11.7 to 9.9 per cent in Bangalore city. The changes in the definition of schedule castes between 1951 and 1971 and differential migration might have contributed to these changes. From an analysis of the population reporting Kannada as their mother tongue in 1951 and 1971, it is found that this proportion has significantly increased during the two decades, from 59.0 to 75.0 per cent in rural plains and 23.8 to 31.8 per cent in Bangalore city.

B. Comparison of Results from the Two studies :

Tables 9-26 present comparable data on selected indicators of current fertility, cohort fertility, survivorship-ratios and selected attitudinal variables of the population as obtained from the *Mysore Population Study* (1951) and the *Bangalore Population Study* (1975). Though the two studies have given rise to a large number of tables relating to fertility, mortality, family planning practice, etc., for a comparative analysis, tables have to be selected with a great deal of caution because of definitional differences of the terms used in the two studies and consequent lack of comparability of the results. Geographical comparability was achieved by identifying overlapping areas of rural hills, rural plains, towns and Bangalore city in the two studies as described in the earlier chapter. The process of selection of tables with comparable results from both the studies could yield information only on a few variables, objective as well as attitudinal, and the present monograph aims only at a comparison of variables relating to fertility and family planning practice and selected knowledge and attitudinal variables relating to these factors.

Tables 9-11 provide data on current fertility levels, at the two points of time surveyed in 1951 and 1975, and the correction factors applied to the estimates in the MPS, Tables 12 to 15 on the number of children born, number alive and survivorship-ratios in broad age groups as obtained from the two studies, Tables 16 to 20 on the attitudes regarding ideal family size and desire for additional children and motives for family

planning as obtained from the two studies, and Table 21 to 26 on the extent of knowledge and practice of family planning in the two studies.

Current Fertility

Tables 9 and 10 present comparable data on selected indices of current fertility available from the *Mysore Population Study* (1951) and the *Bangalore Population Study* (1975). Table 9 presents the various estimates of fertility such as, the crude birth rate, general fertility rate, general marital fertility rate, general ever-married fertility rate (for ever-married women) and age specific marital fertility rates, separately for rural hills, rural plains, towns and Bangalore city based on the data available from the two studies. From this table it can be seen that in the crude birth rate there has been a decline of 7.6 points in the rural hills, 2.0 points in the rural plains, 4.5 points in the towns and 2.6 points in Bangalore city over the 24-year period. These declines in fertility are small considering the fact that the time lapsed is almost a generation and that the area has been the venue of implementation of intensive programme of family planning for over a decade from 1962-63. If we consider the general fertility rate, based on all women aged 15-44, there is a substantial decline in the index in all the areas - rural hills, rural plains, towns and Bangalore city - while with regard to general marital fertility rate or general ever-married fertility rate there is hardly any decline. The general fertility rate has declined by 17 per cent in the rural hills and 19 per cent in the towns; the general marital fertility rate has declined only by 6 per cent and 5 per cent in these two areas. This indicates that even the small decline observed in the crude birth rate can be attributed, assuming the data to be reliable, mostly to changes in the age-marital status distribution of the population than to change in marital fertility.

Computation with the number of couples protected in 1974-75 by various family planning methods adopted within the programme in the earlier years and the births averted by them indicate that even the programme acceptors would have contributed to a 10 per cent decline in marital fertility rate or about 4 points in the crude birth rate of 1951, without assuming any additional effects due to structural changes in the population. We have to, also, add to this the effects of acceptance outside the programme and the fertility effects of non-programme factors. Thus we are faced with a paradoxical situation wherein the declines in the marital fertility rates that could be expected because of couples accepting family planning methods, even from within the programme from 1961 have not been observed from a comparison of the marital fertility rates in the two studies. Where have the effects of family planning programme gone?

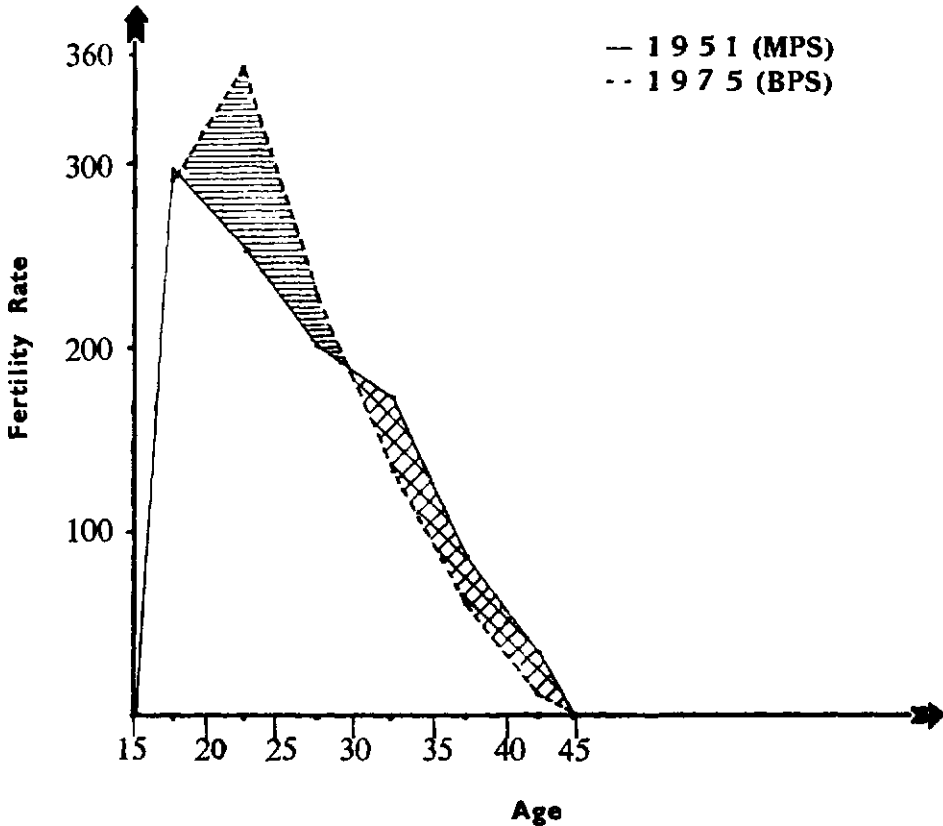
It is possible that the birth rates in different areas in the Bangalore division in 1951 could have been underestimated by the *Mysore Population Study*, or in the present

Bangalore Population Study could have been overestimated. Or, there could have been set in operation during the past two decades a set of forces that had contributed to an increase in the potential fertility of the married women in the area even in the presence of a strong family planning programme. More than one of the above three factors could have been in operation simultaneously or sequentially during the past two decades. Available evidence from the nature of social and cultural changes taking place in the population indicates that the most likely set of factors responsible for this small decline in the birth rate during the past 24-year period is the fertility increasing effects of modernization in the particular socio-cultural context and an almost total eradication of malaria from the region and improvements in the general health conditions of the people.

In the study area, for a long time in the past, there had been in operation a large number of traditional checks on fertility placed by cultural and social factors. They include prolonged abstinence by couples after the birth of a child owing to the mother going to her parents' home for delivery and remaining there for a considerable length of time, taboos regarding sexual intercourse on certain days of the month for religious or for social reasons, prolonged breast feeding, prohibition of widow remarriage, etc. Many of these cultural or social checks on fertility can be expected to be loosened because of modernization and in the absence of higher rate of adoption of modern methods of family planning with greater effectiveness, the potential fertility of the population can be expected to increase. Also, from the available records it is found that the population of the Bangalore division has been subjected to frequent epidemics of malaria over a number of decades in the past and many hill tracks of the area have been declared endemic for malaria. It is well known that malaria could reduce the fecundity of the population and contribute to increased secondary sterility. Massive anti-malarial programmes which have been implemented in this area during the '50s and '60s could have contributed to an increase in the fertility of married couples.

The above hypothesis that modernization has contributed to an increase in the potential fertility of the couples is empirically validated from a comparison of age specific marital fertility rates obtained from the two studies and presented in Table 9. A graphic presentation of the age patterns of fertility in 1951 and 1975 in Bangalore city and towns is given in Charts 1 and 2 respectively. In the rural hill areas, there has been an increase in marital fertility in all the age groups excepting 25-29 during the period 1951-1975. In the rural plains, towns and Bangalore city there has been an increase in the marital fertility rates in the age group 15-19 and 20-24 and excepting in rural plains there has been an increase even in the age group 25-29 in the other two areas. In towns and Bangalore city, there has been a substantial decrease in the marital fertility rates of older women of 30 years and above. This indicates that the fertility declines observed in towns and cities are mostly among older women caused essentially by fertility limitation practices as judged from the wide acceptance of sterilization among the acceptors of

