Chapter I
Appraisal of the Problem

1.1 Introduction
1.2 Meaning of population and population geography
1.3 Significance of the study of population geography
1.4 The place of population in Indian Economy
1.5 Place of population in Maharashtra
1.6 Choice of the Region and Topic
1.7 Aims and objectives of the present study
1.8 Data base and methodology
1.9 Review of Literature
1.10 Chapter Scheme
1.1 Introduction:

Population geography is one of the most important branch of Human Geography has made valuable contribution towards the understanding of spatio-temporal patterns of population. The study of population distribution has been the success human geographers since long population and associated problems have a studied in the population geography. Arthus Geddes signaled the growing awareness among geographers about the significance of population studies in geography. Population developed relatively rapidly during the Second World War.

Population is a dynamic phenomenon with humorous aspects that relate it to environment and development population is the synthesis of all geographic phenomena. Population provides the focus to all studies. It is central in environment and development which derive their significance from ‘man’ or ‘population’ the inhibitor and developer. The study of population and its various aspects such as population of fertility and growth distribution, composition, migration etc, has often been made somewhat in isolation as being something purely distinct from other studies.

An integrated approach to the study of population, environment and development as a whole remains a significant area of geographical research. In 1953 Trewartha offered a tentative scheme of the contents and organization of materials in population geography, he confined it to geography of population in the past, population number such as distribution density migration growth and qualities of population and their regional patterns of distribution including physical as well as socioeconomic qualities.
1.2 Meaning of population and Population Geography:

Environments cannot be viewed in isolation. Population and development vitally affects the state of environment. Therefore it would be necessary to consider population environment and development at interacting aspects of the global phenomena. Development to be meaningful has to be sustainable. Development population studies developed relatively rapidly since the second World War. There large scale displacements of population from war torn occupied and persecuted areas. After the war the reconstruction of trade and economy was confronted with worldwide shortage of labor in Europe U.S.A. and Australia and even Japan. Migrations also took place of the Gulf and Middle Eastern countries. The creation of new countries in Africa after the end of colonialism and the portion of India in to Bharat and Pakistan led to massive population transfers. The creation of Israel also caused migration of Jewish communities from all over to the new land of promise. Such demographic transitions from one habitat to another with varying environment and social-economic milieu focused attention on the change and processes of adoption of populations. There were intricate processes in population transformation. This needed deeper study of population and related factors some governments encouraged population growth to make up for decimation during the war. Added to these dimensions were the emerging impact of science and technology on man environment and development. The interdisciplinary approach to population study is provided in certain measure by the holistic science of geography.

When the study of population was emerging as a discipline Warren S. Thompson in his book entitled “Population problems described population studies” as being concerned with the following questions related to their broad areas of study. (1) What are the changes that are
taking place in the size of the population and how are these change brought about? What is the significance of these changes from the standpoints of human welfare? (2) Where are the people found in any given population group and how do those in one group differ from those in the other?

These questions clearly indicate that the study of population is concerned with its size or members its structure and characteristics its distribution and the changes taking place in it over a period of time. It is also implied in this description that the subject matter of population studies includes the study of fertility, mortality migration and social mobility that is the component of change in the size structure, characteristics and distribution of population, before delving any further in to the details of the nature of population studies. It is important at this Juncture to have a broad understanding of the various concepts used in the description of the scope of population studies. One important area of study covers the components of population change or the factors responsible for change in the size of population. It must be understood that the population of any place at a specific time a function of three types of events, births, deaths and migration. There are four ways in which the number of people in any area can undergo changes, (1) Children may be born in that area (2) the inhabitant of that area may die (3) people from other areas may move in to that area and (4) inhabitants of that area may move out. These components of population change namely, births, deaths and migration are identified as fertility, mortality and migration respectively and are known as demographic or population variables because the size growth, structure and distribution of any population are determined by them. A study of any population is made through a study of these demographic variables.
The scope of population studies is quite wide on the one hand this subject is concerned with a qualitative study of the size structure characteristics and territorial distribution of human population and the changes occurring in them. On the other hand it is concerned with the study of the underlying causes of population phenomena. Thus a student of demography is engaged in describing and comparing the size structure characteristics and territorial distribution of the population and the changes occurring in it through the study of fertility, mortality, migration and social mobility. He also attempt to explain population phenomena and situations and the change in them in the context of the biological, social, economic and others setting and cannot be studies in isolation. Hence while describing, comparing or explaining the determinants and consequences of population phenomena, social phenomena have to be taken into consideration. It can be seen that the study of population is multi disciplinary in nature, involving an understanding of biology genetics, mathematics, economics and cultural anthropology. After first discussing has been difference between “population studies” and “demography” and then tracing the origin and development of population studies.

