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Madhya Pradesh is one of those States of India where fertility levels continue to be amongst the highest in the country. According to the Sample Registration System, the crude birth rate in the State has been estimated to be 30.4 live births per 1000 population for the year 2002 which is well above the national average of 25.0 (Government of India 2004). Madhya Pradesh has the fourth highest birth rate - next only to Uttar Pradesh, Bihar and Rajasthan - amongst the major States of India, States having more than 20 million population at the 2001 population census. Similarly, the total fertility rate in the State has been estimated to be 4.0 births per woman for the year 1998, which is also the fourth highest amongst the major States of the country (Government of India 2003). Information available through the National Family Health Survey, 1998-99 also indicates persistence of high fertility in the State (International Institute for Population Sciences 2000). Data from Sample Registration System indicates further that fertility in the State has always been amongst the highest in the country right since 1970. The crude birth rate in the State decreased from 39.1 in 1971 to 30.4 in 2002 whereas the total fertility rate decreased from 5.6 in 1971 to 4.0 in 2000. Yet the relative rank of the State vis-a-vis other major States of the country has more or less remained unchanged. Throughout the thirty years between 1970 and 2000, the State continued to lag behind other States of the country, as far as fertility transition is concerned.

Despite the fact that fertility levels in Madhya Pradesh continue to be well above the national average, there has been little systematic investigation of the underlying factors. Most of the knowledge about fertility dynamics in the State is derived from national level surveys and analyses. As the result, there is little incorporation of fertility determinants research in planning, designing and implementing fertility reduction activities. Lack of adequate information and research base on fertility and related issues has also resulted in a stereo-type implementation of fertility control efforts, largely guided by the dictates of the central government. There is little State specific initiative for hastening the pace of fertility

transition. There has been some attempt to meet the information needs of fertility control efforts in the State through the National Family Health Survey Programme and through the Rapid Household Survey Programme under the Reproductive and Child Health Project. However, most of the information collected through these surveys is yet to be analysed and used at the State and below State levels for planning, implementation and monitoring and evaluation of fertility control activities. Micro level analyses of the available information that can provide a better understanding of fertility decision making process and identification of factors and situations that influence this process are rare in Madhya Pradesh.

The Madhya Pradesh Population Policy, adopted in 2000, calls for improving the quality of life of the people of the State through an accelerated reduction in fertility and mortality. The goal of the policy is to achieve replacement fertility by the year 2011 (Government of Madhya Pradesh 2000). A decentralised, people's based approach has been outlined in the policy for achieving replacement fertility. It calls for planning, implementation and monitoring of population stabilization programmes and activities at the grassroots level through the active and sustained involvement of people, especially via the agency of panchayat raj Institutions.

Planning for population stabilisation activities at the local level requires information about the demographic situation, particularly information on the levels of fertility, infant and child mortality, etc. At present, data on fertility and mortality are available only at the district level and above. Estimates of fertility have to be obtained from the data on children ever born collected in the 1981 and 1991 population census (Government of India 1997). Information on children ever born is not yet available from the 2001 population census but using the information on population below 7 years of age, available from the 2001 population census, Guilmoto and Rajan have estimated levels of fertility for all the districts of India for the period 1994-2000 (Guilmoto and Rajan 2002). The National Family Health Survey carried out in 1992-93 and 1998-99 provides estimates only

for the State as a whole and for its major geo-political regions (International Institute for Population Sciences 1992: 2001). Recently, a rapid household survey has also been carried out under the Reproductive and Child Health Project in all districts of the country (International Institute for Population Sciences 2000). This survey, however, does not provide district level estimates of fertility because of very small size of the sample covered in each district.

In this paper, we present estimates of fertility along with the estimates of contraceptive prevalence rate for each of the 313 development blocks of Madhya Pradesh which are derived on the basis of information collected during a couple survey carried out throughout Madhya Pradesh in the year 1996 (Government of Madhya Pradesh 1996). It is for the first time that below district level estimates and fertility and contraceptive prevalence are being presented for Madhya Pradesh. The programme service statistics of the National Family Welfare Programme provides estimates of the levels of family planning use up to the district level only. Similarly, information on family planning use available through surveys have generally been available up to the State level only. It is only very recently that the rapid household survey conducted under the Reproductive and Child Health Programme has provide district level estimates of family planning use in the country. However, below the district level, there is no information about the extent of family planning use.

Below district level estimates of fertility and prevalence of contraception presented in this paper have also been used in exploring the relationship between fertility and contraceptive use at the local level. There has been little attempt to do this at the local level because of the non-availability of information on both levels of fertility and levels of family planning use.

The paper also attempts to analyse factors affecting fertility in Madhya Pradesh through an institutional perspective, the factors that operate at the level of the family and the society. The institutional determinants of fertility has largely been a sidelined aspect of fertility research in India. Fertility control efforts and activities in India in general, and in Madhya

Pradesh in particular are virtually a prerogative of the government and, in line with the National Population Policy, a techno-medical approach has been adopted for inducing decline in fertility. This approach is service-provider oriented and rarely takes into consideration the role of the factors that operate at the level of the family and the society in shaping reproductive behaviour. The government of Madhya Pradesh has recently announced its own population policy which calls for improving the quality of life of the people of the State by striking a balance between population, resources and environment through an accelerated reduction in fertility and mortality (Government of Madhya Pradesh 2000). However, despite the very diverse social and cultural diversity prevailing in the State, the Policy is curiously silent about the role of institutional factors in shaping the reproductive behaviour and in deciding the levels of fertility. Like the National Population Policy, it also assumes the techno-medical approach of promoting the use of modern family planning methods through organised family welfare services delivery system as the basic framework for reducing fertility and achieving population stabilisation. One reason behind the omission of the institutional context of fertility and family planning in Madhya Pradesh Population Policy 2000 is that there is little empirical evidence and understanding of the role of institutional factors in fertility decision making process. At the same time, it is generally argued that with the process of social and economic development, the role of institutional factors on fertility decision making process can be minimised if not eliminated.

Estimating fertility: Methods and materials

The Government of Madhya Pradesh, Department of Public Health and Family Welfare, conducted the Madhya Pradesh Target Couple Survey in 1996 throughout the State to collect grassroots level information about fertility and family planning use. The survey was spread over all development blocks and all towns of the state and covered all target couples (couples with woman in

the reproductive age group). Details of the survey organisation, survey methodology, etc. are given elsewhere. (Government of Madhya Pradesh, 1996). During the survey, approximately 12.3 million currently married women in the reproductive age group in undivided Madhya Pradesh (comprising of Madhya Pradesh and Chhattisgarh) were contacted and information about their fertility behaviour including the use of family planning methods was collected. This amounts to a coverage of approximately 90% of the estimated number of target couples in the state in 1996 (Chaurasia 1997). Information from the survey is available for all development blocks and all but one towns of Madhya Pradesh as it exists today (excluding Chhattisgarh). The information that was collected during the survey includes, among other things, information on children ever born, children surviving, children below one year of age, current use of family planning methods, and intention to use family planning method for regulating fertility. The information available through the survey has been used for estimating contraceptive prevalence rate for 458 development blocks and 434 towns of the undivided Madhya Pradesh (Chaurasia 1998). This paper utilises the information on number of children below one year of age for estimating levels of fertility at the development block level.

The method used in this paper for estimating levels of fertility is based on the reverse survival technique (United Nations 1983), which has recently been used to estimate levels of fertility at the district level from information on population below 7 years of age enumerated in the 1991 and 2001 population censuses (Mari Bhat 1996; Guilmoto and Rajan 2002). It is possible to project backwardly the number of infants enumerated in a survey to the total number of live births if the estimates of the probability of death in the first year of life are available. The total number of live births so estimated, when divided by the total number of currently married couples in the reproductive age group, gives the estimates of general marital fertility rate, which is defined as the number of live births per 1000 currently married women in the reproductive age group (15-49 years). Once the estimates of general marital fertility rate are

available, the implied levels of the total marital fertility rate (TMFR), number of children born to a woman over the course of her married life can be obtained on the basis of the nearly linear relationship that exists between the total fertility rate and the general fertility rate (Bogue 1993).

The only requirement in the application of the above approach is the information about the probability of death in the first year of life. The Madhya Pradesh Target Couple Survey, 1996 provides information on children ever born and children surviving for each couple survey. From this information, estimates of the probability of death in the first year of life have been derived. A number of computer programmes are available to estimate the probability of death in the first year of life on the basis of children ever born and children surviving data. We have used the MORTPAK computer software package developed by the United Nations for estimating the probability of death in the first year life (United Nations 1988a). This probability of death in the first year of life was then converted into the person years lived in the first year through the application of standard life table procedures. The number of live births were then estimated by dividing the number of infants enumerated during the survey by the person years lived in the first year of life. Once the estimates of total number of live births are available, estimation of the general marital fertility rate was straightforward.