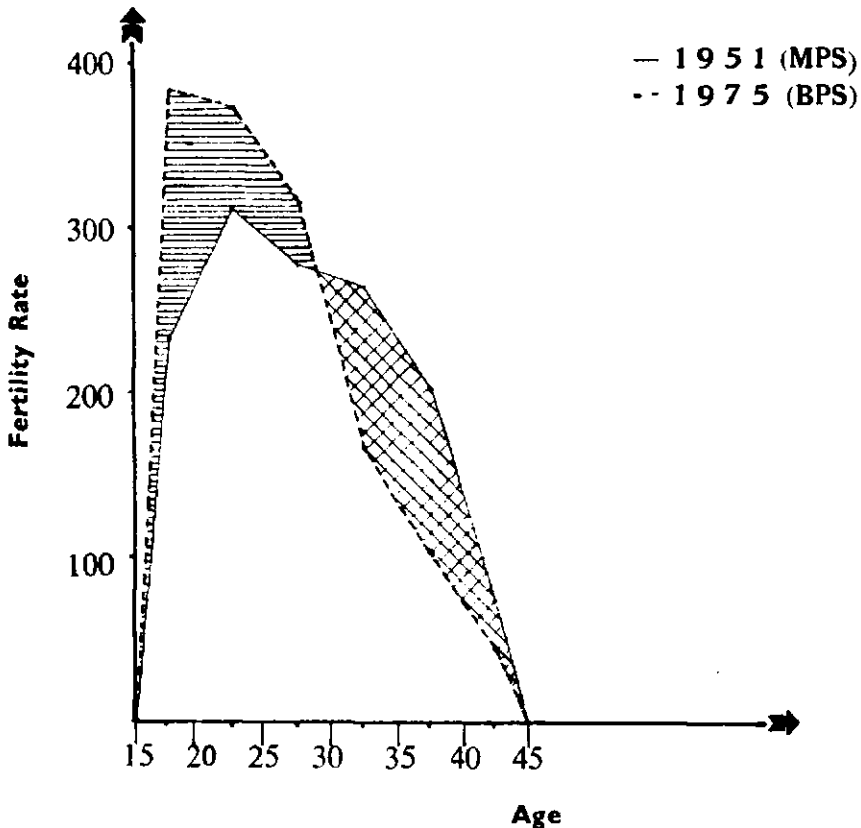
CHART I PATTERNS OF AGE SPECIFIC MARITAL FERTILITY RATES IN 1951 AND 1975 FOR BANGALORE CITY



modern methods of contraception. An analysis of the extent of acceptance of various methods of family planning from the various service centres operated under the official programme of family planning, during 1962 to 1975, when intensive family planning programme was in operation throughout the country, including the state, reveals that in Bangalore division almost 80 per cent of the new acceptors of modern method of family planning had accepted sterilization. The increase in the marital fertility rate among the younger age groups can be taken to be indicative of a possible reduction in the spacing of children caused by relaxation of the traditional checks which were responsible in the past to an increased spacing of children. In this connection it is worthwhile pointing out that an increase in the marital fertility rate of women in the age group 15-19 is consistent with an increase in age at marriage, from 14 to 17 for girls from 1951 to 1975. The effects of social and cultural practices prevalent in

the area have been largely to increase spacing between births rather than to limit the number of births, for which the traditional methods are ineffective. Modernization, by removing these checks, can be expected to shorten the average interval between children and the extent such couples adopt limitation practices later can be expected to alter the age specific fertility patterns, as observed in the data, by increasing fertility rates in the younger ages and by reducing in the older ages. It is well known that the intervals between successive births in India have been consistently long with an average of 36 months as obtained from various studies in the '50s and '60s and one of the reasons for such long intervals is the prolonged lactation and low fecundability caused by cultural and religious taboos regarding sexual intercourse and possibly due also to malnutrition and diseases. One implication of this comparative analysis is that even in the presence of a strong family planning programme it is possible that the marital fertility rate or crude birth rate need not record a substantial decline when the fertility decreasing effects of couples adopting family planning methods are counteracted by the fertility increasing effects of modernization which tend to release the traditional checks on

CHART 2 PATTERNS OF AGE SPECIFIC MARITAL FERTILITY RATES IN 1951 AND 1975 FOR TOWNS



fertility. For some years, it is possible that as a consequence of these two opposing effects of modernization, fertility may decline rather slowly or even fluctuate around a level of 35 and only when the relaxation of the traditional checks on fertility are fully counter-balanced by a sizeable number of acceptors of modern methods of family planning, that a steady decline in the birth rate could be expected. This phenomenon seems to be unique for countries where there have been strong traditional socio-cultural checks on fertility and when family planning programme is implemented in the context of modernization which tends to loosen these traditional checks. The Western experience of contraception with modern methods causing a steady decline in the crude birth rates or age specific marital fertility rates does not appear to be relevant in the cultural contexts of countries like India. Various anthropological studies carried out in India seem to substantiate the view that modernization tends to loosen the traditional social and cultural checks on fertility.

The *Mysore Population Study* (1951 : 135-137) identified a number of popular opinions reflecting traditional checks on fertility. These related to the discouragement of women from having any more children when their own sons and daughters start having children, long periods of abstinence after the birth of a child and long intervals between births. But recent anthropological studies show that traditional checks on fertility are becoming weak as a result of modernization. For example, Karve (1968 : 269) observes, "A girl generally goes to her parents' house in the 7th month of her pregnancy and returns to her husband's home when the baby is three months old. Besides this there are numerous other occasions on which a married woman visits her parents' home and stays there with her children. During the first few years of marriage such visits are numerous and prolonged.... In olden days when large joint families were common such a procedure did not incommode the husband too greatly; but now-a-days when husband and wife live together in a small house with the husband serving as a Government servant or in a mill as a labourer, the wife's departure and long absences compel the husband to cook for himself. On my field work throughout the south and in Maharashtra I found such people again and again in their lonely unkempt houses cadging for a meal at the houses of their friends and tired of cooking for themselves." When they are tired of cooking for themselves, men call back their wives from their parents' home earlier. This naturally results in earlier resumption of sex relations and earlier conception.

Widow remarriage was not common in the olden days. But in recent years, widow remarriage is legally permitted in India and socially in many communities. Karve (1968 : 382) says, "..... now Brahmin widows can marry without the fear of social ostracism as far as the bigger cities are concerned."

Mandelbaum (1974: 60-75) has made a succinct analysis of various traditional patterns of behaviour which led to reduction in fertility. It should be mentioned, however, that the manifest aim of many of the traditional patterns of behaviour was not reduction in fertility. But they resulted in unintended reduction in fertility, mainly through longer birth intervals which were caused by temporary separations between men and their wives due to the latter going away to their parents' homes for confinements, and prolonged breast-feeding of children. But modernization seems to shorten birth intervals and result in a spurt in fertility. On the basis of analysis of NSS data, Mandelbaum (1974 : 26-27) observes: "A marked shortening of birth intervals seems to have occurred in recent decades. Rural women who had been married before 1941 showed an average interval of 40.80 months in a large nationwide sample; those married after 1941 averaged 33.47 months. The comparable figures for the samples, of urban women were 37.60 and 30.97 months."

Some traditional patterns of behaviour were directly aimed at reduction in fertility. When a woman's daughter or daughter-in-law gives birth to a child, she develops what is called "grand-mother complex" and tries to be sexually passive so as to avoid pregnancy; otherwise, she is subject to such community criticism as "She is now competing with her daughter to have a child" or "It is time she showed less interest in worldly pleasures" (United Nations, 1961: 133). Mandelbaum (1974 : 29) makes a similar observation : "A woman whose children are old enough to be having children of their own may feel herself demeaned if she becomes pregnant again, particularly if there is a daughter-in-law in the house." Such popular opinions led to reduction in fertility.

Table 10 presents information on selected fertility indices by occupational groups in rural areas (rural plains and rural hills combined) in the two studies. The index has been computed by taking the fertility rate for all occupational groups as 100 and computing the rates for each specific group as a related measure. This was necessary since the Mysore Population Study (1951) presented data in such a format. From this table, it can be seen that the fertility of labourers or temporary tenants engaged in agriculture has recorded a relative increase as judged by all the fertility measures, and the increase has been quite striking in the general fertility rate where it has jumped from 84 in 1951 to 114 in 1975, that is, by 36 per cent. For those engaged in other agricultural occupations, there has been a small decline in all the fertility measures and for those engaged in non-agricultural occupations there has been very little change. The findings from this table are relevant only to the area under study and cannot be generalised for the whole population.

Table 11 presents estimates of corrected and uncorrected birth and death rates for different zones in the Mysore Population Study. The table is presented mainly to illustrate the fact that the rates published in the Mysore Population Study have been obtained after application of necessary correction factors computed

by comparison of survey data with those obtained from another independent survey or registered records. With regard to birth rate, there has been an increase of almost 3 to 4 points in most of the zones because of the application of the correction factors and any errors in the application of the correction factors could have altered the estimates and such a possibility has to be borne in mind while comparing the results of 1951 study with those of the 1975 study.

2. Cohort fertility and survivorship of children

Tables 12-15 provide data on the mean number of children born, mean number living, survivorship-ratios and differentials by religion and caste as obtained from the two studies. Table 12 provides data on the mean number of children born to women in different age groups in the rural hills, rural plains, towns and Bangalore city as obtained from the two studies. The surprising result that one gets from this table is that in the rural hills and rural plains there has been an increase, not to be considered small, in the average number of children born to women in every age group. The 1975 study has revealed that in the towns, too, the average number of children born per woman in all the age groups, with the exception of 25-34, is the same as or higher than that born per woman as revealed by the 1951 study. In Bangalore city there has been an increase in all the age groups. The increase appears to be substantial in the older age groups. It can be hypothesised that this increase in total fertility can be attributed to the combined effects of the following two factors :

- i) A relatively greater under-enumeration of children in the Mysore Population Study; and
- ii) A real increase in the potential fertility of the women during the period 1951-1975 as an effect of modernization relaxing some of the traditional checks on fertility as explained earlier.

The possibility that there has been a substantial under-enumeration of children, especially of the older women in the rural areas, rural hills and rural plains, in the Mysore Population Study (1951) arises from the fact that the number of children born to women in the age groups 35-44 and 45+ are much lower than the number of children born to women in these two age groups in towns and Bangalore city, though the urban areas have reported much lower current fertility rates compared to the rural areas. It is also possible that there has been some omission in the number of children ever born in the urban areas as well, in the 1951 study though the omission appears to be much less than in the rural areas. Since the Bangalore Population Study adopted a detailed pregnancy history schedule with a number of check questions and the trends in the number of children born to women in different age groups are consistent with the age patterns of cumulative fertility curve, it can be expected that the estimates

of the number of children born obtained from the Bangalore Population Study are very close to the true values. However, the fact that the cumulative fertility curve in rural and urban areas even in the Bangalore Population Study in 1975 does not show much difference is indicative of the small changes in fertility differentials that exist between the rural and urban areas in terms of cohort fertility measures. This finding has to be analysed in the light of the observation made earlier that there has been substantial rural-urban differentials in terms of current fertility measures. It is also to be recognised that the fertility-increasing effect of modernization, as described in the earlier section, could have counteracted the effects of family planning even in terms of cohort measures as in the case of current measure of fertility and that the traditional checks can be expected to be liberalized more in the urban areas than in the rural areas.