1.3 Significance of the Study of Population Geography:

The discipline of the study of human population is known by two terms (1) population studies and (2) demography, population studies can be understood easily as studies concerned with population whereas demography can be explained by pointing out that it is derived from the Greek word “demos” meaning people and hence is the science of population. Though these terms are often used interchanged some scholars have tried to distinguish between “demographic” analysis and population studies”2.
It is considered that demographic analysis is confined to a study of the components of population variation and change. whereas population studies are concerned not only with population variables but also with the relationships between population changes and other variables social - economics, political, genetic geographical and the like\(^3\).

The term ‘demography’ may be used in a narrow sense as synonymous with “demographic analysis” or formal demography. This is primarily concerned with quantitative relations among demographic phenomena in abstraction from their association with other phenomena\(^4\). Demography may also be conceived in a broad sense to include in addition to the quantities study of population. The study of inter relationship between population and socio-economic cultural and other variables. Many demographic scholars do not approve of creating such an artificial distinction between demography and population studies\(^5\). According to Larimer “a demographer limited to the merely formal treatment of changes in fertility, mortality and mobility would be in a position like that of a formal chemist observing the compression of mercury with no information about associated changes in temperature or the constitution of the liquid. The concept of pure demography except as the skeleton of science is therefore an illusion”\(^6\). Any meaningful study of population therefore has to be interdisciplinary.

It was in the middle of the seventeenth century that population studies emerged as a discipline in England. Most of its early development took place in England, France, Germany and a few other European countries.

Later the United States of America contributed substantially towards the development of this discipline. In this section the development of the discipline of population studies, is traced and some important landmarks in the progress of this discipline are highlighted.
The development of population studies in India is discussed. The founding fathers curiosity and concern about the size and characteristics of the population have had a long history. Investigation however was sporadic and received little systematic attention for they were usually undertaken in response to some specific problem faced by society. The credit for initiating a new field of empirical research in population studies goes to John Graunt an English haberdasher who is generally acclaimed as the Father of Demography or Population Studies. His pamphlet Natural and political observation made upon the Bills of Mortality Published in London in 1662 is the first important landmark in the history of population studies, Grunts observations mainly contained a quantitative analysis of morality and only incidentally that of fertility and migration. The bills of mortality from which Graunt obtained the date for his analysis were weekly current reports on burials and christenings in a population of nearly half a million persons in London and its environs. These reports were compiled and minted regularly from 1603 onwards by parish clerks. Graunt assembled the data contained in these reports for the period 1604 to 1661 and prepared a report which is today regarded as the first. Systematic and objective study of population. It is said that in the nightmare of events recorded in the bills of mortality he sought and found order. The works of Graunt, petty and Halley inspired further research in Germany the Netherlands Sweden and other European countries in 1761 - 62. Johan peter sussmilch a Lutheran clergyman who lived during the region of fed Rick the Great wrote a massive book on population consisting of nearly 1200 pages and an appendix of 68 tables. By combining the Swedish, German and French data he tried to construct mortality tables of universal applicability sussmilch based his findings on a large number of observations and concluded that generally there is an excess of women over men in the adult ages. He is considered to be the
first person to emphasize the law of large numbers implying that the value of the findings increases along with the number of cases on which the findings are based. Observing the frequencies of remarriages among men and women “he concluded that men are more prone to remarry”. He also studies the factors influencing fertility such as age at marriage disruption of marriage by death prolonged nursing of infant’s effects of a various diseases etc. He also observed that deaths were most frequent in the first few weeks of life and that the number of deaths declined to a low level around the age of fifteen with a great deal of effort he tried to estimate the population of the world in the third edition of his treatise. The Divine order published in 1765. This was the first such attempt ever made. He also noted like Gregory king that population grew in geometric progression. The observation of sussmilch was however interpreted mainly in a theological manner. He saw the divine hand in the regular movements of the populations. Early explorer’s in the field of population studies hailing from different social strata were engaged in varied avocations and had different ideologies. Yet these amateurs had one thing in common their desire and enthusiasm to discover the hitherto unknown relationship especially in quantitative terms in the vital processes of life and death. They all shared a respect for empirical observations.