It may be pointed out here that the quality of the estimates of probability of death in the first year of life has only a minor impact on the results of the method adopted. However, the estimation procedure adopted is vulnerable to errors associated with the enumeration of currently married females in the reproductive age group and reporting of the number of children below one year of age by their mothers. There are a number of reasons for the under enumeration of currently married females in the reproductive age group, the most important of which is that many currently married females may not be available for enumeration at the time of the survey; they may have moved to their mother's house, etc. Similarly, errors associated with the

reporting of age in any survey are well known. It was however observed during the survey that in general, females interviewed were quite specific about the month of the birth of the child and so the error associated with the reporting of the age of the child below one year of age may be expected to be relatively small.

The estimates of fertility presented in this paper are related to fertility within the institution of marriage only. The Madhya Pradesh Target Couple Survey, 1996 enumerated only the target couples, couples with wife in the reproductive age group, in the families surveyed. It did not collect information about the total members and total number of unmarried females in the reproductive age group. Conventional fertility indicators like birth rate and total fertility rate could not be estimated. Still the estimates presented in this paper give a fair idea about the levels of fertility at the development block level in the State.

Block level estimates of fertility

Detailed estimates of general marital fertility rate and implied total marital fertility rate for 313 development blocks of the State are given in a separate table as an appendix to this paper. Summary measures of the distribution of the two indicators of marital fertility across the development blocks of the State are given in table 1. The estimation exercise also produced estimates of general marital fertility rate and implied total marital fertility rate for the rural areas of 9 administrative divisions and 45 districts of the state. These estimates are given in table 2 and table 3 respectively.

According to the information available through the Madhya Pradesh Target Couple Survey 1996, the general marital fertility rate for the rural areas of the State has been estimated to be around 162 live births for every 1000 currently married females in the reproductive age group for the period 1995-96. This general marital fertility rate implies a TMFR of approximately 5 children per currently married woman in the reproductive age group. According to the Sample Registration System, the TMFR for

rural areas of undivided Madhya Pradesh (including Chhattisgarh) was 5.2 children per currently married women in the reproductive age group in the year 1998 (Government of India 2000). Clearly, the estimation exercise used in the present analysis very closely approximates the marital fertility levels in the rural areas of the State.

Amongst the development blocks of the State, the highest marital fertility has been estimated in the development block Bagh of district Dhar. In this development block, the number of live births per 10000 currently married women in the reproductive age group has been estimated to be 281. This general fertility rate implies a TMFR of 8.78. In addition to development block Bagh, the TMFR has been estimated to be 8 children and more in Rama, Bhabhra and Sondwa development blocks of district Jhabua, Badarwas development block of district Shivpuri and Bhimpur block of district Betul.

The lowest general marital fertility rate of 100 live births per 1000 currently married women of reproductive age has been estimated for development block Balaghat in district Balaghat. This general marital fertility rate implies a TMFR of 3. There are 43 development blocks where the total marital fertility rate has been estimated to be less than 4.

The distribution of the development blocks of the State by the level of TMFR is presented in table 4. In more than two thirds of the development blocks of the State, the TMFR has been estimated to vary between 4 to 6 children whereas in almost one fifth of the development blocks, it has been estimated to be 6 children and more. This leaves less than 15 per cent of the development blocks in the State where the TMFR has been estimated to be less than 4.

Summary measures of the distribution of general marital fertility rate and the TMFR reveal that the inter-quartile range of the two measures of marital fertility across the development blocks of the State is very small. This indicates that in most of the development blocks of the State, the TMFR varies within a narrow range and there are very few development blocks where the marital fertility levels are either abnormally high or abnormally

low. Moreover, the distribution of the development blocks on the scale of general marital fertility rate and the total marital fertility rate is more or less symmetric as may be seen from a very low value of skewness and little difference between mean and median of the two indicators of fertility.

Marital Fertility in the Administrative Divisions of Madhya Pradesh. Among different administrative divisions of the State, rural marital fertility levels have been found to be highest in the Sagar division closely followed by Indore and Gwalior divisions. Rural marital fertility has been found to be lowest in Ujjain division closely followed by Hoshanagabad division. In the Sagar division, the rural general marital fertility rate has been estimated to be 177 which implies a TMFR of 5.56. The corresponding figures for general marital fertility for Indore and Gwalior divisions are 176 and 174 respectively which imply a TMFR of 5.51 and 5.47. Very high marital fertility in the Indore division is largely due to exceptionally high marital fertility in Jhabua and Barwani districts of this division.

By contrast, the rural general marital fertility rate in the Ujjain division has been estimated to be just 132 while in Hoshanagabad division, it has been estimated to be 136. These rates imply a TMFR of 4.16 and 4.29 respectively in the two divisions. The implied rural total marital rate has been estimated to be less than 5 in Chambal, Rewa and Jabalpur divisions whereas in Bhopal division, it has been estimated to be more than 5.

Marital Fertility in the Districts of the State. Among the districts of the state, marital fertility has been found to be lowest in district Datia and highest in district Jhabua. The general marital fertility rate in the rural areas of district Datia has been estimated to be 113 which implies a TMFR of around 3.6. By contrast, in the rural areas of district Jhabua, the general marital fertility rate has been estimated to be 239 which implies a TMFR of 7.5.

In addition to district Datia, marital fertility has also been found to be low in the rural areas of Mandsaur, Neemuch and Narsinghpur districts. In the rural areas of these districts, the

general marital fertility rate has been estimated to be less than 125 which implies a TMFR of less than 4. On the other hand, in Chhatarpur, Harda and Vidisha districts, general marital fertility rate has been estimated to be more than 190 implying a TMFR of at least 6. Moreover, in 20 districts of the State, the implied TMFR has been estimated to be between 4 and 5 whereas in another 17 districts, the TMFR in the rural areas has been estimated to vary between 5 and 6. Majority of these districts are located in the northern and central regions of the State.

Marital fertility and family planning use

The Madhya Pradesh Target Couple Survey, 1996 also provides information on the use of family planning methods by all couples contacted during the survey. On the basis of this information, the contraceptive prevalence rate has been calculated for all the 313 development blocks of the State (Chaurasia 1998). Availability of data on development block level contraceptive prevalence rate makes it possible to explore the relationship between marital fertility and the extent of family planning use at the development block level. In earlier studies, the relationship between the levels of fertility and the extent of the use of family planning methods has generally been explored either at the national or State or district level. The analyses carried out by taking countries as the unit of analysis reveal a very strong negative relationship between fertility levels and the extent of family planning use (Bongaarts 1984; Nortman 1985; Srikantan and Balasubramaniam 1988; United Nations 1979; World Bank 1987). In India, it has been observed that when the State is taken as the unit of analysis, relationship between the levels of fertility and the extent of family planning use is not so strong (Srinivasan 1988). Srinivasan has argued that as one goes down the level of aggregation, the extent of family planning use explains less and less proportion of the variation in the levels of fertility and at the micro level or at the level of the individual couple, use of family planning methods explains only a small proportion of the variance in completed fertility among

couples. In fact, analysing the micro level information on the number of children ever born and the use of family planning methods from three development blocks and five towns of Madhya Pradesh, it has been found that the number of children ever born are *positively*, not negatively, related with the use of family planning methods (Chaurasia 2002).

The regression of general marital fertility rate and total marital fertility rate on the contraceptive prevalence rate based on the estimates of fertility and family planning for the 313 development blocks of the State reveals a similar pattern (Table 4). The analysis suggests that the variation in the contraceptive prevalence rate explains only about 20% of the variation in either the general marital fertility rate or in the total marital fertility rate across the development blocks of the State. Although the regression coefficient of the general marital fertility rate and the total marital fertility rate with the contraceptive prevalence rate has been found to be statistically significant, yet the fact that the contraceptive prevalence rate accounts for just about one fifth of the variation in the marital fertility rate indicates that the practice of contraception is not a strong determinant of marital fertility at the development block level.

This observed relationship between fertility and family planning suggests at least two possibilities. The first possibility is that the quality of the family planning services is poor and its efficiency is low, so that despite wide use of family planning methods, its impact on the levels of fertility has been found to be below expectation. Unfortunately, little is currently known about different aspects of quality and efficiency of family planning such as extent of continuation, the chances of failure, etc. in Madhya Pradesh.

