Abstract

India, the second most populous country in the world, has no more than 2.5% of global land but is the home of 1/6th of the world's population. Living in a resource poor country with high population density, planners recognised that population stabilisation is essential pre requisite for sustainable development. India became the first country in the world to formulate and implement the National Family Planning Programme in 1952. Successive five year plans have provided the policy frame work and funding for building up nationwide infrastructure and manpower. The family welfare programme provides additional manpower, drugs consumables and equipment needed for meeting the health care needs of women and children. The country will have to face the challenge and utilize this opportunity window during demographic transition to rapidly achieve both population stabilization and sustainable improvement in human development.

During the last five decades there has been a steep decline in mortality and relatively less steep but sustained decline in fertility. But this decline has not been uniform throughout India. There has been a clear north-south divide in terms of demographic transition. While most of the southern states of India have entered the third demographic transition phase, the northern states are still in the second phase. It has been estimated by the Ministry of Health and Family Welfare (Government of India) that in the first quarter of this century, 50 per cent of the population growth of the country would be contributed by six northern states, while the southern states will contribute only 13 per cent of the population growth, Jharkhand being one of them. According to National Family and Heath Survey (NFHS), the state recorded the total fertility rate (TFR) of 3.3 in 2005-06, which is much higher than the replacement level fertility i. e. 2.1. The major area of concern in Jharkhand is that more than 70 per cent of its population marry below the legal age of marriage in India – 18 years. This has resulted in very high adolescent fertility. Also the fertility differential by various parameters in Jharkhand state is also very high. Fertility differentials exist by religion and caste, education and by income. A woman with no education has a TFR of 3.9, almost double of women with minimum 10 years of education (2.0). Similarly, woman in lowest wealth quintile has a TFR of 4.1 and that of women in highest wealth quintile is 1.8. Thus, there is an urgent need to understand these fertility
differentials by various elements of social structure, which would help to address the problem of population growth in the state.

In the light of present population scenario, there is an urgent need to evaluate and address the problem of fertility in India in general and North India in particular. For understanding the population scenario of Jharkhand state, a micro level study is of paramount importance. The detailed and micro level analysis in the state would help in assessing the current state of affairs with respect to population and fertility and would also identify the factors that are major impediments in achieving the replacement level fertility in the state. This doctoral work is a step forward in this direction. The major objectives of this doctoral work are firstly to evaluate the social structure and fertility status of a region, to enquire the fertility differentials with respect to social structure, to bring out the spatial variation in the fertility differential by social structure both at block and village levels and finally to test the elements of social structure which have a significant bearing on the fertility of the region. To meet these research objectives, certain hypothesis have been framed, to be tested in this doctoral work. These hypotheses are:

1. Higher the age at marriage lower is the fertility.
2. Increase in literacy rate results decline in fertility.
3. Educational status of females is having inverse relationship with fertility.
4. Increase in family income aids towards decline in fertility.

This doctoral work is an attempt to study the fertility differentials by social structure of one of the most important districts of Jharkhand – Dhanbad. It has been selected as the study area as Dhanbad is one of the fastest growing districts of Jharkhand and it is one of the 35 cities of India, having more than million population. It is located in the coal belt of India and is famous as coal capital of the country. The famous Jharia coal field region lies in Dhanbad district. Dhanbad district recorded highest population and lowest sex ratio (908) in Jharkhand state (2011 Census). According to the 2001 Census, the district recorded a TFR of 3.4, which is very high. There is an urgent need to regulate the fertility of the district, if the replacement level fertility is to be achieved. Also, the percentage of birth of order more than three is 38.9 per cent, according to the District Level Household Survey (DLHS), which again indicates towards the daunting task ahead for regulating the fertility of the district.
Since Dhanbad is one of the most important districts of the state, it needs to become a forerunner in fertility decline, to set an example, for other districts to follow.

The present work is divided into seven chapters. Chapter first deals with the concept of fertility and social structure. The factors that determine and influence fertility are outlined in this chapter. Attempt has been made to discuss those factors that are part of social structure and significantly influence fertility levels in a region. Also the concept of social structure has been traced out, since the term was first used and all those elements that form a part of social structure have been examined.

Chapter second deals with the review of literature and methodology. The relevant literature related with fertility and its determinants and works pertaining to fertility and its relationship with the society and its aspects have been thoroughly discussed in this chapter. This chapter also outlines the methodology that has been applied to meet the research objectives. A brief description of the sampling procedure and its framework, the indicators of social structure and the measures of fertility have been discussed.