Most of the research on population during the eighteenth and the nineteenth centuries was carried out in the field of mortality and rarely in the field of population dynamics. Such a one sided development was not unexpected for the public was mainly concerned with conquering epidemics and diseases. Two social reforms programmes concerning mortality life insurance and public health also made great demands on mortality analysis. Insurance companies needed precise data on mortality and hence efforts were concentrated on mortality research. Another development was the acceptance by Government of the responsibility of
protecting the health of Citizen by undertaking public health programmes. Evaluation of such efforts in the field of public health called for data on deaths and related topics.

It was in France that fertility first started decline towards the end of the eighteenth century a decline which continued even in the nineteen century. The Chief Statistician General of France Commented in 1847, that he considered the moderate fertility of French families as the indicator of intellectual progress order and foresight.\textsuperscript{11}

Important Developments in the Nineteenth Century. Three important developments in population studies took place in Europe and in the United States in the nineteenth and twentieth century the development of the probability theory in statistics. The beginning of the census operation and the establishment of the system is civil registration.

Development in the Early Twentieth Century, in the early years of the twentieth century demographers form England other European countries and the United States started taking interest in the study of fertility. The birth rate in England had started declining since the late nineteenth century and in order to investigate its causes. The national birthrate commission was appointed in 1916. Even before that a question on the fertility of married women was asked at the time of the census of 1911. In 1922 A. M. Carr-Saunders biologist published his book. The population problem containing a systematic statement of the problems of population size and growth and a discussion of the genetic question up to 1938 there was no post in the British Universities devoted exclusively to population studies and there were very few scholars whose main interest was in this field. Even Carr Saunders who devoted himself mainly to Population Studies was only professor of social sciences. In 1930 professor Lancelot Hogben who was greatly interested in population problems was appointed to the chair of social biology a position in which
he continued till 1937. After which the departments was abolished in 1938 for the first time an academic post was created in Britain when R.R. Kuzynski was appointed as reader in demography in the London school of Economics\textsuperscript{12}.

The developments in the united - states of America are also worth noting Johan Durand considers Walter Wilcox to be the first American demographer\textsuperscript{13}.

A professor at Cornell University Wilcox published his statistical study of divorce in 1891. He also influenced the development of other demographers. It was however in the 1920 that population studies really took root in the United States in 1925 Louis I Dublin and Alfred J. Lotka published a treatise on the stable population model. Lotkas contribution is even today recognized as an important landmark in the developments of population studies In 1922 the Scripps foundation for Research in population problems was established at Miami University with warren Thompson, the noted demographer as director and P.K. Whelpton another important demographer as his association. The Population Association of America was established at Princeton University in 1937 under the directorship of Frank W. Note stein.