Table 13 provides data on the mean number of children living for women in different age groups in rural hills, rural plains, towns and Bangalore city. The differentials in the case of number of living children between the two studies are much greater than in the case of number of children born presented in Table 12. For example, in rural hills, the mean number of children born per woman in the age group 25-34 according to the 1951 and 1975 studies was 3.5 and 4.1 respectively; the mean number of children living according to the two studies was 2.3 and 3.5 respectively. The increase in differential can be mainly attributed to a substantial decline in mortality during the 24-year period, which is found to be more in rural areas than in the urban areas. For example, in Bangalore city, in the same age group 25-34, the average number of children born, as reported in the two studies, was 3.2 and 3.4 respectively, while the average number of children living was 2.4 and 2.9 respectively. The average number of children reported for women of 45+ years in all the areas in the Mysore Population Study is much lower than the average number of children living for women of the age group 35-44, suggesting a strong under-reporting of children of the older women in the study.

Table 14 presents data on the survivorship-ratios of children living to children born in different geographical zones in the two studies. This table dramatically presents the decline in mortality and the consequent increase in the survivorship-ratios of children for women in every age group. There does not appear to be any age differential in the proportionate increase in the survivorship-ratios between the two studies. It is possible that the survivorship-ratios of children of women of older ages have been relatively over-estimated since for older women there is the likelihood of a greater under-reporting of the number of children living, which will be in the numerator. This positive bias can be expected to be more in the earlier study and whenever necessary corrections for such a bias are made, it can be expected that the relative increase in the survivorship-ratios would be higher among older women than among the younger women.

Table 15 provides data on the mean number of children born in different geographic zones in the two studies classified by religion and caste of the household. It can be seen, as noted earlier in Table 12, that in every religious group, as well as in caste group among Hindus, there has been a substantial increase in the average number of children born between the two studies indicating an increase in fertility. This increase is found to be substantial among scheduled castes and backward castes, indicating partly a higher level of under-reporting of children in these two castes in the earlier study and partly increased potential fertility because of various health and social welfare programmes launched with special focus on these communities during the past two decades. For example, the average number of children born for ever-married woman in the age group 15-49 for scheduled castes surveyed in towns, in the Mysore Population Study in 1951, was found to be 2.8 and for the same category of women surveyed in the Bangalore Population Study in 1975 it was found to be 3.5. Similarly, for a backward caste woman the figures were found to be 2.9 in the Mysore Population Study and 3.5 in Bangalore Population Study. The fact that the increase in the average number of children born during the past two decades is found to be larger among women from lower socio-economic strata substantiates the point made earlier that with public health programme, essentially the anti-malarial and immunization programmes, the potential fertility of the population seems to have increased. In both the studies, the average number of children born is significantly higher among the Muslims than among the other religious groups.

3. Opinions and Values Regarding Family Size

Tables 16-20 present comparable data on the opinions of married women and their husbands on selected fertility-related variables as obtained from the two studies. Table 16 provides information on the ideal family size or the average number of children desired by currently married women and their husbands as reported in the two studies. In this connection it may be pointed out that there have been differences in the method of obtaining the opinion on ideal family size or desired family size between the two studies. In the Mysore Population Study, each woman was asked on the ideal number of children a couple should have without any special reference to the number of children the respondent had at the time of the survey. In the Bangalore Population Study, each woman was asked on the additional number of children she would like to have and this figure was added to the number of children she has already had at the time of the survey in order to obtain the desired family size. The latter procedure can be expected to give a higher value than the former ideal family size, since a woman already having a large family will automatically have a higher desired family size and this may not be the case according to the procedure adopted in the Mysore Population Study. Further, while in the Mysore Population Study the husbands and wives in the same selected households were interviewed separately by male and female interviewers, in the Bangalore Population Study the husbands and wives were interviewed in alternate households in the sample.

Table 16 reveals that even according to the procedure adopted in the Bangalore Population Study, which tends to give a higher estimate for the desired number of children, the desired family size according to the Bangalore Study (1975) is lower than what was reported in the Mysore Population Study (1951), indicating a fall in the number of children desired during the span of 24 years. For example, the ideal family size reported in rural plains according to the women interviewed in Mysore Population Study was 4.7, while the desired number of children according to the Bangalore Population Study was 4.2, which itself is an over-estimate. Thus there is indirect indication from this table that the ideal family size of the population has fallen over the 24-year period.

Table 17 provides data on the ideal family size according to the Mysore Population Study and the desired family size according to the Bangalore Population Study classified by the educational level of the wives, educational level of the husbands and the economic status and religion of the respondents. The data have been provided as available from the two studies. The differentials of ideal and desired family size between the two studies indicate that the differential by education are larger among the husbands than among the wives. For example, high school educated husbands had an ideal family size of 3.9 in the Mysore Population Study and a desired family size of 3.2 in the Bangalore Population Study. On the other hand, the middle school or high school educated wives had an ideal family size of 3.7 in the Mysore Population Study compared to 3.4 in the Bangalore Population Study. The differentials according to economic status indicate that the desired family size has fallen in all occupational groups. There does not appear to be any change in the desired family size of the Muslims between the two study periods, while for Hindus there has been a reduction in the desired family size.

Table 18 presents data on the proportion of women and their husbands who desired any more children at the time of the Mysore Population Study compared with similar information from the Bangalore Population Study, classified according to the parity (number of live births) of the respondents in rural plains and Bangalore city. As in the case of ideal family size, even here there was a subtle difference between the method of questioning adopted in the two studies. When the woman in the sample household was pregnant at the time of enquiry, the Mysore Population Study, enquired of the respondent's desire for additional children including the current pregnancy. On the other hand, the Bangalore study has enquired of the desire for additional children excluding the current pregnancy. The latter procedure can be expected to provide a lower proportion of the respondents desiring additional children than the former procedure and any observed difference between the two studies should take into account this under-estimation in the latter study.

In Bangalore city, of all the women respondents interviewed in the Mysore Population Study, while only 43 per cent did not desire any additional children, in the Bangalore Population Study, 64 per cent of the same category of respondents did not desire any additional children; while among those with large family, that is, 4 to 6 children, in the Mysore Population Study 72 per cent of the women did not desire additional children, in the Bangalore Population Study, 92 per cent did not desire any additional children. With regard to the males interviewed in the two studies, while only 28 per cent of all the husbands interviewed in the Mysore Population Study in 1951 did not desire any additional child, 60 per cent of those interviewed in the Bangalore Study in 1975 did not desire any additional children; and among those with large family, 4 to 5 children, while 56 per cent of the husbands interviewed in 1951 did not desire to have any more children, 87 per cent of the husbands interviewed in 1975 did not desire further children.

In the rural plains, among women respondents while 31 per cent of the women interviewed in 1951 did not desire any additional children, 46 per cent of those interviewed in 1975 did not desire any additional children. Among those with large family, that is, 4 to 6 children, while 59 per cent of those interviewed in 1951 did not desire any additional children, 71 per cent of those interviewed in 1975 did not desire any additional children. Similarly, among the husbands interviewed while only 20 per cent of those interviewed in 1951 did not desire any additional children, in 1975 this percentage has increased to 51 and among those with large family, 4 to 6 children, the increase was from 48 per cent to 74 per cent. Further, it may be seen from the table that the proportion giving vague or indifferent answers to the question "Do you desire more children", has dropped almost to a zero level in 1975 from about 8 to 10 per cent in 1951. This may be taken to be an indication of development of definitive ideas for additional children among the population. Thus both in Bangalore city as well as in rural plains, among wives as well as husbands, there is a substantial increase during the period 1951 to 1975 in the proportion of the couples in reproductive ages who do not desire any additional children. This increase is found in every parity group as well as among the wives and husbands. The increase in the number of respondents who desired no more children is found to be relatively higher among the husbands than among the wives.

However, as mentioned earlier, part of this difference could be attributed to differences in the questioning of the pregnant women covered by the two studies. It is necessary to understand the extent of the real differences, excluding artifacts introduced by questioning procedures. Since there was no difference in the questioning procedure for the non-pregnant women, comparison of responses regarding desire for an additional child from non-pregnant women in the two studies can be expected to be more valid than comparison of responses from all women. The differences in the results from the two studies appear to be considerably narrowed down in such a case. Table 19 provides data on the

proportion of wives and husbands who desired to have at least one additional child classified by the reported pregnancy status of the wife at the time of the survey in the two studies. In Bangalore city, the proportion desiring an additional child at the time of the survey has come down from 46 per cent to 32 per cent among all women, 49 percent to 43 percent among women with 1-3 children, from 17 to 9 among women with large family of 4 to 6 living children. Among the husbands interviewed in the city, the proportions have changed from 57 to 38 per cent among all husbands, 64 to 50 amongst those with 1 to 3 living children, and from 22 to 12 among those with 4 to 6 living children. In rural plains the differences in the percentages between the two studies are still narrower for women; from 59 to 55 for all women; a slight increase from 63 to 71 among women with 1 to 3 children, and 33 to 31 among women with 4-6 children. Among the husbands the change is slightly more pronounced; from 73 to 48 among all men, 81 to 67 among men with 1-3 living children and from 35 to 26 among men with 4-6 living children. It would have been more appropriate to compare such proportions for women of husbands classified by the actual number of living children than grouping them as those with 1-3, 4-6 etc. Any changes in the actual distribution of women within each class interval, between the two studies, can add to or mask the real differences. But it can be concluded from this analysis that the desire for additional children has generally declined among men and women of all parities between the two studies, the decline is relatively more among husbands than among wives but not dramatic enough, as could be expected initially, in the context of a strong family planning programme since the sixties.

Table 20 provides the percentage distribution of married women and their husbands who did not desire any additional children by motives. The motives have been classified into three broad groups viz., economic motives, non-economic motives including health and other personal reasons, and others including ill-defined motives. The table reveals that even in 1951 in Bangalore city as well as in rural areas the economic motives were dominant for those who did not desire any additional children. As could be expected economic motive was more prevalent among the husbands than among the wives. Non-economic motives such as the health motives were expressed mostly by the wives. In 1951 not one husband interviewed in the rural area expressed health motive for wishing for no more children. By 1975 there has been a substantial increase in the economic motives as the basis for not desiring any additional children both among the husbands as well as among the wives. For example, in Mysore Population Study, in 1951, 68 percent of the husbands interviewed stated economic motives for not desiring any additional children; in 1975, this proportion has increased to 85 per cent. These data are strongly indicative of increasing economic aspirations of the people and added perception of the linkage between family size and economic well-being. In Bangalore city as well as in rural areas, among husbands, the proportion with the ill-defined motives has declined substantially while, among women, there seems to be an increase in the proportion giving ill-defined motives.