Chapter third discusses the physical, demographic and economic profile of the study area, Dhanbad district, in detail. Chapter fourth assesses the social structure and fertility status in the district at block level, based on the data obtained from the primary survey. Chapter fifth observes the fertility differential by the social structure in the district at block level and the chapter sixth examines this differential at village level. Chapter seventh determines the association between social structure and fertility and identifies the variables of social structure that have significant influence on the fertility levels. And finally conclusions have been drawn.

The work is based on primary sources of data and household survey has been carried out to generate the database. A total of 1754 female respondents in the age group of 15-49 have been interviewed from 1306 households from 46 primary PSUs, spread over eight blocks of the district. Firstly, the social structure of the district has been evaluated with respect to certain selected indicators and variables. They are religion, sex ratio, housing condition, family type, family size, educational status, work participation rate, occupational status and income levels of the population. Fertility and contraceptive prevalence rate was also assessed to know about the prevailing conditions of fertility in the district.
The fertility status of the district has been evaluated with the help of General Marital Fertility Rate (GMFR), Child Woman Ratio (CWR) and Mean of Child Ever Born (MCEB). The district recorded GMFR of 143.24, CWR of 440.33 and MCEB of 3 children per woman. However there were variations among the blocks. Both Dhanbad and Jharia blocks recorded low GMFR and CWR than the rest of the blocks. This difference in fertility also highlights the rural-urban fertility differential in the district, as Dhanbad and Jharia are the urban blocks of the district. However, the MCEB shows a different picture. Both Dhanbad and Jharia had recorded higher MCEB of 3.1 and 3 children per woman respectively.

The fertility differential by social structure have been studied both at block and village levels. The indicators of social structure selected at block level are age of women, age at women’s first marriage, religion, family type and family size, women’s educational attainment, husband’s occupational status and family monthly income. MCEB has been used as measure of fertility to assess the differential at block level.

It was observed that fertility increased with increasing age of women, and decreased with increasing age at marriage of women. In most of the blocks it was recorded that fertility of women who married between the age of 20 – 24, was almost half of those women who married below 20 years of age. MCEB of women marrying below 15 years of age was recorded at 3.8 and that of women marrying after 20 years was at 2 children per woman. The district had only 16 per cent women who had married at or after 20 years of age.

Fertility by religion showed that Muslims had higher fertility than Hindus in all the blocks. The fertility of Muslims and Hindus has also been compared with respect to their socio-economic status, i. e. by their education, occupation and income. It was observed that the fertility of Muslims were higher than Hindus even when compared with respect to the socio-economic status of both the communities. However, it was seen that the gap between the fertility of the Hindus and Muslims, narrowed down considerably with increasing educational status of Muslim women. This implies that education is one of the most important factors, determining the level of fertility among a group or subgroup of population.

Fertility by family type in the district illustrated that fertility was higher for nuclear family type (3.5), followed by extended nuclear families (2.9) and joint family
type recorded lowest fertility. The reason being that nuclear family was mostly prevalent among the poor and illiterate people with large family size and joint family system, though on decline was mostly found amongst the comparatively well-offs. Similarly the fertility by family size shows that high MCEB (3.5) is recorded in families with size of 7 – 9 members and a comparatively lower family size (2.8) is recorded for family size of 9 and above.

Fertility differential by education in Dhanbad district showed that fertility decreased considerably with increasing educational status of women. The MCEB of women (1.5) with graduate and above education was almost half of that of illiterate women (3.5). The differential by occupational status showed that fertility was higher for those women (3.1) whose husbands’ are engaged in Government jobs and the lowest for those who were in private sector jobs (2.4). Amongst the rest of the occupational status, the MCEB ranged between 2.8 to 2.9 children per woman. Fertility by income displayed that fertility decreased with increasing income in the district. Highest MCEB was recorded by women (3) who lived below monthly income level of less than Rs 5000 and lowest was recorded for higher income groups (2.7). It could be deciphered from the results that the fertility differential was much more pronounced with respect to education than with income and occupation. This is suggestive of two facts. Firstly, the inverse relationship between education and fertility is confirmed and there is a potential for decreasing the fertility level of the district by increasing the educational status of the population. Secondly, it also points out towards the fact that the district is still in the early stage of development, as differentials in fertility by education are characteristics of a society that is yet to develop fully. As the benefits of development become widespread the differentials in fertility gradually disappear.