The second possibility of the below than expected impact of family planning on fertility at the micro level is that the use of family planning is not properly oriented. This issue has been elaborated in detail by Srinivasan and Freymann (Srinivasan and Freymann, 1990). They have argued that efforts to promote family planning must be focussed on highly fecund women, carefully

selected from all eligible couples, rather than on *all* women in the reproductive age group, as is the usual practice of promoting family planning in India. Promotion of family planning in India has almost entirely been a prerogative of the government under the National Family Welfare Programme. This programme, right from its inception, has emphasised birth limitation and the use of terminal methods as the strategy to reduce the birth rate. Since the focus of the programme has been on birth limitation rather than birth spacing, it has willy or nilly focussed on those couples who have completed their fertility and therefore the impact of the programme on fertility levels is less than expected.

Finally, it also appears that there are factors other than family planning use that, at the micro level, have a strong influence on the levels of fertility. One such group of factors are those which operate at the level of social institutions - family and community. A recent analysis of the impact of the institutional factors on the levels of fertility indicates that these factors have some significant influence on the levels of fertility which is independent of the practice of family planning (Chaurasia 2002). In any case, it is clear that focussing on the promotion of family planning alone may not lead to an accelerated reduction in fertility, at least in situations where the quality and efficiency of family planning services remain poor and where these services continue to be oriented and focussed towards couples who have completed their fertility.

In order to make family planning effective, a change in the basic orientation of family planning services delivery along with lasting improvements in the quality and efficiency of family planning practices is necessary. The focus of any programme or activity directed towards the promotion of family planning must be directed towards highly fecund, low parity couples rather than on low fecund, high parity couples. This, *inter-alia*, requires a shift from the emphasis on terminal methods of contraception to the spacing methods of contraception. But the effectiveness of the spacing methods of contraception in regulating fertility depends, very crucially, on the quality of

family planning services and efficiency of the family planning services delivery system.

Institutional determinants of fertility

The role of institutional factors in shaping the human reproductive behaviour can be discussed in the broader context of how institutional settings influence the reproductive decision making process. Reproductive behaviour is both biological behaviour, with dim evolutionary antecedent and immediate physiological constraints, and social behaviour that attaches at innumerable points to its social and cultural settings (McNicol 1980). Because of its strong social and cultural dimensions, reproductive behaviour is conditioned and influenced by the prevailing family, and community environment.

There are many institutional forms that have direct bearings on the reproductive behaviour. These institutional settings guide an individual or a couple in organising its behaviour and activities into a definite pattern from the view point of an ordered social and family life. These institutions also provide support to individuals and couples at the time of distress and need and serve as some form of insurance to natural and financial risks. Members of these institutions share certain commonalities and are normally committed to safeguarding the interests of these institutions which gets reflected in their behaviour.

Among many institutional forms that contribute towards shaping the individual reproductive behaviour, the family is the foremost one. Family provides social, psychological, and financial support to its members. In turn the behaviour of the members of the family is conditioned more by family interests than by individual choices and preferences. Family, as an institution, attaches different values to its different members with regard to their skills and capacities at any particular decision-making juncture, only those issues are weighed and valued which increase the value of that individual within the

family thereby influencing the behaviour of the members of the family.

In the context of the institutional perspective, a family can be classified between “the family as an institution” and “the family as a companionship”. Large patriarchal type families most closely approximate the institutional family with its combination of the powerful sanctions of the mores, religion and law and practically the complete subordination of individual members to the authority of the patriarch. In such a family, unity is determined entirely by social pressure impinging on family members. Marriages, in these families, are arranged by the parents with emphasis upon prudence, economic and social status, religious and cultural similarity, etc. These families are authoritarian and autocratic by nature with a lot of power vested in the head of the family. Family assets and family property in the institution type families are usually in the name of the family patriarch. Compliance of duty and following of the traditional practices are the guiding principles of decision making in such families. The chief historic functions of the family - economic, educational, recreational, health protective and religious - are found in their fullest development in these type of families.

In the companionship type families, by contrast, family members enjoy a high degree of self-expression and, at the same time, are united by bonds of affection congeniality and common interests. These families are democratic in nature and are built around the equality of the husband and the wife and strive for consensus and participation of children in family decision making. Marriage, in these families, is in the hands of young people; selection is on the basis of romance, affection and personality adjustment. Control of the behaviour of family members by custom, tradition and community opinion is greatly weakened and achievement of personal happiness and desire for innovation are the watchwords. Unity in this type of families is developed out of mutual affection and intimate association of husband and wife and parents and children.

Beyond the family, there are local-level supra-family groupings that exert considerable influence on the decision-making environment within the family. Religion and caste are the most common of these supra-family groupings in India. The presence of priests and other society peers and their followers constitute another type of supra-family groupings which are mostly informal in nature but which have some very strong bonds. In matters of family rituals, especially those associated with some key events related to reproductive behaviour - marriage, birth of the child, etc. - the views and opinion of these priests and peers are sometimes ultimate and binding. An important distinguishing characteristics of these supra-family groupings is their corporateness and territoriality. Corporateness governs the capacity of an institution to influence the behaviour of group members to suit institutional interests, howsoever these may be defined. Territoriality affects the likelihood that reproductive behaviour will be included in the kinds of behaviour subjected to institutional pressure. An important implication of these supra-family groupings is the dominance and persistence of tradition and continuity in human behaviour which leads to a certain degree of orthodoxy in all kinds of human behaviour including the reproductive behaviour.

At present, little is known about the role of these supra-family groupings in shaping the fertility decision making process within the family and directing the reproductive behaviour of the members of the family. It is generally argued that with modernisation, especially universalisation of education, reproductive behaviour is increasingly conditioned more by individual choices and preferences than by family and society obligations and contexts. There is however little empirical evidence to prove this conjecture in a State like Madhya Pradesh.

Information for this segment of the analysis was collected through a survey carried out in 1999 in three community development blocks and five towns of the undivided Madhya Pradesh. A multi-stage sampling procedure was used to select the sample for the survey. The details of the sample selection methodology are given elsewhere (Chaurasia 2000). The survey

covered 2243 families, out of which 167 filled up questionnaires were rejected at the editing stage because of inconsistencies in the data and incomplete information. The effective sample size therefore was 2,076 families - 1,475 families from three community development blocks and 601 families from the five towns. In each family included in the sample, separate interviews were carried out with the head of the family and one currently married female in the reproductive age group on the basis of a pre-designed and pre-tested questionnaire. Direct interview procedure was adopted for collecting the information. The currently married females in the reproductive age group were interviewed in-camera by a trained female field investigator to maintain the confidentiality of the information provided by the respondent.

The basic characteristics of the population surveyed are shown in Table 5. In most of the families surveyed, the traditional or family occupation was either farming or farm related labour. Nearly all families were Hindu families; Muslim and Christian families accounted for a mere 5% of all surveyed families. Among Hindu families surveyed, nearly one-half were 'backward' castes; one-fourth were upper castes and remaining one fourth were Scheduled Castes and Scheduled Tribe families. The median per capita income of the families surveyed was INR 1932 per year at the prevailing prices. More than 48% of the families surveyed had a per capita income of less than INR 1800 per year.

Information about children ever born to a woman and estimates of age-specific fertility rate, crude birth rate, total fertility rate and other measures of fertility in the surveyed population are presented in table 6 for the entire population as well as separately for rural and urban areas. The table gives two estimates of the total fertility rate. The first is based on the age specific fertility rates derived directly from the pregnancy history data. It is well known that age specific fertility rates obtained from pregnancy history data are associated with sampling and reporting errors such as misstatements of dates and events and even failure by the mother to recall the occurrence of pregnancies and births (Bogue and

Bogue 1970). In order to address these problems, the age specific fertility rates obtained directly from the pregnancy history data were adjusted on the basis of the age pattern of average number of children ever born per woman through the application of Relational-Gompertz model (Brass 1981) to generate a second, adjusted estimates of the total fertility rate. The exercise, however, revealed that the difference between unadjusted and adjusted total fertility rates was small.

For the total population surveyed, the average total fertility rate was estimated to be about 4.4 births per woman, while the average crude birth rate was estimated to be about 34.6 live births per 1,000 population for the period 1995-98 (one to four years prior to the survey). Clearly, high fertility conditions prevailed in the surveyed population. The TFR was estimated to be 31% lower in urban areas than in rural areas. There are some differences in the age pattern of fertility between rural and urban areas as well. Fertility appears to be relatively more concentrated in the age group 20-24 years in the rural areas as compared to the urban areas. In both the areas, peak fertility is achieved early in the reproductive period. Moreover, after achieving its peak level at ages 20-24 years, fertility decreases relatively more sharply up to ages 30-34 in the rural areas than in the urban areas.