The Developing Countries Since the end of Second World War there has been a spectacular progress in the field of population studies. A noteworthy feature of this development was the interest in the study of Population Created in under - developed countries like India, Pakistan and Shrilanka etc. Two important developments after the second world war were responsible for this interest and for widening the scope of population research the rapid decline in the mortality of the low income countries was the first such development the second being the political emancipation of several Afro - Asian Countries which till then had been under the colonial rule of some European Country or the other. With
independence came raised aspirations and hopes for the removal of poverty and for raising the standard of living of the people and thus ensuring for them a better quality of Life. Thus a new era of planning for development dawned in these countries and terms such as “Economic Planning”. “Planning for Development” “Five Years Plan” etc comes to be widely used.

1.4 The place of population in Indian Economy:

As for as the size of population concerned, India ranks second in the world next only to China. India’s landscape is just 2.4 percent of the world area where as its population is nearly 16.85 percent of the world population. India accounted for 19.96 percent of the estimated population of developing countries in 2001. These facts clearly indicate that the pressure of population on the land in this country is very high. How alarming is the situation in this country can be easily followed from the fact that the national income of India is presently even less than 1.2 percent of the total world income. India’s population according to the census of 2001 was 102.70 crore. According to the census of 1901, the population of the country was 23.83 crore since then in a period of 100 years the population of the country increased by 78.87 crore. This is viewed in the context of a relatively slow economic growth is really an alarming situation. However the population has not increased in this country at a uniform rate this is obvious from the population figure given in Table 1.1.

Since independence there has been a rapid decline in the mortality rate, particularly due to control of epidemics and improved medical facilities. The magnitude of fall in the mortality rate is for greater than what was expected in the early 1950. The planning commission and the census commissioner had envisaged a continuation of the 1941-51 trend in 1951-61 Therefore when the actual rate of population growth turned
out to be about 1.96 percent in 1951-61 the planners were taken by surprise.

Table 1.1

Population Growth in India 1901 – 2001

<table>
<thead>
<tr>
<th>Year</th>
<th>Population in Crore</th>
<th>Average Annual Growth rate in %</th>
<th>Density of Population per Sq.km.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1901</td>
<td>23.83</td>
<td>0.18</td>
<td>77</td>
</tr>
<tr>
<td>1951</td>
<td>36.10</td>
<td>1.25</td>
<td>177</td>
</tr>
<tr>
<td>1961</td>
<td>43.91</td>
<td>1.96</td>
<td>142</td>
</tr>
<tr>
<td>1971</td>
<td>54.82</td>
<td>2.22</td>
<td>178</td>
</tr>
<tr>
<td>1981</td>
<td>68.33</td>
<td>2.20</td>
<td>216</td>
</tr>
<tr>
<td>1991</td>
<td>94.63</td>
<td>2.14</td>
<td>274</td>
</tr>
<tr>
<td>2001</td>
<td>102.71</td>
<td>1.93</td>
<td>324</td>
</tr>
</tbody>
</table>

Source: The population of India and Pakistan Govt. of India officer of the Registrar General pocket book of population statistics New Delhi (2001)

This unexpected development caused great anxiety to the Government. The rate of population growth was 2.2 percent per annum during 1961-71 which was still higher than that in the preceding decade. The Government could however draw some satisfaction as it was somewhat lower than what was expected. The 1981 census indicated that the rate of Population growth during the 1970 remained more or less the same as it was during 1960. Even the 1961 census indicated that the annual rate of Population growth during the 1980 was 2.14 percent. Thus the expectations that the rate of Population growth would decline significantly in response to the family planning programme of the government did not came true Registrars Generals Population Projections for 1996-2016 had suggested that the rate of Population growth would decline 1.84 percent per annum during 1990. However these projections turned out to be incorrect. The census of 2001 has shown that the rate of
Population growth remained as high as 1.93 percent per annum during the 1990. Hence this country even now remains in the second stage of Demographic Transition and is encountering Population explosion. It is both a cause and a consequence of underdevelopment of the country.