The social structure, fertility and social structure-fertility nexus have been analysed studied at village level also. Since the block and village levels are different scale of study, the indicators of social structure at village level have been modified a little. The indicators at village level are religion, sex ratio, family type, literacy rate, female literacy rate, median family income, median age at marriage and contraceptive prevalence rate.
The fertility status of the PSUs have been analysed with respect to the GMFR, CWR and MCEB. A very high GMFR of 300 and above was recorded by 7 PSUs and majority of the PSUs had GMFR between 100 and 200. Similar scenario was observed with respect to CWR, where a high CWR of 700 and above was recorded by 6 PSUs and majority of the units had CWR close to average value for the district, i.e. 430. It was observed that the urban wards of the district recorded lower GMFR and CWR. The MCEB being the measure of cumulative fertility presented a different picture. Most of the urban wards recorded high MCEB of above 3.3 children per woman. Twenty three PSUs have MCEB between 2.7 to 3.3 and only 9 PSUs recorded very low MCEB (below 2.3).

The study of the fertility and social structure nexus was undertaken to understand the fertility behaviour with respect to the indicators of the social structure for each of the PSUs. Thus an effort has been made to study the fertility differentials at a micro level.

The fertility behaviour of each of the PSUs when studied with respect to literacy and female literacy rate it was observed that none of the PSUs with high to very high literacy rate and female literacy rate had higher GMFR or CWR. Similarly the PSUs with low to very low literacy rate did not record lower GMFR or CWR. Most of the PSUs with medium literacy rate had MCEB ranging from medium to lower fertility. This difference in cumulative and current fertility is mainly due to the nature of these measures. The MCEB takes into account the entire reproductive performance of a woman and tells nothing about the current fertility scenario. The relationship between income and fertility has always been of speculations, because still there is no clear evidence whether higher income affects fertility in either positive or negative way. The behaviour of PSUs with respect to GMFR and income also did not show any obvious relationship. With respect to CWR, however, a negative relationship between income and fertility is observed. Most of the PSUs with high income recorded low to medium fertility and most of the PSUs with low family income recorded high to very CWR. The association between MCEB and income was also not very clear. The relationship between age at marriage of women and fertility, in most literature is found to be an inverse one.
The PSUs with high to very high median age at marriage recorded medium to very low GMFR and CWR. Similarly the units having very low median age at marriage for women recorded higher GMFR and CWR. Even the units with medium age at marriage recorded medium to lower value of current fertility. The relationship between family type and fertility were not very clear at micro level, thus indicating that family type had no distinct influence on fertility. The contraceptive prevalence rate (CPR) is one of the direct factors affecting fertility of a region. It is believed that higher the prevalence of contraceptives, lower will be the fertility. However, in the district, as mentioned earlier it was observed that permanent methods of contraception are generally employed once the desired family size is achieved by women. Therefore, no clear relationship between fertility and CPR has been observed. As GMFR takes into account last year births only, hence the effect of CPR is not much perceptible. CPR and CWR showed an inverse relationship. Most of the PSUs with high CPR recorded lower CWR. The relationship between MCEB and CPR is not found to be well defined in the district. The units, mostly with higher CPR recorded medium MCEB.

The fertility by social structure discussed so far points that some of the variables of social structure have strong influence on fertility while others have lesser or no effect on fertility. To statistically test the relationship between the variables of social structure and fertility, Karl Pearson’s coefficient of correlation has been applied. The technique has been applied both at block and village level. At block level a 39 independent variables have been employed to find the correlation with all the three measures of fertility, i.e. GMFR, CWR and MCEB. The correlation analysis revealed that the GMFR was found to be decreasing with increasing male education. Similarly CWR was found to be declining with increasing age at marriage, increasing male and female education, increasing family income and with increasing number of people in business and Government jobs. Higher CWR was recorded with increasing number of people in primary occupation. MCEB was found to be inversely related with age of marriage of women. Since MCEB takes into account both complete and incomplete fertility, therefore, to bring out the true nature of relationship between the variables of social structure and MCEB, it has been broken down by age of women. The MCEB of women in the age group of 45 – 49 represents completed fertility and it was found to be inversely related with literacy rate of population and number of
people engaged as daily labourers/wagers. MCEB (45-49) was also found to be increasing with higher family income and higher number of people in Government and private jobs. Thus, the hypotheses that were framed for the doctoral work have been tested and are found true with 90 per cent confidence level.

It is concluded that there exists wide differentials in fertility with respect to social parameters of the district and fertility is still very high when compared with the goal of achieving the replacement level fertility. The presence of fertility differentials suggests that there is wide potential for lowering the fertility levels of the district, which would enable the district to move towards the road to development.