4. Knowledge and Practice of Family Planning

Tables 21-25 provide comparable data from the two studies, on the knowledge of various family limitation methods in Bangalore city and rural plains and the proportion reporting use of various methods. Since the term "family limitation methods" has been used in the Mysore Population Study to indicate both spacing and limitation methods, the same term has been used in this report, Table 21 provides data on the percentage of married women and their husbands reporting knowledge of any family limitation methods in the two studies. In Bangalore city, in 1951 only 37.6 per cent of the women interviewed reported to have knowledge of some method of family planning; by 1975, this proportion has increased to 70.5 per cent. In the rural plains, the proportion with knowledge has increased remarkably from 10.7 per cent in 1951 to 90.5 in 1975 among the married women. Among the husbands interviewed the increase is from 37.8 per cent in 1951 to 80.9 per cent in 1975 in Bangalore City, and from 37.8 per cent in 1951 to 80.9 per cent in 1975 in Bangalore city, and from 14.9 percent in 1951 to 93.2 per cent in the rural plains. This table reveals that, while in 1951 only a small proportion (10 to 15 per cent) of the husbands or wives in the rural plains of the area had any knowledge of family planning methods in 1975 this proportion was over 90 per cent. It is interesting to note that while in 1951 the proportion of couples having knowledge about family planning was higher in Bangalore city than in rural areas, the picture has changed by 1975 with a higher proportion of rural population reporting knowledge of family limitation methods than the urban population. This is possibly because of the fact that mass sterilization camps have been conducted in rural areas in large numbers since 1965 and the sterilization programmes were more well known to the population in the rural areas than in the urban areas. This table reveals the extent of explosion in the knowledge of family planning during the past 24 years, which is a great tribute to the mass educational activities undertaken under the National Family Planning Programme.

Tables 22 - 24 are confined only to Bangalore city. Table 22 presents the percentages of married women and their husbands with knowledge of specified methods of family limitation by age of the respondent, as obtained in the two studies. Among female respondents, while 9.2 per cent of those interviewed in the 1951 study had knowledge of safe period or withdrawal; in the 1975 study, this proportion was found to be 9.0 per cent indicating practically no change in the knowledge of these natural methods. On the other hand, with regard to knowledge of condom, the increase is from 9.0 per cent in 1951 to 63.2 per cent in 1975; with regard to knowledge of vasectomy from 8.6 per cent to 67.3 per cent; with regard to knowledge of tubectomy from 26.2 per cent to 67.8 per cent and with regard to knowledge of other conventional methods of contraception like diaphragm and jelly etc. from 5.8 per cent to 10.8 per cent, There has been really an explosion of knowledge of modern methods of family planning among women without any significant increase in the knowledge of natural methods.

Among the males interviewed in the two studies, a similar picture emerges with much greater increase in the knowledge of the modern methods of family planning. For example, the proportion of husbands reporting knowledge of condoms increased from 10.5 per cent in 1951 to 81.1 per cent in 1975; of vasectomy from 16.9 per cent to 77.3 per cent and of tubectomy from 25.7 per cent to 78.5 per cent. But among males the proportion having knowledge of safe period or withdrawal decreased from 11.4 per cent in 1951 to 4.7 per cent in 1975. Thus both among the females as well as among the males there has been an explosion of awareness and knowledge of various modern methods of family planning. All the age groups seem to have uniformly experienced this knowledge explosion. On the other hand, among husbands there seems to be a decline in the proportion of those having knowledge of safe period or withdrawal suggesting that the traditional methods of abstinence or controlled sexual life as methods of spacing or limitation are disappearing from the population.

Table 23 presents the data from the two studies on knowledge of different methods of family planning among husbands and wives, classified by literacy levels. Among women respondents in 1951, knowledge of safe period or withdrawal method was directly proportional to literacy level. The proportion of women with such knowledge increased from 3.1 per cent among illiterates to 45.5 per cent among those with high school or university education. By 1975 this sharp differential by education has been considerably narrowed down with the proportion of women having knowledge of safe period or withdrawal is 5.5 per cent among illiterates and only 10.8 per cent among high school or college educated women. On the other hand, with regard to the modern methods of contraception such as condoms, vasectomy, tubectomy and other conventional contraceptives, while there were substantial differentials in the proportion having knowledge according to the educational status of the women in 1951, these differentials have been narrowed down considerably (practically wiped out) by 1975 with substantial increase in knowledge in all educational categories. The knowledge differentials among educational categories are lower with regard to sterilization than condoms. The increase in the knowledge of sterilization method among the uneducated is really striking. For example, with regard to vasectomy while only 1.5 per cent of the illiterate women had any knowledge of the method in 1951, by 1975 this proportion has jumped to 62.2 per cent. Similarly, while only 7.8 per cent of the husbands who were illiterate reported knowledge of vasectomy in 1951, this proportion increased to 65.8 per cent by 1975. The sharp differentials in the knowledge of modern methods of family planning which were observed both among the husbands and wives in 1951 are not seen by 1975 and it is a credit to the family planning programme in the country and in the region to have brought awareness and knowledge of modern methods of family planning to illiterate people in rural areas within two decades.

Table 24 presents data on the percentage of husbands of currently married women with knowledge of specified methods of family limitation by occupation of

the husbands in Bangalore city. It can be seen that in all occupational classes the proportion reporting knowledge of safe period or withdrawal has declined during the period 1951 - 1975. For example, among professionals the proportion reporting knowledge of the method was 24.4 per cent in 1951 and this has come down to 8.3 per cent in 1975. On the other hand, the proportion having knowledge of modern methods of contraception, namely, condoms vasectomy and tubectomy has increased significantly in all occupational groups and whatever differentials by occupation were observed in 1951 had been practically removed by 1975. For example, among high and low grade manual workers the proportion having knowledge of condoms increased from 5.6 per cent to 81.7 per cent, of vasectomy from 6.3 to 87.3 per cent, and of tubectomy from 18.2 to 86.6 per cent during the period 1951 - 1975. It is interesting to note that among professional occupational groups even as early as 1951, 34.8 per cent of the husbands interviewed in Bangalore city had knowledge of tubectomy as a method of family limitation, 25.0 per cent had knowledge of vasectomy and 16.8 per cent had knowledge of other methods of contraception.

Tables 25 provides percentage distribution of married women and their husbands reporting use of family limitation methods, in Bangalore city and in rural plains, from the two studies. The proportion of married women who reported to have used any method of contraception was 9.5 per cent in 1951 and this has increased to 31.5 per cent in 1975. Among those in the rural plains, the proportion reported to have used any method has increased from 2.3 per cent in 1951 to 16.7 per cent in 1975. Among the husbands interviewed in Bangalore city, the proportion who ever practised contraception had increased from 5.8 per cent to 34.1 per cent and in rural plains from 0.6 per cent during 1951 to 1975. Analysis by different methods reveals that the proportion who had reported practice of abstinence as a method of family planning has declined almost to a zero level by 1975, as compared to 1951. For example, in Bangalore city while 6.7 per cent of the women had reported practice of abstinence as a method of family planning in 1951, by 1975 this percentage has dropped to 0.3 per cent. On the other hand, the proportion of women in Bangalore city who reported to have used any modern methods of family planning increased from 2.8 per cent in 1951 to 31.2 per cent in 1975.

Table 26 provides, for Bangalore city, an analysis of the reported proportion of husbands and wives using abstinence or other methods of family limitation in 1951 and 1975, classified by different socio-economic variables, i.e., educational level of the wife, educational level of the husband, economic status of the respondent, type of family, age of the wife and age of the husband. The following two observations can be made on this table :

i) There has been a substantial increase in the proportion reporting practice of modern methods of family limitation in all socio-economic and age categories during the 24-year period. However, there are strong differentials in practice by educational status of the wife, persisting even in 1975. For example, while only 0.7 per cent of the illiterate women of Bangalore city had reported use of any method of contraception other than abstinence in 1951, this proportion has increased to 14.0 per cent in 1975. On the other hand, among high school and university educated women, the increase is from 25.4 per cent to 44.4 per cent during the same period. The differentials with regard to the proportion using contraception, by educational status of women, seem to be larger than the differentials with regard to knowledge (Table 13) indicating that use of a family limitation method is related more to socio-economic category of the couple than to knowledge of the method. There has been an increase in the proportions practising contraception among couples living in all occupational categories and type of family and of different age groups. But the increases in the proportions of couples practising contraception are higher among those with wives in older age groups, living in nuclear families and with husbands with higher education.

ii) It is noticed that the proportion practising abstinence as a method of contraception has significantly fallen in every socio-economic group and is practically dying out as a method of contraception. This is indicative of the extent to which modernization has been removing some of the traditional checks on fertility such as abstinence and other natural methods, substantiating the earlier hypothesis that with modernization the traditional checks on fertility will be relaxed and potential fertility of the population will be increased for a temporary period of time.

Chapter IV

SUMMARY AND CONCLUSIONS

The Mysore Population Study conducted in 1951 in the then state of Mysore and the *Bangalore Population Study* conducted in 1975 in Karnataka State under the auspices of the India Population Project have in common a number of attitudinal and behavioural variables relating to fertility and family planning and also have a sizable overlapping geographical area. Comparison of the findings on selected fertility and family planning parameters of the population from the two studies offers a rare opportunity for investigating the type of changes that have taken place in fertility, current well as cumulative, opinions and values regarding family size and knowledge and practice of different methods of family planning in the population of selected areas of Karnataka State over a generation, 1951 to 1975. It is rarely that two large scale sample studies of this magnitude, pertaining population parameters, have been conducted in the same population with a gap of 24 years.

Before providing the relevant results on the basis of the comparison of the data from the two studies, a detailed description of the geographical area covered, sample size, sample design adopted and the nature of questions included in both the studies have been discussed. From such an analysis data with regard to comparable geographical areas are compiled from the two studies and analysed in this monograph. The analysis has been presented only for fertility and related variables, including attitudes to family planning and contraceptive practice, since information on these variables is considered to be more reliable in both the studies. The analysis has been made separately for rural hills, rural plains, towns and Bangalore city, a stratification based on geographical terrain adopted in the *Mysore Population Study*.