Fertility levels have also been found to be directly associated with the schooling of women (table 7). The highest birth rate of more than 40 live births per 1000 population and the highest total fertility rate of 4.6 births per woman has been estimated in women who had never been to school. By contrast, women with more than 10 years of schooling had a total fertility rate of just 2.6 births per woman and a crude birth rate of be just 24 live births per 1000 population. Evidently education of the mother has some very strong impact on fertility in the surveyed population.

he Institutional Context

During the survey, a number of questions were asked from both the head of the family and the currently married female in the reproductive age group to capture the prevailing family and society context that influences the reproductive behaviour of couples. The questions ranged from the opinion to actual experience within the family and in the society and can broadly be grouped into three categories. The first category attempted to characterise the families surveyed on a scale ranging from an institutional family to a companionship type family. Questions in this category were related to the religion and caste of the family, ownership of the family property, control and authority of family patriarch, practice of purdah by the female members of the family, etc. The second group of questions attempted to collect the views of the family patriarch in such areas as most important family responsibility, preferred age at marriage of boys and girls of the family, cost and benefits associated with bringing up children, etc. Information about the presence of the family priest or peer was also collected along with the role played by the family priest or peer in family decision-making especially in decision-making related to the reproductive behaviour. The currently married females in the reproductive age group interviewed during the survey were also asked about how pregnancy and associated birth contributed in deciding their status and value in the family and the society.

The third set of questions canvassed during the survey were related to the basic characteristics of currently married females in the reproductive age group. This information included age of the woman interviewed, her age at marriage and the number of years she has been to school, total number of children ever born and total number of children surviving at the time of the survey, etc. The women interviewed were also asked about the use of any family planning methods either by her or by her husband to regulate fertility. Additionally, they were asked about their experience in the family and the society in getting pregnant and

how the value system in the family and the society changed with successive pregnancies.

Among the many questions that were asked from the head of the family surveyed as well as from the currently married female in the reproductive age group, six questions were selected to reflect the institutional context of fertility and reproductive decision making in the families surveyed. The questions that have been selected are

- i. Whether all family property is in the name of the family head or some property is also in the name of other members of the family including unmarried and married females.
- ii. Practice of purdah by the married female members of the family and communication between married female members and the head of the family.
- iii. Presence of a priest or peer in the family whose opinion and advice is sought in family decision making including decision making related to fertility and reproductive behaviour.
- iv. Views and opinion of the head of the family about bringing up and rearing up children.
- v. Views and opinion of currently married females in the reproductive age group whether getting pregnant is beneficial and, if yes, how.
- vi. Experience of the currently married females in the reproductive age group about their status in the family and the society on getting pregnant.

The prevailing levels of the above six variables used for characterising the institutional context of fertility and reproductive behaviour in the surveyed population are summarised in table 8. The table suggests that most of the families surveyed were primarily institution type families in which family property was in the name of the family patriarch and where the practice of purdah was nearly universal. Similarly, the existence of a family priest or some family peer in most of the families surveyed indicates the existence of supra-family institutions that influence the decision making process in the family including the reproductive decision making. On the other hand, majority of

women interviewed viewed pregnancy as beneficial for them as getting pregnant was an indicator of their womanhood and their contribution to the interests of the family happiness. On the other hand, less than 7% of the families surveyed were of the view that bringing up and rearing up children involved some type of costs.

An important implication of the prevailing institutional context in the population surveyed as judged from table 8 is a very strong family orientation of institutional settings which shape the decision making environment. It appears that family requirements, family choices and family preferences have a dominating importance over individual choices, preferences and desires as far as decisions related to fertility are concerned and the institutional settings provide support to the prevailing decision making paradigm. This observation again reflects the fact that most of the families surveyed are the institution type families.

Institutional context and fertility

In order to explore the impact of the prevailing institutional context on fertility, the total number of children ever born to a woman were regressed on the eight indicators of institutional context described above. In addition to the institutional variables, age of the woman at the time of the interview, her age at marriage, number of years she had been to school, number of children born alive but dead at the time of the survey and the use of family planning methods by her or her husband were included in the regression analysis as control variables. Family religion, family occupation and residence of the family were also included in the regression analysis as control variables as the level of fertility has been found to be influenced by these factors also. Since the dependent variable is a continuous variable, ordinary least square regression was used for the analysis.

Summary measures of the variables used in the regression analysis are presented in table 9 whereas the results of the

regression analysis are given in table 10. The backward elimination of variables method was used in the regression analysis to exclude those variables from the regression which are statistically insignificant. In the backward elimination method, all variables are first entered into the regression equation simultaneously and then variables are eliminated one by one according to a fixed elimination criteria. When no variable meets this criteria, the elimination of variables is stopped.

It may be seen from table 10 that among the eight institutional variables used in the regression analysis, three have been found to be statistically significant even after controlling a host of characteristics of the women interviewed and their family. Moreover, the sign of the regression coefficients is in expected direction. Thus, presence of the family priest or some other family peer in the family has a direct influence on the total number of children ever born per woman. Similarly, the thinking that getting pregnant is beneficial has a direct bearing on the number of children ever born whereas the thinking that pregnancy is associated with some type of cost has a negative bearing on the total number of children ever born. The results suggest that perceptions of women about the benefits and costs of getting pregnant and supra-family institutions built around family priest or peer are important institutional determinants of fertility in the surveyed population. In a society where getting pregnant is an indicator of womanhood and where pregnancy is viewed by women as their contribution to the family, there is an inbuilt impetus for more children. In such an institutional environment, children are regarded as essential for family happiness.

The other institutional variable having a significant influence on fertility is the presence of family priest or peer to guide and advise the family in family related matters. The regression analysis indicates that the presence of family priest or peer has a direct influence on the total number of children a woman has. There are reasons for this relationship. In the Indian social context, there are important social, religious and cultural rituals that are typically performed at all milestones

of the reproductive process - marriage, pregnancy and birth. These rituals are almost invariably performed by the family priest. These social and religious traditions are not only a source of livelihood for the family priest but also means of maintaining corporateness and sustaining his or her territoriality or the sphere of influence and dominance. Since every pregnancy and associated birth is a source of potential financial and other gains to the family priest, the maximisation of fertility is often in his interest.

Another institutional variable which has been found to have a strong but not statistically significant association with the number of children ever born is the pattern of owning of family property and family assets. This variable is taken in the regression analysis as a proxy for the type of the family - institution type or the companionship type. The results of the regression analysis indicate that in families where all family property and family assets are in the name of family head only, the tendency is towards having a large number of children. By contrast, in families where family property or family assets are distributed among the members of the family, fertility appears to be relatively low. Clearly, in families which are democratic in orientation and where there is openness and regular interaction between family members, especially of different generations, there appears to be some inclination towards lesser number of births than in families which are authoritative and autocratic in nature.

Another important observation of table 10 is that there existed a very strong relationship between the number of children ever born and the number of children dead in the surveyed population. Fertility has been found to be significantly higher among surveyed women who experienced a child loss as compared to the surveyed women who had not experienced any child loss. Obviously, minimising the premature child loss appears to be an important prerequisite for reducing fertility in Madhya Pradesh. There are a number of factors behind premature child loss. The very fact that the average child loss per woman in the surveyed population is around 0.33 children raises concerns about the

availability, accessibility of basic child survival services in the surveyed population and up to what extent, these services are affordable to the families, especially the families from the poorest strata of the society. In any case, availability of affordable child health and child care services within the reach of the people at large constitutes another important institutional context of fertility in the surveyed population.

Conclusions

The micro level information on the levels of fertility and prevalence of contraception in Madhya Pradesh presented in this paper reveals some very wide local level variations in both fertility levels and extent of the family planning use. This variability obviously stresses the need of local level planning for population stabilisation activities including the implementation of the family welfare programme. It is hoped that this micro level information will serve as a valuable input for decentralised planning and implementation of population stabilization activities in the State as outlined in Madhya Pradesh Population Policy 2000.

The paper has also analysed the relationship between the levels of marital fertility and the extent of family planning use at the micro (development block) level. The analysis reveals that variation in the use of family planning methods across the development blocks of the state explains only a very small proportion of the variation in the levels of marital fertility. The findings of the analysis suggest that mere concentration on family planning alone may not be very much effective in bringing down fertility levels and hastening the pace of demographic transition. In fact, the analysis indicates that population stabilisation efforts in the State can succeed only by adopting a broad based approach for fertility reduction. This broad based approach must have a development orientation rather than a demographic orientation, as is the situation at present.

The analysis also indicates that there is an immediate need of reorienting the National Family Welfare Programme so as to

make it more effective in regulating fertility. The areas that need to be focussed include quality of family planning services and the efficiency of the family planning services delivery system. Without significant improvements in the quality of family planning services and the efficiency of the family planning services delivery system, the impact of the practice of family planning methods on fertility level will remain less than expected.

