Introduction
INTRODUCTION

Fertility, mortality and migration are the three main fundamental factors of population growth. Fertility can be referred to the actual bearing of children. "Fertility is gradually used to indicates the actual reproductive performance of a woman or a group of women" (Lewis and Thompson, 1965). A woman is considered fertile if she had ever borne a child. Fertility, of course is an extent that occurs over time.

During the last five decades there have been a rapid growth of population in the country. In 1951 the population of India was 36.11 crore which has increased to 102.7 crore in 2001. In the decade of 1991-2001 there has been 21.34% increase in the population of the country. The main problem of India has been sown in the seeds of the population. Inspite of high rate of economic growth India has not developed in the same pace due to rapid population growth, which can’t be equalized with the economic development. As a result the country has not showed much development. Modern science and techniques have checked mortality to a great extent but the fertility rate can’t be checked below 29.9 per thousand. The causes of high fertility rates in the country are marriage at an early age and illiteracy. The consciousness of the rural people is to be raised to words family planning and others for controlling high fertility.

In India where birth registration is limited the calculation of fertility rate is difficult. In such cases the micro level studies are important. In India the Register of Vital Statistics, complied by the Registrar General of India has information regarding births and deaths at Tahsil level. The information in this register is insufficient for detailed analysis. Therefore the data at village level are collected for micro level studies.

This work will be an attempt to highlight the fertility pattern in the urban fringes of Bilaspur and Dhamtari cities. Fringe is a region of mixed socio-economic culture. Where urban facilities are found. But it has been found in the fringe region the fertility rates are high compared to that of urban region. Thus the paper has tried to focus the factors of this high fertility rates.
The growth of population of the world depends entirely on human fertility. Any society replenishes itself through the process of fertility. Fertility is the number of total birth given by a woman during her reproductive time span. If a woman has ever born a child then she is called fertile. The measure fertility is related to the number of child that a woman has delivered in her total reproductive period.

PREVIOUS STUDY

In India the Census began in 1872 but data related to fertility was first introduced in the census of 1911. In 1981 the data of fertility state wise was published. To gather the data relating to fertility local surveys are also important. In this connection the contributions of Gokhle Political and Economic Research Organisation – Pune, Mysore Survey (1960), Registrar General Survey and International Population Science Organisation Mumbai are noteworthy.

In the study of population growth fertility is one of the main components. The maximum study in fertility is related to population. Trewartha (1953), Zelinsky (1966), Garnier (1967), Clarke (1968) and other geographers have remarkable contributions in including the study of fertility in population geography.

Before 1950's the study of fertility was region wise and limited. A few studies on fertility before 1950 are. Jain in (1939) studied the relationship between fertility and Economic and Social Status in the Punjab. Chandrasekhar (1946) prepared a full description on India's Population fact and policy. Chandrasekharan (1948) discussed some aspects of Paris Demography.

Between 1951 –1960, to mention the importance of fertility the educators have tried to improve the research on it and with the growth of population the people laid stress on the fertility problems. In 1951 Davis studied the population of India and Pakistan. V. M. Dandekar and K. Dandekar in 1953 performed a survey of fertility and mortality in Poona District. United Nations in 1954 presented a paper discussing economic and social factors affecting fertility. In the same year S. P. Jain also studied the Indian fertility trends and patterns. Another remarkable work by Frank- et-al Lorimer in 1954 was culture and human fertility; the study shows the relation of cultural conditions and fertility in non-industrial and Transitional Societies. In the

During the decade of 1961-70 due to growth of population, the educators introduced family planning in population policy. In this decade stress was laid on case studies.

fertility between white skinned and black skinned women of United States. Asish Bose in 1970 studied the urban and rural fertility differences.

Importance of family planning increased in the decade of 1971-80. During this period extra emphasis on adoption of family planning the authors gave methods. Bhowmik and his companions (1971) studied the importance of social and economic factors in demography along with the differences in the fertility patterns in respect of education and religion. In the same year John B. Wyon and John Gorden stated the population problems of rural Punjab. Henry in 1973 made clear the concept of natural fertility and controlled fertility. Spiegelman (1973) clearly stated the different methods of fertility and reproduction. In 1974 Mandelbaum prepared the differences between level of education and fertility. S. P. Jain in 1975 stated the role of family planning in fertility rate. In the same year Leibensten prepared the economic theory of fertility decline. In 1976 Bernard Berelson studied the influence of education on fertility. S. N. Agarwal in 1978 studied the relationship of fertility and age at marriage. Mahadevan in 1979 studied determinants of the differential fertility in five districts of Tamilnadu (present Mysore State). Mosk in 1980 studied the rural urban fertility differences and fertility transition.