A brief analysis of the structural changes in the population during the period 1951 to 1971 as obtained from the two censuses in the area conducted in these two years has been presented. Comparison has been made on salient characteristics of the

population of the area such as the age distribution and growth, literacy rates and composition by religion and caste as obtained from the two censuses. A study of the distributions of the population in these characteristics in the years 1951 and 1971 reveals that there has been very little change in the structural characteristics of the population. With regard to age distribution there is a marginal increase in the proportion of children below 15 years of age during the 20-year period, which is mostly due to the effect of rapid decline in child mortality during the two decades, even in the presence of small decline in fertility. There are virtually no changes with regard to occupational structure and religious composition of the population. The levels of literacy among men as well as women recorded a significant increase during the 20-year period, the proportion literate being significantly higher among men than among women in rural as well as in urban areas. There has been a significant increase in the proportion of population speaking Kannada, the official State language, both in rural areas as well as in Bangalore city.

An analysis of the levels of current fertility in 1951 and 1975, as obtained from the two studies, reveals that the crude birth rate has recorded a decline of 7.6 points in the rural hills, 2.0 points in rural plains, 4.5 points in towns and 2.6 points in Bangalore city over the 24-year period. These declines in fertility are small considering the fact that time lapsed is almost a generation and that the area has been the venue of implementation of intensive programmes of family planning for over a decade 1962-63. The reduction considered in terms of general marital fertility rate is much smaller, of the order of 5 to 6 per cent, indicating that a good portion of even the small reduction in the crude birth rate can be attributed to structural changes in the population, mainly changes in the age distribution.

Computations based on the number of couples protected in 1974-75, by various family planning methods adopted from within programme in the earlier years, and the birth averted by them, indicate that even the programme acceptors would have contributed to a 10 per cent decline in general marital fertility. Thus a paradoxical situation has arisen where the decline in marital fertility actually observed is found to be less than what could be expected on the basis of the performance of the family planning programme. It is possible that the potential fertility rates of married women in the study area have changed, recording an increase, during the period 1951 to 1975, because of relaxation of various social and cultural restrictions of the population, which have directly and indirectly influenced fertility, and also possibly because of improvements in the health status of the population, especially the eradication of malaria from the area. The population of the area has, from time immemorial, been subjected to a number of cultural and social practices which have tended to reduce fertility. For example, the practice of pregnant woman going to her mother's home for delivery and staying there for a number of months after delivery, the practice of

abstinence on a number of days in a month for social or religious reasons, the prolonged breast feeding of children and strong social taboos on widow remarriage have all tended to keep the birth rate low, far below the biological maximum. With modernization, many of these practices are not being observed and the traditional checks on fertility are being removed one by one. Thus the potential fertility of married women seems to have gone up even in the presence of family planning programmes.

This is empirically validated from a comparison of age patterns of marital fertility in 1951 and 1975 as obtained from the two studies. While there has been a considerable reduction in the age specific fertility rates of married women aged above 30. The fertility of married women aged below 30 years has recorded a substantial increase in rural areas as well as in Bangalore city, indicating that the spacing between children has narrowed down during the past two decades and whatever reduction in marital fertility that has been recorded has been achieved mainly through limitation, primarily due to sterilization of couples in the older age groups. Sociological and anthropological studies conducted in the country support the hypothesis that modernization has weakened certain traditional checks on fertility.

An analysis of the average number of children born, number living and survivorship ratios for women in different age groups, based on data from the two studies, indicates that there has been a small increase in the number of children ever born for women in different age groups between 1951 and 1975 and the difference is wider in the case of number of children living because of substantial decline in mortality of children during the period. The survivorship ratios of number of children living to number born have recorded considerable increase during 1951 and 1975. These ratios are analysed by education of the husband and wife as well as by the religious composition of the sample studied.

An analysis is also carried out of the opinions of the married women and their husbands on selected fertility-related variables as obtained from the two studies. The definitional differences in the concepts of ideal family size and desired number of children, as used in the two studies, have caused some difficulties in the interpretation of the data. However, the findings suggest that there has been a decline in the number of children desired by the couple over the 24-year period but the decline does not appear to be as high as one would have expected over a generation. Analysis of the responses by motives for not desiring additional children indicates that the economic motives, have become increasingly preponderant in the population and non-economic motives, such as health reasons, were expressed mostly by wives in 1975.

A study of the knowledge and practice of various methods of family planning in 1951 and 1975 indicates that there has been a marked increase in the proportion of

couples having knowledge of modern methods of family planning such as sterilisation condoms, IUD, etc.. For example, among the married women in the rural plains, the proportion having knowledge of one or more modern methods of family planning has increased from 10.7 per cent in 1951 to 90.5 per cent in 1975. Similarly, there has been an increase, though not of the same magnitude, in the proportion of couples practising modern methods of family planning. On the other hand, the proportion of couples having knowledge of or practising natural methods of family planning has decreased markedly during this period. For example, among professionals, the proportion reporting knowledge of safe period as a method of family planning in Bangalore city was 24.4 per cent in 1951 and this has come down to 8.3 per cent in 1975. Such differentials are analysed for different educational-occupational groups and also by rural and urban areas separately.

The study suggests a plausible reason for the tardy decline in the birth rate of the area over the past 24 years. It indicates the possibility of the birth rate continuing at the present level of 35 per mille for some more years or declining only very slowly because of the tendency of the potential fertility of married women to increase as a consequence of modernization, liberalizing some of the age-old social and cultural checks on fertility. In the absence of a strong family planning programme to compensate for and counteract the fertility increasing effects of modernization, it is likely that the birth rate in the area may even go up in the near future. The family planning programme has to meet the twin challenges. One is that it should meet the needs of those who wish to substitute traditional methods of family planning by modern methods without any change in the desired family size. The other is that it should meet the needs of those who wish to have a family size smaller than the one prescribed by social norms. Unless both the objectives are met simultaneously, it may not be possible to achieve a substantial reduction in the birth rate. Such phenomenon seems to be unique to countries which, for a long time in the past, have had strong social and cultural checks on fertility, either intentionally or unintentionally. The present study reveals that the Western experience of a continuous, smooth and steady decline in the birth rate need not be reproduced in such developing countries, and the assumption usually made in demographic circles that once the birth rate starts on its downward slope, the trend will continue unabated, may not be valid for all the developing nations.

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TABLE 1 : Comparable Areas Covered by MPS (1951) and BPS (1975)

Areas	Districts included in the MPS	Comparable areas included in BPS
Zone I - Rural hills (villages with large scale anti-malaria operations)	Parts of Chikmagalur, Hassan and Shimoga	} Shimoga rural
Zone II - Rural hills (villages without large scale anti-malaria operations)	Parts of Hassan, Chikmagalur, Shimoga and Mysore	
Zone III - Rural plains (tank irrigated areas)	Bangalore, Kolar, Tumkur and parts of Hassan and Mandya	Bangalore rural, Kolar Rural Tumkur rural
Zone IV & V - Rural plains (canal irrigated areas)	Parts of Mysore and Mandya	No comparable area
Zone VI - Rural plains (dry farming areas)	Chitradurga, parts of Hassan, Chikmagalur and Shimoga	Chitradurga rural
Towns - Population size 10,000 to 25,000	Chitradurga Town, Kolar Town Shimoga Town, Tumkur Town
Bangalore city	Bangalore city

TABLE 2: Details of Sampling in MPS (1951)

Areas	Number of villages/ blocks	Number of villages/ blocks included in the sample	Number of households listed ^e	Number of households selected in the sample ^e	Number of households studied ^e	Currently married women aged 18-33 selected for fertility and attitude survey ^f	Number of currently married wo- men aged 18-33 for whom fer- tility and attitude sc- hedules we- re filled in ^f	Number of husbands of currently married wo- men aged 18-33 for whom att- itude sche- dules were filled in ^f
Zone I -Rural hills	3536 ^a	115 ^c	4403	1142	1137	—	—	—
Zone II - Rural hills			5628	1577	1571	—	—	—
Zone III-Rural plains	8851 ^a	76 ^c	7179	2224	2202	484	392	323
Zone IV & V- Rural plains	1138 ^a	No sampling	—	—	—	—	—	—
Zone VI-Rural plains	2799 ^a	No sampling	—	—	—	—	—	—
Towns – population size 10,000 to 25,000	394 ^b	66 ^d	7599	1290	1274	—	—	—
Bangalore city	932 ^b /	192 ^d	27762	4591	4479	1516	1011	793
TOTAL	—	—	52571	10824	10663	2000	1403	1116

Source : a U N., Mysore Population Study, 1961, Table 1.5, p. 14.

b *Ibid*, Table 2.4, p. 24

c *Ibid*, Table 2.2, p. 23

d *Ibid*, Table 2.1, p. 22

e *Ibid*, Table 2.5, p. 25, households include common and special households.

f *Ibid*, Table 5.2, p. 41

TABLE 3 ; Details of Sampling in BPS (1975)

Rural / Districts/ Towns / City	Number of villages/ blocks	Number of villages/ blocks included in the sample	Number of households listed	Number of households selected	Number of households studied	Number of fertility schedules filled in for ever married women aged 15-49	Number of currently married women aged 15-44 interviewed for attitudinal survey in 50 % of selected households	Number of husbands of currently married women aged 15-44 interviewed for attitudinal survey in the other 50% of households	Weights adopted for pooling the areas according to 1971 census population
Shimoga Rural	1,741 ^a	12	2,449	400	398	353	1,337	1,317	1,041,993
Bangalore Rural	2,470 ^a	12	1,874	400	399	380			1,519,711
Kolar Rural	2,828 ^a	24	2,507	1,000	997	972			1,227,614
Tumkur Rural	2,452 ^a	12	1,918	400	397	395			1,475,739
Chitradurga Rural	1,250 ^a	24	4,981	1,000	999	910			1,157,923
Chitradurga Town	110 ^b	9	1,000	250	243	185	394	328	50,254
Kolar Town	85 ^b	9	1,311	250	250	221			43,418
Shimoga Town	174 ^b	9	1,400	250	243	215			102,709
Tumkur Town	128 ^b	9	914	250	250	231			70,476
Bangalore City	2,956 ^b	36	4,132	1,000	966	860			414
TOTAL	—	—	22,486	5,200	5,142	4,722	2,145	2,043	8,343,616

Sources : ^a Census of India, General Population Table, Mysore. Table A.III, p: 140

^b Government of India, National Sample Survey, Bangalore (unpublished data).