The empirical analysis presented in this paper also highlights the role of the factors that operate at the level of the family and the society in shaping the reproductive behaviour of individual couples and in deciding fertility levels. It is clear from the analysis that fertility in particular and reproductive behaviour in general have a strong institutional orientation in the Indian social system. If female education is regarded as an indicator of social and economic development at the family level, then the foregoing analysis suggests that the strong family orientation to reproductive behaviour and associated fertility holds across all levels of development.

An important finding of the present analysis is that the relative values accorded to individuals, especially women, within the family is an important motivational force in reproductive decision making in the surveyed families. Getting pregnant and delivering children is an important component of this value system in the family as well as in the society. The present study indicates that getting pregnant is viewed by the majority of women surveyed as a means of enhancing their status in their husband's families. This suggests that issues related to reproductive behaviour and fertility appear to be related to the self-esteem of women in the Indian social and family system. The analysis presented here also suggests that this relationship between self-esteem and fertility persists irrespective of the level of education of the women.

The analysis also brings out in clear perspective, the influence of local level supra-family groupings on the reproductive decision making. Once again these influences are independent of the level of education of the women surveyed. In

fact, the opinion and views of these supra-family institutions largely decide the value system in the society and in the family. A high fertility regime appear to suit these supra-family institutions in many ways including economic benefits, and the authority and hold of these institutions on families and individuals. In the rural areas, the authority and hold of these institutions in establishing social norms and cultural practices is usually beyond any dispute or discussion.

The findings of this analysis also confirm the oft repeated hypothesis that a substantial reduction in infant and child mortality is critical to reducing fertility. This means that establishing an efficient yet affordable system of preventing pre-mature deaths is another institutional context that is critical for an accelerated reduction in fertility.

The findings presented in this paper have important policy implications. The current approach to fertility regulation and control pays little attention to the social and family environment in which reproductive decisions are taken. The present analysis however reveals that reproductive decisions are not taken in a social and cultural vacuum. Rather, individual reproduction making is influenced by a number of institutional factors that operate at the level of the family and the society. It therefore appears imperative that the institutional factors are given due consideration in designing and implementing fertility control efforts, especially at the local level. The techno-medical approach which has currently been adopted for planning and implementing fertility control activities and programmes is not suited for integrating institutional factors in these activities and programmes. There is a need of people entered efforts and activities for accelerating the pace of fertility decline which takes into consideration the institutional context of reproductive decision making in addition to specific reproductive needs of couples.

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Table 1: Summary measures of the distribution of marital fertility across the development blocks of Madhya Pradesh, 1996.

Measure	General marital fertility rate	Total marital fertility rate	Contraceptive prevalence rate
Minimum	100	3.16	22.85
First quartile	138	4.35	45.32
Median	159	5.01	51.93
Third quartile	183	5.73	58.72
Maximum	281	8.78	75.59
Range	181	5.62	52.74
Inter quartile range	44	1.38	13.40
Average	163	5.13	51.60
Standard deviation	36.182	1.122	10.103
Coefficient of Variation	22.154	21.871	19.580
Skewness	0.785	0.785	-0.249

Table 2: Estimates of general marital fertility rate, implied total marital fertility rate and contraceptive prevalence rate for the rural areas of the administrative divisions of Madhya Pradesh, 1996.

Division	General marital fertility rate	Implied total marital fertility rate	Contraceptive prevalence rate
Bhopal	171	5.37	49.22
Chambal	147	4.61	46.62
Gwalior	174	5.47	49.29
Hoshangabad	136	4.29	53.03
Indore	176	5.51	52.78
Jabalpur	144	4.52	56.62
Rewa	156	4.91	43.67
Sagar	177	5.56	51.09
Ujjain	132	4.16	56.97

Table 3: Estimates of general marital fertility rate, implied total marital fertility rate and contraceptive prevalence rate for the rural areas of the districts of Madhya Pradesh, 1996.

District	General marital fertility rate	Implied total marital fertility rate	Contraceptive prevalence rate
Indore	128	4.04	67.66
Dhar	170	5.33	51.60
Jhabua	239	7.47	41.71
Khargone	144	4.55	55.61
Khandwa	172	5.40	58.39
Barwani	179	5.62	44.71
Ratlam	154	4.85	57.19
Mandsaur	114	3.60	55.01
Ujjain	131	4.13	59.23
Dewas	145	4.57	54.44
Shajapur	148	4.65	56.22
Neemuch	117	3.71	59.23
Gwalior	174	5.46	50.99
Datia	113	3.59	58.96
Shivpuri	176	5.54	45.57
Guna	176	5.53	48.19
Morena	161	5.07	50.03
Sheopur	185	5.81	42.28
Bhind	140	4.40	44.46
Sidhi	175	5.51	41.29
Satna	154	4.85	42.88
Rewa	177	5.56	46.02
Shahdol	133	4.18	46.10
Umaria	142	4.46	41.96
Chhatarpur	200	6.28	39.09
Sagar	164	5.16	51.33
Damoh	150	4.72	57.44
Panna	184	5.76	50.30
Tikamgarh	146	4.60	60.57
Sehore	171	5.37	55.13
Raisen	185	5.81	46.84
Rajgarh	142	4.48	47.50

District	General marital fertility rate	Implied total marital fertility rate	Contraceptive prevalence rate
Vidisha	192	6.01	36.43
Bhopal	181	5.67	51.40
Betul	176	5.51	57.00
Hoshangabad	148	4.64	58.30
Harda	195	6.12	43.84
Jabalpur	130	4.09	57.11
Katni	177	5.55	44.85
Narsinghpur	122	3.84	63.75
Chhindwara	153	4.81	61.14
Seoni	148	4.65	61.93
Mandla	150	4.73	59.64
Dindori	153	4.82	54.20
Balaghat	131	4.12	51.23

Table 4: Results of the regression analyses of general marital fertility rate and total marital fertility rate on the contraceptive prevalence rate.

	Dependent variable	
	General marital fertility rate	Total marital fertility rate
R ²	0.205	0.205
Constant	247.43	7.745
Regression coefficient	-1.63	-0.005
Standard error	0.181	0.006
β	-0.455	-0.456
't'	-9.02	-9.034

Table 5: Characteristics of the families surveyed

Characteristics		Total	Rural	Urban
Occupation of family head	Agriculture	42.75	51.83	20.47
	Business	10.07	4.00	24.96
	Service	12.48	7.39	24.96
	Labour	28.10	30.05	23.29
	Mixed	6.60	6.72	6.32
	All	100.00	100.00	100.00
Religion	Hindu	94.51	95.92	91.00
	Muslim	4.66	3.27	8.15
	Christian	0.44	0.48	0.34
	Others	0.39	0.34	0.51
	All	100.00	100.00	100.00
Caste	<i>Upper castes</i>	<i>25.98</i>	<i>20.50</i>	<i>40.37</i>
	<i>Backwards castes</i>	<i>49.12</i>	<i>48.61</i>	<i>50.47</i>
	<i>Scheduled castes</i>	<i>16.86</i>	<i>21.00</i>	<i>5.98</i>
	<i>Scheduled tribes</i>	<i>8.04</i>	<i>9.89</i>	<i>3.18</i>
	All	<i>100.00</i>	<i>100.00</i>	<i>100.00</i>
N		1946	1410	536
Per capita income	< 600	35.10	32.70	42.57
	600-1799	13.22	14.21	10.15
	1800-2999	15.26	17.38	8.66
	3000-4199	13.34	14.44	9.90
	4200-5399	5.77	5.95	5.20
	5400-6599	4.33	4.05	5.20
	6600-7799	3.00	2.70	3.96
	7800-8999	2.22	2.14	2.48
	>9000	7.75	6.43	11.88
	All	100.00	100.00	100.00
N		2076	1475	601

Notes: Per capita income is in Indian Rupees per person per year at the prices prevailing at the time of the survey.

Distribution of families by caste is limited for Hindu families only. There are no castes in families of other religions.