In the decade of 1981-90 main stresses was given to micro level case studies along with which emphasis was also given to the adoption of family planning methods. Tim Dyson (1981) described the sex ratio and interrelation of fertility and mortality. In the same year Srinivasan and Jejeebhey prepared their valuable study of charges in natural fertility. Mukherjee in 1981 did the assessment of changes of fertility and mortality from census data. In 1982 R.H. Chaudhury stated the social aspects of fertility in relation to developing countries. Bhende and Kamitkar in 1983 studied the circumstances and socio-economic factors affecting fertility. Lahiri in 1984 stated reverse relationship between the of male child and fertility. Singh's (1986) study in based mainly on the rural communities of Punjab and Haryana. He studies the factors related to fertility uses. S. S. Raju in 1987 studied the regional development and family planning. In 1988 Khan, Prasad, Gupta and Ghosh Dastidar studied the performance of health and family welfare programme in India. In 1989 Ahmad Shakeel studied the fertility trend and population policy in India. In the same
year Martha Ainsworth stated the socio economic determination of fertility in Cote d'Ivoire. In 1990 G. Gurumurthy studied the relationship between culture and fertility.


After 2000 the works that have been done are as follows. Parik (2001) emphasized the relation of fertility based on the literacy level of the women. Jean and Mamta Murthi (2001) studied fertility, education and development in India. Balaiah and his companion (2001) studied the fertility attitude and family planning practices of men in a rural community of Maharashtra. Jean Dreze (2001) studied the relationship between fertility and education drawing evidence from India. Krishnan

OBJECTIVES

The objectives of this study are as follows:

(i) To study the existing fertility patterns in Bilaspur and Dhamtari cities.

(ii) To study the various aspects of population structure and their correlation with the fertility patterns among different age groups.

(iii) To study the controlling factors of fertility and their effects.

(iv) To analyze the various factors effecting fertility such as environmental, infrastructure etc.

(v) To study the prevailing systems of mother and child welfare.

(vi) To study the performance of family planning programmes with special reference to the people of Bilaspur and Dhamtari cities.
RESEARCH HYPOTHESES

(i) The fertility rate varies with communities, religions, literacy, socio-economic conditions etc.

(ii) The fertility rates among tribes are high in comparison to other communities.

(iii) The checks on population explosion shall bring economic development in the region.

(iv) Fertility rates are high in low economic status families.

(v) The higher level of female education effectively lower downs the fertility rate.

STUDY AREA

The current study is related with the two cities of Chhattisgarh namely Bilaspur and Dhamtari. Bilaspur, located on the right bank of river Arpa, is the zonal headquarter of Southeastern Central Railway. Its cardinal points are 22°5' N latitude and 81°25' E longitude. Total area of the city is 2729 hectare and population according to 2001 census is 1993042 persons. It is located at an altitude of 285 mt. above sea level. Dhamtari is a newly born city of Chhattisgarh. Its cardinal points are 24°42' N latitude and 31°35' E longitude. The total area of the city is 1165.66 hecter and population according to 2001 census 82099 persons. It is located at an elevation of 319 meter above the sea level.

METHODOLOGY

One of the main handicaps in the present investigation has been the insufficiency of published data. Though to some extend the Census Reports, Settlement Reports, District Statistical Handbook and Town Development Plan Handbook provided some basic information of the cites. For the present study wards in intracity and villages in outgrowth has been taken as the basic unit of study. The study is based on both primary and secondary data.

PRIMARY DATA: Data has been collected at household level by using schedule. The survey has been conducted from June 2004 to December 2004. The information has been collected from the head of the families and married females of 15 to 49 years age. Nearly 60 – 65 questions have been asked to the responded to get information
FIG. 1
about reproductive behaviour and family planning. Around 20-25 minute have been taken to interview each female. Thus the following four techniques have been employed to collect information from the field:

(i) Field Survey – Collection of data from each household to schedule
(ii) Interview – Interrogation of a number of selected informants.
(iii) Documentary facts: Collection of recorded information from the administrative offices and local bodies.
(iv) Observation and participation in the daily life of the people during the field survey.

CONSTRUCTION OF SCHEDULE

Structure of Schedule has been used to obtain information at household as well as personal level. The Schedule consists of four pages. In the schedule emphasis has been given on the following aspects.