TABLE 4 : Type of Respondents and Interviewers in MPS (1951) and BPS (1975)

Type of Schedule	MPS (1951)		BPS (1975)	
	Interviewer	Respondent	Interviewer	Respondent
Household Schedule	Male ^a	Responsible adult member of the house ^b hold preferably the Head of the household	Male	Head of the household, in case head of the household is not available, then any elderly member of the household who is informative.
Fertility Schedule (part of fertility and attitude schedule)	Female	Respondent is currently married woman ^c with the following characteristics : i) She should be a resident of the area and should be married at the time of survey. ii) She and her husband must have married once only. iii) She should have reached 18 years but not 34 years of age at the time of survey iv) She should have married at least three years prior to the survey	Female	Ever married women in the age group 15-49 who is the usual resident of the household.
Attitude Schedule (part of fertility and attitude schedule)	Female	All women selected for fertility ^d schedule	Female	In 50 per cent of the households currently married women in the age group 15-44 (residential status being usual place of residence).
	Male	Husbands of all women selected ^d for fertility schedule	Male	In the other 50 per cent of households husbands of currently married women in the age group 15-44 (residential status being usual place of residence)

Source : ^a U.N., Mysore Population Study, 1961, p. 39 to 41

^b *Ibid*, p. 366

^c *Ibid*, pp. 39 to 41 and 391

^d *Ibid*, pp. 39 to 41

TABLE 5: Distribution of Population by Age and Sex in Rural Plains and Bangalore City, 1951 and 1971

Age	1951			1971			Growth rate during 1951-71		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Rural Plains									
0-14	619,629 (39.0)	633,938 (41.7)	1,253,567 (40.3)	856,357 (40.5)	878,518 (43.3)	1,734,875 (41.9)	1.91 (1.63)	1.93 (1.64)	1.92 (1.64)
15-24	302,513 (19.1)	291,088 (19.1)	593,601 (19.1)	345,231 (16.4)	313,181 (15.5)	658,412 (15.9)	0.71 (0.66)	0.38 (0.37)	0.55 (0.52)
25 +	664,863 (41.9)	597,249 (39.2)	1,262,112 (40.6)	911,553 (43.1)	835,566 (41.2)	1,747,119 (42.2)	1.85 (1.59)	1.99 (1.69)	1.92 (1.64)
Total	1,587,005 (100.0)	1,522,275 (100.0)	3,109,280 (100.0)	2,113,141 (100.0)	2,027,265 (100.0)	4,140,406 (100.0)	1.66 (1.44)	1.66 (1.44)	1.66 (1.44)
Bangalore City									
0-14	135,828 (32.8)	134,682 (36.9)	270,510 (34.7)	292,287 (35.6)	285,129 (39.6)	577,416 (37.5)	5.76 (3.91)	5.58 (3.82)	5.67 (3.86)
15-24	97,970 (23.7)	84,017 (23.0)	181,987 (23.4)	178,876 (21.8)	157,416 (21.9)	336,292 (21.8)	4.12 (3.06)	4.37 (3.19)	4.24 (3.12)
25 +	179,889 (43.5)	146,591 (40.0)	326,480 (41.9)	349,499 (42.6)	277,534 (38.5)	627,033 (40.7)	4.71 (3.38)	4.46 (3.24)	4.60 (3.32)
Total	413,687 (100.0)	365,290 (100.0)	778,977 (100.0)	820,662 (100.0)	720,079 (100.0)	1,540,741 (100.0)	4.92 (3.48)	4.86 (3.45)	4.87 (3.47)

Source : Census of India, Mysore, 1951 and 1971.

Note : Figures in the parentheses are percentage distributions. Geometric growth rates are presented along with arithmetic growth rates in parentheses. For 1951 census the age distribution depends upon 10 per cent sample. Ages not stated have been prorated. Rural plains are combined rural areas of Bangalore, Kolar and Tumkur districts.

TABLE 6 : Proportion of Workers by Sector in Rural Plains and Banalore City ,
1951 and 71

Sector	Rural Plains		Bangalore City	
	1951	1971	1951	1971
Primary Sector	86.5	87.6	1.6	1.8
Secondary Sector	4.5	4.9	32.1	35.1
Tertiary Sector	9.0	7.5	66.3	63.1
Total	100.0	100.0	100.0	100.0

Source : Census of India, Mysore, 1951 and 1971

Note : The following categories of industrial classification of
occupation are pooled to get sector-wise workers.

1951	1971
Primary : Cultivation of land - a, b, and c categories and Non-cultivation (Ag)- rent receiving and other dependents	Cultivators ; Agriculture labourers ; Live Stock, Forest, Hunting, Fishing and others and Mining and Quarrying
Secondary: Production other than cultivation	Household Industry and other than Houshold Industry.
Tertiary : Commerce ; Transport and others.	Construction; Trade and Commerce; Transport and Commication and other services.

Rural plains are combined rural areas of Bangalore, Kolar and Tumkur districts.

TABLE 7 ; Literacy Rate by Sex in Rural Plains and Bangalore City.
1951 and 1971

Sex	Rural Plains		Bangalore City	
	1951	1971	1951	1971
Male	22.6	34.1	53.6	65.7
Female	4.6	13.4	31.1	51.3
Total	13.8	24.0	43.1	59.0

Source : Census of India, Mysore, 1951 and 1971

Note : Rural plains are combined rural areas of Bangalore, Kolar and Tumkur districts.

TABLE 8 : Proportion of Population by Religion/Caste in Rural Plains
and Bangalore City, 1951 and 1971

Religion/Caste	Rural Plains		Bangalore City	
	1951	1971	1951	1971
Hindu	93.5	94.2	73.9	77.0
Scheduled Caste	21.2	20.7	11.6	9.7
Scheduled Tribe	0.1	0.2	N E	0.2
Other Hindu Castes	72.2	73.3	62.2	67.1
Muslim	5.6	5.2	16.5	14.8
Christian	0.7	0.5	8.9	7.1
Other Religions	0.2	0.1	0.8	1.1

Source : Census of India, Mysore, 1951 and 1971

Note : Rural plains are the rural areas of Bangalore,
Kolar and Tumkur districts.

N E : Negligible.

TABLE 9 : Selected Indices of Fertility by Geographical Zones in the Two Studies

	Rural hills		Rural plains		Towns		Bangalore City		
	MPS	BPS	MPS	BPS	MPS	BPS	MPS	BPS	
GBR	Unweighted	—	37.0	—	37.4	—	34.8	—	28.4
	Weighted	44.6	37.0	39.9	37.9	39.8	35.3	33.0	30.4
	Standardized rate	—	38.1	—	36.4	—	31.6	—	28.1
GFR	205	168	199	180	194	156	144	133	
GEMFR	222	237	209	206	220	226	178	183	
GMFR	264	252	237	223	251	242	199	192	
ASMFR									
15-19	282	448	277	282	231	381	297	290	
20-24	337	364	293	295	310	371	253	351	
25-29	317	234	302	286	273	314	201	229	
30-34	232	299	170	179	263	165	174	134	
35-39	163	179	157	142	201	101	88	61	
40-44	57	75	61	39	73	44	36	12	

Source : U. N., Mysore Population Study, 1961, Tables 8.8 and 8.9, pp. 83-83.

Note : The rates for Rural hills are presented by pooling zone I and II in MPS. Age distributions from the respective areas were taken as standard from Mysore Population Study (Table 8.2, p. 79) while calculating the standardized rates.

TABLE 10: Selected Indices of Fertility by Occupational Groups in Rural Zone in the Two Studies

Economic Status of household	Persons in the Sample		C. B. R.		G F R		G E M F R		G M F R	
	MPS	BPS	MPS	BPS	MPS	BPS	MPS	BPS	MPS	BPS
1. Labourers or Temporary Tenants	3,688	3,396	91	120	84	114	84	110	90	119
2. Other Agricultural Occupations	12,788	11,603	101	97	104	98	104	99	100	96
3. Non-Agricultural Occupation	4,500	2,369	91	96	94	94	94	95	93	94
4. All Occupations	23,314	19,068	100	100	100	100	100	100	100	100

Source : U.N., Mysore Population Study 1961, Table 8.12, p.86

Note : "All Occupations" include persons not classified by economic status of household in both MPS. & BPS. For MPS, it is economic status of household whereas in BPS it is the occupation of the head of the household. Rural Zone includes Rural plains and Rural hills in MPS and all rural areas and five districts in BPS

TABLE II : Un-corrected and Corrected Birth Rates, Death Rates and Correction Factors in MPS

	Estimated B. R.	Correction factor	Corrected B. R.	Estimated D. R.	Correction factor	Corrected D. R.
Zone I	40.4	1.09890	44.4	13.3	1.12360	15.1
Zone II	41.6	1.07527	44.7	15.7	1.20482	18.9
Zone III	37.5	1.06383	39.9	17.6	1.06383	18.6
Towns	36.2	1.07527- 1.09890	38.9- 39.8	12.4	1.11111- 1.92958 ^a	13.8- 23.9
Bangalore City	30.0	1.09890	33.0	8.1	b	13.7

Source : U.N., Mysore Population Study, 1961, Table 16.3, p. 225 and Table 8.1, p. 78

Note : a) The correction factor was calculated on the basis of death rate of 7.1 per 1000 population irrespective of residential status of population in Bangalore City. It was assumed that correction factors for Towns to be in between Rural Zones (average correction factor) and Bangalore City. So the range of correction factor and rates were provided in the study for Towns.

b) For Bangalore City no correction factor was applied, rather the death rate was calculated for the year 1951 from civil registration data for the corporation area of Bangalore city and presented in the study.