Table 6: Levels of fertility in the surveyed population

Fertility indicator	Total	Rural	Urban
Average children ever born			
15-19	0.477	0.566	0.526
20-24	1.658	1.826	1.269
25-29	2.813	2.982	2.442
30-34	3.524	3.794	2.980
35-39	4.082	4.304	3.675
40-44	4.410	4.639	3.960
45-49	4.478	4.501	4.399
Age-specific fertility rate (1995-98)			
15-19	0.081	0.100	0.037
20-24	0.272	0.297	0.212
25-29	0.229	0.237	0.179
30-34	0.129	0.131	0.126
35-39	0.049	0.058	0.034
40-44	0.024	0.034	0.004
45-49	0.002	0.003	0.001
TFR	3.934	4.298	2.957
GFR	0.142	0.154	0.109
CBR (0/00)	33.94	36.00	27.39
TFR (Adj)	4.367	4.713	3.194

Table 7: Fertility differentials by level of education

Indicator	Number of years in school			
	Nil	1-5 years	6-10 years	> 10 years
Average children ever born				
15-19	0.883	0.463	0.126	0.000
20-24	2.035	1.685	1.310	0.492
25-29	3.078	2.808	2.364	1.768
30-34	3.847	3.473	2.769	2.252
35-39	4.381	4.002	3.333	2.845
40-44	4.461	4.685	4.150	3.429
45-49	4.402	4.923	5.600	3.875
Age-specific fertility rate (1995-98)				
15-19	0.151	0.077	0.038	0.000
20-24	0.312	0.295	0.265	0.113
25-29	0.225	0.226	0.219	0.218
30-34	0.145	0.116	0.090	0.101
35-39	0.057	0.028	0.044	0.032
40-44	0.028	0.000	0.027	0.018
45-49	0.003	0.000	0.000	0.000
TFR	4.609	3.704	3.412	2.408
GFR	0.151	0.145	0.131	0.096
CBR	40.66	25.60	28.88	23.88
TFR (Adj)	4.660	3.464	3.004	2.583

Table 8: The institutional context of surveyed women

Context	Total	Rural	Urban
1. All family property in the name of family head (FPROP)	75.78	79.97	66.89
2. Presence of family priest (FPRIEST)	66.18	65.14	68.76
<i>Opinion of priest</i>			
• <i>always sought</i>			
• <i>often sought</i>	37.35	42.77	24.69
• <i>rarely sought</i>	50.59	49.63	52.84
• <i>not sought</i>	7.91	3.91	17.28
	4.14	3.70	5.29
3. According to women interviewed, getting pregnant is beneficial (PBENEF)	56.71	53.16	64.72
<i>Reasons</i>			
• <i>Indication of womanhood</i>			
• <i>Increased prestige</i>	31.40	31.44	31.33
• <i>Family prosperity</i>	10.29	10.03	10.78
• <i>Contribution to family</i>	3.25	3.12	3.51
• <i>Family happiness</i>	27.26	26.42	28.82
	23.66	24.39	22.31
4. Practice of purdah among family members (PPURDAH)	79.33	84.63	66.50
• <i>Despite purdah, talk to family head</i>	62.31	68.64	47.00
• <i>Purdah and do not talk to family head</i>	17.02	15.99	19.50
5. According to family heads interviewed, no cost is involved in bringing up children (CCOST)	93.38	93.58	92.92
6. According to the women interviewed, getting pregnant increases prestige in the family (EXP)	61.51	57.19	71.43

Table 9: Summary measures of variables used in regression analysis

Variable and their categories	Value	Mean	SD
FPUSE Using a family planning method Not using any method	10	0.3808	0.4857
FPRIEST Presence of priest or peer in the family No priest or peer	10	0.6659	0.4718
PPURDAH Practice of purdah is practised Purdah is not practices	10	0.7849	0.411
RES Rural Urban	10	0.7035	0.4569
FPROP Family property in the name of other members also Family property in the name of family head only	10	0.2487	0.4324
PBENEF Getting pregnant is beneficial Getting pregnant is not beneficial	10	0.4314	0.4954
EXP Getting pregnant increases prestige Getting pregnant does not increase prestige	10	0.6232	0.4847
CCOST Bringing up children incurs cost Bringing up children doe not incur cost	10	0.028	0.168
CD Children born alive but dead now (continuous)		0.33	0.82
AGE Age of the woman surveyed (continuous)		30.52	7.63
AGEM Age of the woman surveyed at marriage (continuous)		16.07	2.75
EDU Number of years in school (continuous)		2.85	4.35

Table 10: Results of the regression of children ever born on selected institutional and individual variables

Variables	Regression Number					
	1	2	3	4	5	6
PBENEF	0.091 <i>0.060</i>	0.091 <i>0.064</i>	0.092 <i>0.060</i>	0.091 <i>0.060</i>	0.095 <i>0.059</i>	0.094 <i>0.059</i>
FPROP	-0.020 <i>0.066</i>	-0.019 <i>0.066</i>	-0.019 <i>0.066</i>	-0.019 <i>0.066</i>	-0.020 <i>0.066</i>	
CCOST	-0.017 <i>0.171</i>	-0.017 <i>0.171</i>	-0.017 <i>0.171</i>			
EXP	-0.022 <i>0.064</i>	-0.021 <i>0.064</i>	-0.019 <i>0.063</i>	-0.020 <i>0.063</i>		
RES	-0.009 <i>0.070</i>					
PPURDAH	0.013 <i>0.072</i>	0.011 <i>0.071</i>				
FPRIEST	0.057 <i>0.066</i>	0.057 <i>0.066</i>	0.057 <i>0.066</i>	0.056 <i>0.066</i>	0.063 <i>0.062</i>	0.062 <i>0.062</i>
FPUSE	0.067 <i>0.061</i>	0.068 <i>0.061</i>	0.068 <i>0.061</i>	0.068 <i>0.061</i>	0.067 <i>0.061</i>	0.066 <i>0.061</i>
Age of the woman	0.425 <i>0.004</i>	0.426 <i>0.004</i>	0.425 <i>0.004</i>	0.425 <i>0.004</i>	0.425 <i>0.004</i>	0.426 <i>0.004</i>
Age at marriage	-0.155 <i>0.012</i>	-0.154 <i>0.012</i>	-0.155 <i>0.012</i>	-0.155 <i>0.012</i>	-0.154 <i>0.012</i>	-0.155 <i>0.012</i>
Number of years in school	-0.069 <i>0.008</i>	-0.067 <i>0.007</i>	-0.067 <i>0.007</i>	-0.067 <i>0.007</i>	-0.069 <i>0.007</i>	-0.071 <i>0.007</i>
Children dead	0.434 <i>0.036</i>	0.433 <i>0.036</i>	0.434 <i>0.036</i>	0.434 <i>0.036</i>	0.433 <i>0.036</i>	0.434 <i>0.036</i>
R ²	0.557	0.557	0.557	0.557	0.557	0.557
N	1772	1772	1772	1772	1772	1772

Figures in italics denote 't' values.

Appendix Table: Estimates of general marital fertility, implied total marital fertility and contraceptive prevalence rate for the development blocks of Madhya Pradesh, 1996.

District		General marital fertility rate	Implied total marital fertility rate	Contraceptive prevalence rate
Indore	Mhow	128	4.03	75.59
	Indore	150	4.73	58.76
	Depalpur	124	3.91	65.96
	Sanwer	113	3.56	72.47
Dhar	Badnawar	127	4.02	54.42
	Sardarpur	179	5.62	54.19
	Dhar	137	4.32	58.90
	Tirla	222	6.96	42.91
	Nalchha	199	6.24	47.77
	Bagh	281	8.78	29.09
	Kukshi	199	6.25	50.46
	Dahi	131	4.12	58.08
	Nisarpur	147	4.63	63.37
	Gandhwani	217	6.81	35.00
	Manawar	176	5.52	58.61
	Bakaner	159	4.99	53.92
	Dharmपुरi	161	5.05	61.20
	Jhabua	Jhabua	255	7.99
Rama		264	8.26	38.73
Ranapur		248	7.77	27.46
Thandla		233	7.30	41.92
Meghnagar		237	7.42	31.13
Petlawad		188	5.89	70.38
Bhabhra		256	8.00	30.60
Jobat		252	7.87	41.52
Udaigarh		238	7.45	28.15
Katthiwada		221	6.93	38.35
Alirajpur		236	7.39	50.88
Khargone	Sondwa	268	8.37	44.62
	Barwah	133	4.18	62.14
	Bhikangaon	106	3.35	56.49
	Gogaon	131	4.13	56.51

District		General marital fertility rate	Implied total marital fertility rate	Contraceptive prevalence rate
Khandwa	Khargone	133	4.20	59.72
	Bhagwanpura	234	7.33	50.15
	Segaon	149	4.69	55.82
	Jhiranya	214	6.71	56.49
	Kasrawad	143	4.52	30.78
	Maheshwar	106	3.37	68.07
	Burhanpur	202	6.32	61.76
	Khandwa	147	4.62	65.98
	Balari	151	4.75	63.41
	C Makhan	134	4.23	65.49
	Khalwa	221	6.91	46.15
	Khaknar	158	4.98	55.26
	Harsood	156	4.92	64.72
	Pandhana	186	5.82	53.67
	Punasa	157	4.95	57.99
Barwani	Badwani	170	5.35	41.71
	Pati	209	6.56	28.31
	Thikri	138	4.34	67.90
	Rajpur	185	5.80	47.46
	Pansemal	193	6.04	46.59
	Sendhwa	178	5.59	38.97
	Niwali	198	6.21	38.79
Ratlam	A lot	134	4.22	49.85
	Jawra	143	4.51	56.40
	Piploda	117	3.70	58.36
	Sailana	241	7.53	54.13
	Bajna	199	6.25	49.92
	Ratlam	140	4.42	66.57
Mandsaur	Mandsaur	104	3.30	58.49
	Sitamau	120	3.80	48.23
	Malhargarh	101	3.19	58.44
	Garoth	110	3.49	53.20
	Bhanpura	150	4.73	58.44
Ujjain	Badnagar	130	4.08	57.99