(i) General information of the family
(ii) Information about married woman
(iii) Information related to fertility and mortality
(iv) Information about family planning
(v) Information on facilities at village level
(vi) Information on facilities at households level.

SECONDARY DATA: The secondary data has been collected from the following sources:

(i) Census Report, India, 2001, All data related to population viz, total population, male- female population, castewise population, age group wise population, working population, literacy etc. have been collected from this report.

(ii) Economic and Statistical Department, Bilaspur and Dhamtari - Data of fertility, infant mortality, crude birth rate, crude death rate has been obtained from the register of Vital Statistics. Besides land use maps and data has also been obtained from this office.
(iii) Indira Gandhi Agricultural University Raipur: Meteorological data of Bilaspur and Dhamtari has been collected from here.

(iv) Other Information: Information regarding number of wards, number of outgrowths, total city area, and other information related to city are obtained from town planning office. Along with these several news bulletins - Chhattisgarh Sandarv and local magazine has help by providing several information.

SAMPLING

(i) Sample unit: Married women of 15-49 age group

(ii) Sample size: 2176 married women (1434 from Bilaspur and 742 from Dhamtari)

(iii) Sample urban areas: Bilaspur and Dhamtari cities

(iv) Universe: Urban Chhattisgarh

(v) Sample design: for the convenience of the study both the cities of Bilaspur and Dhamtari are divided into two parts viz intracity and outgrowth. Intracity is merely organized area where as outgrowths are the transitional zone between the urbanized intracity and the rural villages. The wards of the intracity region are first classified by Layer method on basis of socio-economic status mainly giving stress on caste structure. Taking at least one ward from each category of layer method seven wards from each intracity of Bilaspur and Dhamtari have been selected randomly. Villages of the outgrowths are classified on the basis of their location and taking at least one village from each main cardinal direction, seven villages in Bilaspur and six villages in Dhamtari outgrowth have been selected randomly.

The data and information have been tabulated processed and analyzed using various statistical methods. The data has been represented with the help of suitable maps and diagrams and has been analyzed and discussed in the following chapters.
SCHEME OF THE WORK

For the gradual and systematic study the present research is divided into eight chapters.

**Chapter I** deals about the background of the study area. Information in this chapter is divided into two parts (A) Geographical background of the Study Area: Location, Administrative Setup, Geology, Physiography, Natural drainage, Climate, Soil Vegetation, Land use, Industry, Transport. (B) General Information of Selected Wards and Outgrowth

**Chapter II** deals with the demographic background of study area which includes Growth of Population, Density of Population, Age Composition, Sex Ratio, Literacy, Occupation, Family income, Type and Size of Family, Marital Status, Religion and Community based on Language.

**Chapter III** gives us information regarding different fertility rates. Rates include Crude Birth Rate (CBR), Fertility Ratio (FR), General Fertility Rate (GFR), Age Specific Fertility Rate (ASFR), Cumulative Fertility Rate, Total Fertility Rate (TFR) Completed Fertility Rate (CFR), Gross Reproduction Rate (GRR), Net Reproduction Rate (NRR), Child Woman Ratio (CWR), Infant Mortality Rate (IMR)

**Chapter IV** gives information about the demographic factors affecting fertility. This includes Present Age of Woman, Age of Woman at Marriage, Age at Effective Marriage, Duration of Marriage, Age of Mother at the time of First Birth, Interval between Marriage and First Birth, Interval between two successive Birth, Age difference between Husband and Wife, Duration of Breast Feeding, Sex Ratio at Birth, Birth Order, Childlessness Parity, Parity Progression Ratio

**Chapter V** discusses about the socio economic factor influencing fertility. This covers Fathers' Occupation, Mothers' Occupation, Family Income, Economic Level of the Family, Type of Family, Size of Family, Caste, Religion, Community based on Language, Son Preference

**Chapter VI** discusses about determinants of fertility. This chapter covers Mothers’ Education, Fathers’ Education, Parents Literacy, Educational Level of Family
Chapter VII deals with family planning and mother and child welfare. This includes Adoption of Family Planning, Knowledge of Family Planning, Type of Family Planning, Educational Level and Adoption of Family Planning, Family Income and Adoption of Family Planning, Sex and number of Children and Sterilization, Pre Natal Vaccination, Place of Delivery, Delivery Attendant

Chapter VIII Comprises the summary and conclusion of the total research work.

Lastly Bibliography includes the list of references used and studied for the research work and Appendix includes list of abbreviation used in tables and diagrams and schedule.