TABLE 12 : Mean Number of Children Born Per Ever Married Woman by Age and by Geographical Zones in the Two Studies

Age	Rural hills		Rural plains		Towns		Bangalore City	
	MPS	BPS	MPS	BPS	MPS	BPS	MPS	BPS
15-24	1.2	1.4 (99)	1.3	1.3 (726)	1.3	1.3 (288)	1.3	1.4 (276)
25-34	3.5	4.1 (145)	3.6	3.9 (728)	3.6	3.4 (394)	3.2	3.4 (384)
35-44	4.7	6.0 (131)	1.5	5.5 (473)	5.6	5.6 (247)	4.9	5.2 (258)
45 +	4.8	6.3 (95)	4.9	5.2 (594)	5.6	5.9 (224)	5.3	5.7 (200)

45

Source : U. N., Mysore Population Study, 1961, Table 10.1, p. 112.

Note : The rates for Rural hills are presented by pooling Zone I and II in MPS. Figures in parentheses indicate number of ever married women in BPS

TABLE 13 : Mean Number of Living Children Per Ever Married Woman by Age and by Geographical Zones in the Two Studies

Age	Rural hills		Rural Plains		Towns		Bangalore City	
	MPS	BPS	MPS	BPS	MPS	BPS	MPS	BPS
15 - 24	0.9	1.3 (99)	1.0	1.1 (726)	1.0	1.1 (289)	1.0	1.3 (277)
25 - 34	2.3	3.5 (145)	2.6	3.1 (728)	2.7	2.8 (394)	2.4	2.9 (384)
35 - 44	3.2	5.0 (131)	3.5	4.2 (473)	3.9	4.6 (248)	3.6	4.5 (258)
45 +	2.6	4.7 (95)	3.0	3.7 (600)	3.4	4.8 (225)	3.5	4.5 (200)

Source : U. N., Mysore Population Study, 1961, Table 10.2, p. 113

Note : The rates for Rural hills are presented by pooling zone I and II in MPS.

Figures in parentheses indicate number of ever married women in BPS.

Table 14: Survivalship Ratios of Children Born to Children Living by Age of Mother and by Geographical Zones in the Two Studies

Age	Rural_hills		Rural plains		Towns		Bangalore City	
	MPS	BPS	MPS	BPS	MPS	BPS	MPS	BPS
15 - 24	75.0	92.9	76.9	84.6	76.9	84.6	76.9	92.9
25 - 34	65.7	85.4	72.2	79.5	75.0	82.4	75.0	85.3
35 - 44	68.1	83.3	68.6	76.4	69.6	82.1	73.5	86.5
45+	54.2	74.6	61.2	71.2	60.7	81.4	66.0	78.9

Note : Survivalship ratio is defined as number of living children per 100 live births.

This Table is derived from Table 12 and 13

TABLE 15 : Mean Number of Children Born Per Ever Married Women in Different Religion/Caste Groups by Geographical Zones in the Two Studies

Religion/Caste	All	Rural	Towns		Bangalore City	
	MPS	BPS	MPS	BPS	MPS	BPS
Hindu	3.2	3.8 ^a (2882)	3.3	3.5 (627)	3.0	3.4 ^a (712)
Scheduled Caste	3.2	3.7 (450)	2.8	3.5 (64)	3.1	3.7 (73)
Backward Caste	3.0	3.9 (1080)	2.9	3.5 (281)	3.1	3.5 (324)
Other Castes	3.2	3.8 (1351)	3.6	3.5 (282)	3.1	3.3 (314)
Muslim	5.6	5.1 (132)	4.0	4.6 (182)	3.4	4.3 (139)
Christian	3.4	*	3.3	*	3.4	3.4 (49)

Source : U.N., Mysore Population Study, 1961, Table 10.9, p. 120 (estimated for ever married women aged 15-49)

Note : "All Rural" includes Rural hills and Rural plains in MPS and all rural areas of five districts in BPS. Figures in parentheses indicate number of ever married women in BPS.

For one woman caste is not known.

When cell frequency is less than 30, rate is not computed.

TABLE 16 : Opinions of Married Women and Their Husbands Concerning the Number of Children Which Make An Ideal-size Family for Bangalore City and All Rural

	Women's opinion				Husbands' opinion			
	Number responding		Mean Number stated		Number responding		Mean Number stated	
	MPS	BPS	MPS	BPS	MPS	BPS	MPS	BPS
Bangalore City	958	248	3.7	3.7	759	225	4.1	3.7
All Rural	362	721	4.7	4.2	311	752	4.6	4.2

Source : U.N., Mysore Population Study, 1961, Table 11.11. p. 140.

Note : "All Rural" includes Rural plains in MPS and all rural areas of five districts in BPS. In MPS, the data are tabulated for currently married women in the age group 18-33 and their husbands. Whereas in BPS, the data are tabulated for currently married women in the age group 15-44 and their husbands.

TBALE 17 : Opinions of Married Women and Their Husbands Concerning the Number of Children Which Make an Ideal-Size Family According to Social and Economic Characteristics for Bangalore City

	Women's opinion				Husbands' opinion			
	Number responding		Mean Number stated		Number responding		Mean Number stated	
	MPS	BPS	MPS	BPS	MPS	BPS	MPS	BPS
a. Educational level of women :								
Illiterate	498	91	3.8	4.2	397	-	4.3	-
Literate	201	25	3.6	*	153	-	4.3	-
Middle School	194	115	3.7	3.4	155	-	3.7	-
High School or University	65	16	3.2	*	54	-	3.2	-
Total	958	248 ^a	3.7	3.7	759	-	4.1	-
b. Educational level of husbands :								
Illiterate	242	-	3.8	-	193	45	4.5	4.5
Literate	222	-	3.7	-	175	23	4.3	*
Middle School	218	-	3.6	-	169	36	4.0	4.0
High School	173	-	3.7	-	140	81	3.9	3.2
University	100	-	3.5	-	82	39	3.4	2.9
c. Economic status of persons :								
High and low grade managerial workers and government officials	390	-	3.6	-	309	84	3.9	3.5
Other non-agricultural occupations	536	-	3.7	-	427	127	4.2	3.8
d. Religion :								
Hindu	847	194	3.7	3.7	676	174	4.1	3.5
Muslim	111	36	3.8	4.3	83	37	4.2	4.4

Source : U. N., Mysore Population Study, 1961, Table 11.12, p. 141

Note : In MPS, the data are tabulated for currently married women in the age group 18-33 and their husbands. Where in BPS, the data are tabulated for currently married women in the age group 15-44 and their husbands.

^a For one woman educational status is not known.

* When cell frequency is less than 30, rate is not computed.

TABLE : 18 Responses of Married Women and Their Husbands to the Question "Do you desire more children" or its Equivalents by Number of Living Children for Bangalore City and All Rural.

	Responses of women								Responses of husbands							
	Number responding		Per cent				No		Number responding		Per cent				No	
	MPS	BPS	Yes		Indifferent		MPS	BPS	MPS	BPS	Yes		Indifferent		MPS	BPS
			MPS	BPS	MPS	BPS					MPS	BPS	MPS	BPS		
Bangalore City :																
Total	994	256	48	36	9	0	43	64	778	217	62	40	10	0	28	60
No Children	156	15	74	*	16	*	10	*	128	15	79	*	16	*	5	*
1-3 Children	641	158	52	46	6	0	42	54	486	130	68	49	7	0	25	51
4-6 Children	188	71	17	8	11	0	72	92	154	61	32	13	12	0	56	87
7-9 children	9	12	b	*	b	*	b	*	10	11	b	*	b	*	b	*
All Rural :																
Total	389	884	61	54	8	c	31	46	306	825	76	49	4	c	20	51
No children	50	39	92	95	6	0	2	5	41	38	93	92	5	0	2	8
1-3 children	256	516	65	68	9	c	26	32	205	446	83	64	3	c	14	36
4-6 children	78	263	33	29	8	c	59	71	56	280	45	26	7	c	48	74
7-9 children	5	66	b	17	b	l	b	82	4	61	b	11	b	5	b	84

Source : U. N., Mysore Population Study, 1961, Table 11.14, p. 142

Note: "All Rural" includes Rural Plains in MPS and all rural areas of five districts in BPS. In MPS, the data are tabulated for currently married women in the age group 18—33 and their husbands. Whereas in BPS the data are tabulated for currently married women in the age group 15—44 and their husbands.

b: Percentages are not shown because of small number of respondents

c: Percentages negligible

*: When cell frequency is less than 30, percentage is not computed.

TABLE 19 : Percentage of Married Women and Their Hnsbands Desiring to Have More Children According to whether the Wife was Pregnant or Not at the time of the Survey for Bangalore City and All Rural.

	Bangalore City								All Rural							
	Women Respondents				Responses of Husbands				Women Respondents				Responses of Husbands			
	Number responding		Percentage desiring		Number responding		Percentage desiring		Number responding		Percentage desiring		Number responding		Percentage desiring	
	MPS	BPS	MPS	BPS	MPS	BPS	MPS	BPS	MPS	BPS	MPS	BPS	MPS	BPS	MPS	BPS
Pregnant																
Total	188	22	58	*	153	41	84	49	81	127	68	45	56	137	89	51
No children	23	6	91	*	24	10	96	*	12	17	92	*	6	19	b	*
1-3 children	128	14	63	*	96	21	85	*	55	72	70	50	37	84	92	51
4-6 children	35	2	20	*	32	9	69	*	14	34	36	18	13	30	77	27
7-9 children	2	-	b	*	1	1	b	*	-	4	-	*	-	4	-	*
Total																
Not Pregnant	806	234	46	32	625	176	57	38	308	757	52	55	250	688	73	48
No children	133	9	72	*	104	5	75	*	38	22	92	*	35	19	91	*
1-3 children	513	144	49	43	390	109	64	50	201	444	63	71	168	362	81	67
4-6 children	153	69	17	9	122	52	22	12	64	229	33	31	43	250	35	26
7-9 children	7	12	b	*	9	10	b	*	5	62	b	18	4	57	b	9

Source : U.N., Mysore Population Study, 1961, Table 11.16, p. 145

Note : "All Rural" includes Rural Plains in MPS and all rural areas of five districts in BPS. In MPS, the data are tabulated for currently married women in the age group 18—33 and their husbands. Whereas in BPS, the data are tabulated for currently married women in the age group 15—44 and their husbands.

b : Percentage not shown because of small number of respondents.

* : When the cell frequency is less than 30, percentages is not computed.