District		General marital fertility rate	Implied total marital fertility rate	Contraceptive prevalence rate
Dewas	Khachrod	121	3.82	52.56
	Mahidpur	133	4.19	49.30
	Tarana	135	4.25	61.74
	Ujjain	131	4.13	68.76
	Ghatia	149	4.69	53.58
	Bagli	160	5.03	50.18
	Dewas	114	3.61	63.47
	Kannod	187	5.88	50.69
	Khategaon	171	5.36	41.44
	Sonkachh	118	3.74	58.93
Shajapur	Tonkkhurd	118	3.73	60.04
	Shajapur	133	4.19	62.73
	Moman Badodia	164	5.14	59.20
	Shujalpur	160	5.03	55.84
	Kalapipal	168	5.29	56.49
	Agar	117	3.71	45.74
	Barod	143	4.49	51.47
	Susner	136	4.27	56.81
	Nalkheda	254	7.93	53.29
	Neemuch	Neemuch	112	3.53
Javad		113	3.56	59.23
Manasa		127	4.00	54.41
Gwalior	Morar	196	6.14	51.89
	Dabra	254	7.96	44.65
	Ghatigaon	107	3.38	48.82
	Bhitarwar	169	5.32	59.86
Datia	Datia	146	4.61	58.27
	Sewda	156	4.91	64.80
	Bhander	112	3.54	51.51
Shivpuri	Shivpuri	179	5.63	49.86
	Kolaras	160	5.02	47.57
	Badarwas	258	8.05	57.44
	Karera	176	5.52	49.52
	Narwar	166	5.22	37.03

District		General marital fertility rate	Implied total marital fertility rate	Contraceptive prevalence rate
Guna	Pohri	133	4.18	35.45
	Pichhor	176	5.53	47.19
	Khaniadhana	169	5.29	43.27
	Guna	198	6.21	47.50
	Bamhori	193	6.06	51.12
	Ashoknagr	137	4.33	50.93
	Isagarh	183	5.73	52.19
	Mungaoli	172	5.41	47.75
	Chanderi	212	6.64	36.80
	Raghogarh	157	4.93	41.99
	Aaron	188	5.89	58.04
Morena	Chachoda	171	5.38	49.40
	Morena	166	5.22	51.56
	Ambah	125	3.94	55.74
	Porsa	180	5.66	48.36
	Joura	165	5.20	47.72
	Pahargarh	162	5.08	47.60
	Sabalgarh	168	5.26	46.09
	Kailaras	160	5.02	52.37
Sheopur	Sheopur	179	5.62	40.34
	Karahal	185	5.80	50.45
	Vijaypur	192	6.02	40.16
Bhind	Bhind	138	4.33	50.27
	Ater	144	4.53	36.30
	Mehgaon	135	4.24	48.94
	Lahar	138	4.35	39.34
	Mihona	150	4.72	47.86
	Gohad	140	4.41	41.50
Sidhi	Majholi	166	5.21	51.93
	Chitrangi	193	6.06	30.53
	Deosar	199	6.24	38.79
	Rampur n	176	5.52	52.89
	Sidhi	159	5.00	44.46
	Sihawal	143	4.50	31.77

District		General marital fertility rate	Implied total marital fertility rate	Contraceptive prevalence rate
Satna	Kusumi	205	6.41	45.11
	Baidhan	191	5.99	42.28
	Amarpatan	158	4.98	42.79
	Maihar	157	4.93	35.64
	Nagaud	170	5.34	44.68
	Majhgawan	118	3.74	29.97
	Uchehra	177	5.57	45.41
	Satna	144	4.53	46.63
	Rampur b	165	5.20	52.24
Rewa	Ramnagar	172	5.39	55.22
	Rewa	165	5.17	54.50
	Raipur	163	5.14	56.54
	Mauganj	172	5.39	39.51
	Hanumana	184	5.77	34.23
	Naigarhi	125	3.94	47.63
	Tyonthar	255	7.99	33.90
	Jawa	195	6.12	46.38
	Sirmor	142	4.48	43.39
Shahdol	Gangev	177	5.56	52.50
	Sohagpur	159	4.98	53.58
	Pushprajgarh	146	4.58	51.37
	Anuppur	168	5.29	58.98
	Kotma	102	3.23	40.37
	Jaithari	105	3.31	39.18
	Pali(gohparu)	116	3.65	49.01
	Budhar	116	3.65	35.79
	Beohari	156	4.92	43.25
Umariya	Jaisinghnagar	142	4.48	45.34
	Umariya	174	5.45	42.08
	Manpur	112	3.55	40.85
Chhatarpur	Pali-II	159	5.01	46.00
	Chhatarpur	205	6.42	47.65
	Rajnagar	198	6.21	39.43
	Nogaon	146	4.60	40.02

District		General marital fertility rate	Implied total marital fertility rate	Contraceptive prevalence rate
Sagar	Londi	239	7.46	47.59
	Gorihar	189	5.94	22.85
	Bijawar	211	6.62	35.19
	Baxwaha	237	7.43	45.32
	Badamalhara	217	6.81	39.07
	Sagar	161	5.05	52.30
	Rahatgarh	156	4.92	47.60
	Jaisingnagar	185	5.81	58.85
	Rehli	179	5.61	57.92
	Deori	168	5.26	58.77
	Kesli	120	3.79	62.65
	Banda	163	5.12	43.84
	Shahgarh	174	5.46	47.37
	Khurai	160	5.03	49.40
	Malthon	166	5.20	43.01
Damoh	Bina	178	5.60	44.39
	Damoh	168	5.29	61.71
	Patharia	145	4.57	52.06
	Jabera	145	4.57	58.72
	Tendukheda	147	4.62	58.43
	Hata	150	4.73	56.98
	Patera	136	4.29	57.14
Panna	Batiagarh	151	4.73	54.20
	Panna	184	5.77	57.40
	Gunnaur	186	5.84	45.20
	Pawai	182	5.71	47.38
	Shahnagar	177	5.55	61.47
Tikamgarh	Ajaigarh	189	5.94	40.09
	Tikamgarh	166	5.22	62.12
	Niwari	133	4.18	66.35
	Prithvipur	136	4.30	63.15
	Jatara	139	4.38	56.31
	Palera	147	4.63	60.78
	Baldeogarh	182	5.72	54.58

District		General marital fertility rate	Implied total marital fertility rate	Contraceptive prevalence rate
Sehore	Sehore	165	5.19	53.79
	Budni	140	4.42	63.20
	Ichhawar	167	5.26	45.34
	Nasurllahganj	221	6.93	51.61
	Ashta	163	5.13	59.64
Raisen	Sanchi	191	6.00	42.23
	B Ganj	141	4.45	63.33
	Udaipura	151	4.74	55.83
	Bareli	238	7.45	38.25
	G Ganj	167	5.25	46.71
	O Ganj	200	6.28	45.72
	Silwani	166	5.21	44.77
Rajgarh	Khilchipur	139	4.39	47.64
	Rajgarh	122	3.85	42.37
	Narsingarh	138	4.34	47.82
	Biaora	174	5.47	47.27
	Jeerapur	131	4.12	49.25
	Pachor	142	4.48	49.33
Vidisha	Kurwai	137	4.32	28.65
	Lateri	187	5.88	51.00
	Vidisha	199	6.23	45.11
	Basoda	243	7.60	25.59
	Gyaraspur	169	5.30	44.38
	Nateran	189	5.92	35.83
	Sironj	228	7.14	26.06
Bhopal	Fanda	166	5.21	60.11
	Berasia	203	6.36	38.22
Betul	Betul	172	5.39	52.39
	Shahpur	179	5.63	51.03
	Chncholi	153	4.81	50.78
	Ghodadogri	215	6.73	57.89
	Multai	163	5.12	53.29
	Amla	160	5.02	60.51
	Prabhatpatn	120	3.79	71.44