TABLE 20 : Percentage Distribution by Most Important Motive for not Desiring More Children, for Married Women and Husbands Who had at least One Living Child and Desired No More in Bangalore City and All Rural.

Most important motive for not desiring more children	Bangalore City				All Rural			
	Responses of women		Responses of husband		Responses of women		Responses of husband	
	MPS	BPS	MPS	BPS	MPS	BPS	MPS	BRS
Number of respondents	414	167	215	132	118	405	59	418
Economic motives	59	78	68	86	48	65	58	74
Non-economic motives	28	2	9	-	32	4	-	1
Other and ill-defined motives	14	20	23	14	20	31	42	25

Source : U. N., Mysore Population Study, 1961, Table 11.24, p. 153

Note : "All Rural" includes Rural Plains in MPS and all rural areas of five districts in BPS. In MPS, the data are tabulated for currently married women in the age group 18-33 and their husbands. Whereas in BPS, the data are tabulated for currently married women in the age group 15-44 and their husbands.

TABLE 21: Percentage of Married Women and Their Husbands Reporting Any Knowledge of Family Limitation Methods in Bangalore City and All Rural.

	Respondents		Percentage with knowledge	
	MPS	BPS	MPS	BPS
Women				
Bangalore City	1002	400	37.6	70.5
All Rural	392	1334	10.7	90.5
Husbands				
Bangalore City	791	387	37.8	80.9
All Rural	323	1314	14.9	93.2

Source : U.N., Mysore Population Study, 1961, Table, 12.1, p. 161

Note : "All Rural" includes Rural plains in MPS and all rural areas of five districts in BPS. In MPS, the data are tabulated for currently married women in the age group 18—33 and their husbands. Whereas in BPS, the data are tabulated for currently married women in the age group 15—44 and their husbands.

TABLE 22 : Percentage of Married Women and Their Husbands With Knowledge of Specified Methods of Family Limitation by Age for Bangalore City.

Age	Number of Respondents		Safe period or Withdrawal		Condom		Sterilization of husband		Sterilization of Wife		Other C.C.	
	MPS	BPS	MPS	BPS	MPS	BPS	MPS	BPS	MPS	BPS	MPS	BPS
Women												
All Ages	1002	255	9.2	8.0	9.0	63.2	8.6	67.3	26.2	67.8	5.8	10.8
15-24	417	92	5.5	8.7	5.5	56.5	5.0	59.3	19.4	60.9	2.4	9.8
25-29	413	99	11.4	10.8	10.4	73.4	10.4	74.2	27.1	72.7	7.5	12.9
30-34	172	64	11.0	3.1	12.8	57.8	11.6	68.8	36.0	70.3	9.3	9.4
Husbands												
All ages	791	386	11.4	4.7	10.5	81.1	16.9	77.3	25.7	78.5	9.1	4.7
20-29	162	68	8.6	2.9	7.4	75.0	6.8	67.7	22.8	67.7	5.6	0.0
30-39	467	132	10.7	3.9	11.6	87.9	15.0	80.6	25.3	82.2	10.1	7.8
40+	162	186	16.0	6.0	10.5	78.5	20.4	78.6	29.6	79.9	9.9	4.4

Source : U. N., Mysore Population Study, 1961, Table 12.4, p. 163

Note : In MPS, the data are tabulated for currently married women in the age group 18-33 and their husbands. Whereas in BPS, the data are tabulated for currently married women in the age group 15-44 and their husbands. In MPS the age groups are not exact as given in BPS, but they are very close.

TABLE 23 : Percentage of Married Women and Their Husbands With Knowledge of Specified Methods of Family Limitation by Educational Levels for Bangalore City

Educational Levels	Number of Respondents		Safe period or Withdrawal		Condom		Sterilization of Husband		Sterilization of Wife		Other C.C.	
	MPS	BPS	MPS	BPS	MPS	BPS	MPS	BPS	MPS	BPS	MPS	BPS
Women												
All Levels	1002	398	9.2	6.9	9.0	59.8	8.6	68.2	26.2	70.6	5.8	9.4
Illiterate	524	151	3.1	5.4	1.9	42.2	1.5	62.2	15.7	66.2	1.5	6.8
Literate (Primary)	211	48	7.5	2.1	9.0	56.3	5.7	68.8	26.5	72.9	4.3	6.3
Middle School	201	79	13.4	6.4	14.9	69.2	16.4	71.8	39.8	70.9	7.5	10.3
High School or University	66	120	45.5	10.8	43.9	76.0	48.5	73.1	69.7	75.0	42.4	13.3
Husbands												
All Levels	791	383	11.4	4.8	10.5	81.2	16.9	77.5	25.7	78.9	9.1	4.8
Illiterate	204	77	1.0	1.3	3.4	79.2	7.8	65.8	19.6	65.8	2.9	0.0
Literate (Primary)	183	36	2.7	0.0	2.7	63.9	6.0	75.0	17.5	75.0	1.6	0.0
Middle School	178	66	4.5	1.5	7.3	87.9	9.6	77.3	21.9	78.8	3.9	1.5
High School	143	137	22.4	4.5	18.9	78.8	19.6	82.7	32.2	82.7	14.7	5.2
University	83	67	51.8	15.4	37.3	91.0	50.6	81.8	55.4	88.2	42.2	15.4

Source : U. N., Mysore Population Study, 1961, Table 12.5 p.163

Note : In MPS, the data are tabulated for currently married women in the age group 18—33 and their husbands. Whereas in BPS, the data are tabulated for currently married women in the age group 15—44 and their husbands.

TABLE 24: Percentage of Husbands of Currently Married Women With Knowledge of Specified Methods of Family Limitation by Occupation for Bangalore City

Occupation of Husbands	Number of Respondents		Safe period or Withdrawal		Condom		Sterilization of Husband		Sterilization of Wife		Other C.C.	
	MPS	BPS	MPS	BPS	MPS	BPS	MPS	BPS	MPS	BPS	MPS	BPS
All Classes	791	387	11.4	4.7	10.5	80.9	16.9	77.1	25.7	78.5	9.1	4.7
Professional occupations	316	199	22.4	8.3	17.4	78.4	25.0	70.8	34.8	73.9	16.8	7.2
High and low grade manual workers	395	142	3.8	0.7	5.6	81.7	6.3	87.3	18.2	86.6	3.8	2.1
Domestic and other service workers	57	18	-	*	3.5	*	8.8	*	22.8	*	1.8	

Source : U. N., Mysore Population Study, 1961, Table 12.8, p. 163

Note : In MPS, the data are tabulated for currently married women in the age group 18-33 and their husbands. Whereas in BPS, the data are tabulated for currently married women in the age group 15-44 and their husbands

* When the cell frequency is less than 30, rate is not computed

TABLE 25: Percentage of Currently Married Women and Their Husbands Reporting Use of Family Limitation Methods in Bangalore City and All Rural

	Respondents		Reporting use of any method		Reporting use of abstinence only		Reporting use of any other method		Reporting no use of any method	
	MPS	BPS	MPS	BPS	MPS ^a	BPS ^b	MPS	BPS	MPS	BPS
Women										
Bangalore City	1011	400	9.5	31.5	6.7	0.3	2.8	31.2	89.6	68.5
All Rural	392	1334	2.3	16.7	2.3	0.3	-	16.4	97.7	83.3
Husbands										
Bangalore City	793	397	5.8	34.1	3.2	0.8	2.6	33.3	93.9	65.9
All Rural	323	1314	0.6	20.3	0.6	0.7	-	19.6	99.4	79.7

Source: U. N., Mysore Population Study, 1961, Table 12-10, p. 167

Note : "All Rural" includes Rural plains in MPS and all rural areas of five districts in BPS. In MPS, the data are tabulated for currently married women in the age group 18-33 and their husbands. Whereas in BPS, the data are tabulated for currently married women in the age group 15-44 and their husbands.

^a : Includes abstinence only.

^b : Includes abstinence and withdrawal also.

TABLE 26: Percentage of Couples Practising Family Limitation Methods According to Social and Economic Characteristics for Bangalore City

Characteristics	Respondents		Reporting use of any method		Reporting use of abstinence only		Reporting use of any other method		Reporting use of no method	
	MPS	BPS	MPS	BPS	MPS	BPS	MPS	BPS	MPS	BPS
1	2	3	4	5	6	7	8	9	10	11
a. Educational level of wife										
Illiterate	419	151	4.5	14.7	3.8	0.7	0.7	14.0	95.5	85.3
Literate	158	48	11.4	25.1	8.9	0.0	2.5	25.1	88.6	74.9
Middle school	161	79	20.5	48.4	13.7	0.0	6.8	48.4	79.6	51.6
High school and University	55	120	50.9	44.4	25.5	0.0	25.4	44.4	49.1	55.6
All classes	793	398	12.4	31.7	8.4	0.3	4.0	31.4	87.6	68.3
b. Educational level of husband										
Illiterate	205	76	5.4	13.1	4.9	0.0	0.5	13.1	94.6	86.9
Literate	184	36	6.0	33.3	4.9	0.0	1.1	33.3	94.0	66.7
Middle school	178	66	7.3	41.5	6.2	1.5	1.1	40.0	92.7	58.5
High school	143	137	16.8	29.1	14.0	0.0	2.8	29.1	83.2	70.9
University	83	67	47.0	59.9	19.3	3.1	27.7	56.8	53.0	40.4

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Contd

Table 26 (Contd.)

1	2	3	4	5	6	7	8	9	10	11
c. Economic status of person.										
High and low grade professional and managerial workers	316	147	20.6	32.3	12.4	1.4	8.2	30.9	79.4	67.7
High and low grade manual workers	396	193	6.8	36.0	5.6	0.5	1.2	35.5	93.2	64.0
Domestic and other service occupation (N.E. C.)	81	18	7.4	*	6.2	*	1.2	*	92.6	*
d. Type of family.										
Living with husband's parents or grand parents	308	123	13.0	28.8	8.8	0.8	4.2	28.0	87.0	71.2
Living with husband's siblings and/or other spouses.	63	22	6.4	*	4.8	*	1.6	*	93.6	*
Living with other relatives or living with no relatives except children.	415	241	13.0	37.4	8.7	0.8	4.4	36.6	87.0	62.6