District		General marital fertility rate	Implied total marital fertility rate	Contraceptive prevalence rate
Hoshangabad	Bhensdehi	183	5.73	66.65
	Athner	201	6.31	57.58
	Bhimpur	256	8.00	42.56
	Kesla	166	5.21	60.86
	Bankhedi	160	5.04	58.73
	Hoshangabad	137	4.31	60.48
	Babai	110	3.47	72.17
	Sohagpur	135	4.24	45.70
	Piparia	144	4.53	55.22
	Seoni Malwa	173	5.43	57.03
Harda	Timarni	195	6.11	36.67
	Harda	195	6.12	50.23
	Khirkia	195	6.11	50.07
Jabalpur	Kundam	119	3.75	51.82
	Majholi	130	4.10	53.53
	Panagar	133	4.19	61.93
	Patan	118	3.72	57.43
	Sihora	147	4.63	53.14
	Shahpur	125	3.95	57.20
	Bargi	137	4.33	62.34
	Katni	Bahoriband	143	4.50
Dhimarkheda		164	5.14	47.87
Katni		135	4.24	55.58
Badwara		214	6.71	36.50
Vijayraghogarh		214	6.70	40.49
Rithi		213	6.69	44.53
Narsinghpur	Narsinghpur	108	3.42	74.60
	Gotegaon	115	3.64	65.57
	Kareli	139	4.38	66.14
	Saikheda	103	3.26	60.16
	Babai Chichli	146	4.60	61.02
Chhindwara	Chawarpatha	119	3.75	57.89
	Chhindwara	160	5.02	62.08
	Tamia	166	5.21	46.09

District		General marital fertility rate	Implied total marital fertility rate	Contraceptive prevalence rate
Seoni	Parasia	169	5.31	56.87
	Mohkhed	143	4.51	59.52
	Jamai	147	4.62	52.44
	Sonsar	142	4.48	72.07
	Pandhurna	173	5.43	65.86
	Bichhua	152	4.77	62.39
	Amarwada	135	4.24	64.73
	Chorai	153	4.80	65.39
	Harra	145	4.56	61.02
	Seoni	144	4.52	56.93
	Barghat	131	4.14	57.44
	Kurai	149	4.69	62.07
	Keolari	148	4.66	51.10
	Lakhnadon	151	4.76	65.17
	Ghansor	144	4.54	72.71
	Chhapara	158	4.96	73.98
	Dhanora	186	5.84	68.49
Mandla	Mandla	171	5.36	71.59
	Nainpur	156	4.91	59.14
	Bichhia	121	3.83	55.84
	Mohgaon	161	5.05	56.73
	Mavai	142	4.48	59.04
	Ghughari	144	4.53	49.94
	Niwas	174	5.47	51.93
	Narainganj	147	4.62	65.94
Dindori	Bijadandi	153	4.82	60.85
	Dindori	142	4.46	48.39
	Amarpur	150	4.73	63.57
	Karanjia	163	5.12	68.35
	Samnapur	150	4.72	54.85
	Bajag	148	4.67	46.34
	Mehadwani	165	5.17	59.55
Balaghat	Shahpura	160	5.04	48.52
	Balaghat	100	3.16	51.48

District	General marital fertility rate	Implied total marital fertility rate	Contraceptive prevalence rate
Lanji	159	4.99	52.67
Kirnapur	140	4.41	44.21
Baihar	126	3.98	57.75
Paraswada	106	3.37	57.48
Birsa	113	3.57	52.61
Waraseoni	117	3.69	53.39
Khairlanji	140	4.39	48.70
Lalbarra	144	4.52	48.22
Katangi	147	4.64	50.46

Figure 1
Distribution of Development Blocks
by the Level of Marital Fertility, 1996

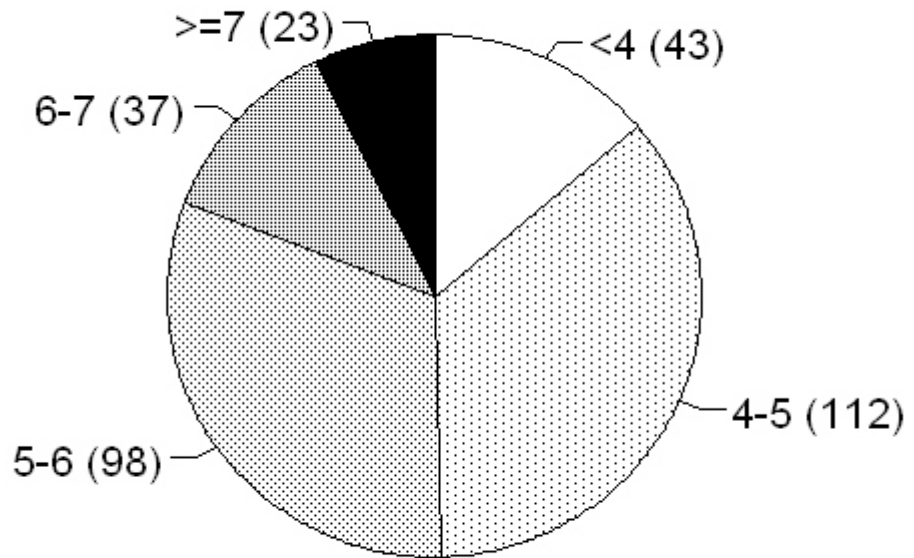


Figure 2
Marital Fertility in Administrative Divisions
of Madhya Pradesh, 1996

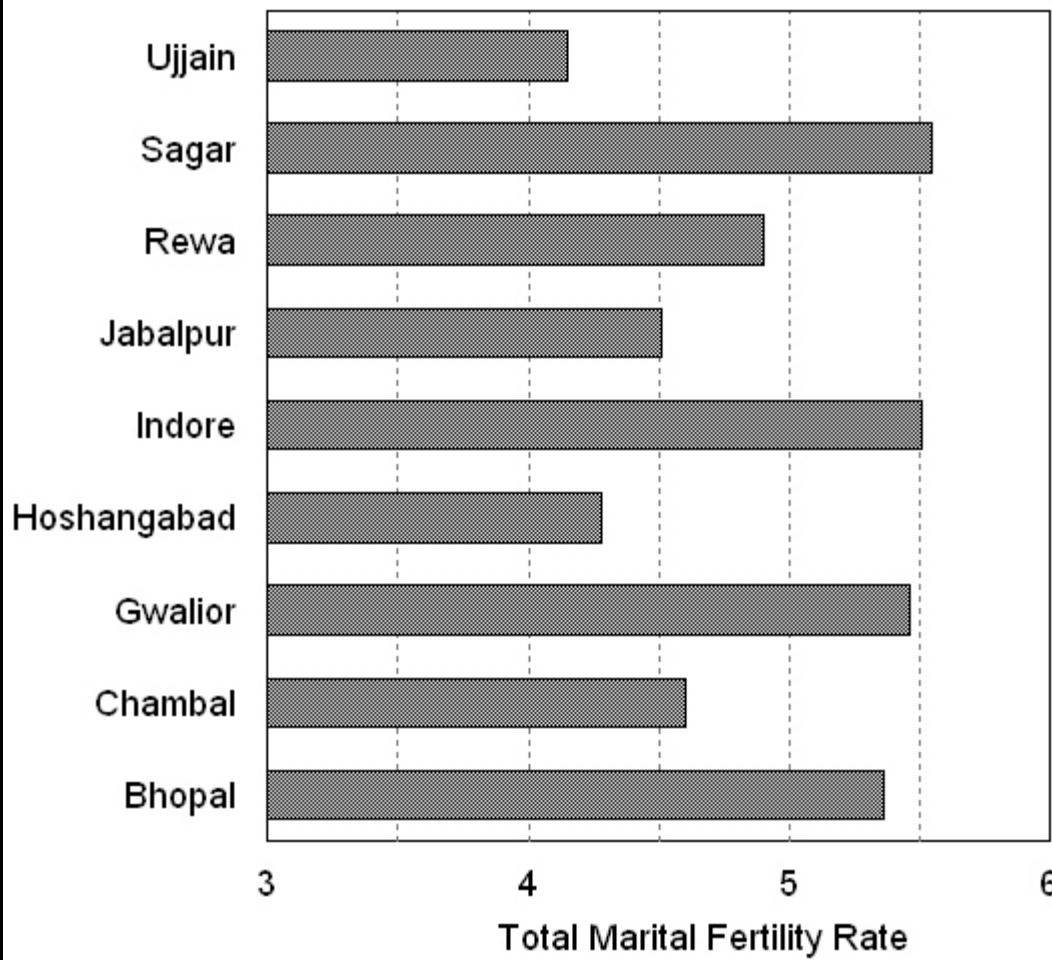


Figure 3
 Inter-district Variations in
 Rural Total Marital Fertility Rate, 1996