Population trends are functions of not only birth and death rates, but also of the level and direction of migration. Since in the Indian context migration is not a significant factor we shall not consider it. To understand India's existing Population problem will suffice to examine the trends in birth and death rates during the past few decades. A mere perusal of Table 1.2 makes it clear that from 1951 to 2000 there has been some decline in the birth rate. In the same period the death rate has however declined significantly. In 2000 it was just 8.5 per thousand as against 27.4 during the 1950 the birth and death rates were almost equal between 1901 and 1921 this explains why Population did not rise in this period. Their offers in spite of epidemics were checked. This brought down, the death rate considerable. For the last fifty years, there has been a steady fall in the infant mortality. In the second decade of the twentieth century infant mortality rate was 218 per 1000 live birth where as new 2000 it is 68 per thousand 1000 live births. Small pox which took a heavy toll of lives has been completely eradicated.

The Population explosion is a concrete reality in India and we must analyze its implications for future economic development. The relationship between Population and economic development is very complex yet in most of the discussion on this unrealistic positions have been taken not only by non economists but also by economists and demographer in India for example the overwhelming view is that the country's existing Population is not an asset considering the available utilizable resources and the level of technological progress. Further growth in it will result in an additional burden on the economy in the
sense that it will make larger demand on resources for unproductive consumption leaving little for productive purpose. Hence Population in India is the major constraint on its economic development. Taking partial view of the reality this view looks so much convincing that one has a tendency to ignore the role of other factors in India’s underdevelopment. We shall show that the causal relationship between rapid population growth and underdevelopment believed to be existing in this country is rather tenuous. Therefore it is wrong to believe that Population control as best can facilitate economic development but it cannot put this country on the path of rapid economic growth. Most people who argue that population growth are a major to development assume that rapidly growing population would necessarily arrest development by lowering down the land man and capital-labor ratios. In an otherwise retrogressive economy because a thing invariably happens a causal relationship is assumed to be existing between population growths and under development and thus other factors are ignored. When we examine this issue in the specific context of India, we generally come across the following two arguments.

In the first place it is asserted that the pressure of population on land has been steadily increasing and with it land-man ratio is becoming increasingly adverse. This in turn is proving to be a serious obstacle to development according to the 2001 census. The density of population in the country was 324 per sq.km.as against 117 per sq. km. in 1951. This increase in density of population may look alarming if one makes the assumption that over the years neither the Utilizable resources have increased nor the technological knowledge has grown. Had nothing of this sort happened the population growth would indeed have been disastrous for the country. However population growth should always be seen in relation to development of productive forces. In an economy
where productive forces remain arrested due to retrogressive socio-
economic relations favorable land man ratio will be of little help. The
near stagnation in India during the British period in spite of lower density
of population clearly proves this point. Since independence though the
country has recorded a rate of population growth which is unprecedented
for the subcontinent and the density of population in isolation looks quite
alarming yet the country has not only succeeded in breaking the low level
equilibrium trap but has also made some advance on the path of
development. A lot of evidence of development from other densely
populated countries further confirms that there is no negative correlation
between density of population and underdevelopment. But in India’s case
it must be admitted that some of the gains of economic growth have been
wasted on supporting the growing population. Had India’s population
growth been modest, the country’s development performance would have
looked for more impressive.

Some other economist follows a different line of argument. Their
main contention is that due to rapid growth of population over the years
its pressure on agricultural land has increased and cultivable land per
capita has declined. In their opinion this situation is hardly conducive to
development. When we examine the facts we notice that nearly 55 crore
people were dependent on agriculture in 1991 as against 25.2 crore in
1951. No doubt in all these years some new land has been brought under
cultivation. Nevertheless per capita cultivable land has declined.
Presently it is a little less than 0.17 hecter as against 0.33 hectares in
1951. The growing pressure of population on land has also resulted in sub-
division and fragmentation of holdings. On these fragmented holdings it
is contended that there is not much scope for raising the farm
productivity. The presence of disguised unemployment is also often
mentioned to reinforce the argument that further increase in population
will put additional burden on agricultural land which it is now finding increasing difficult to sustain. However theoretically it is possible to point out the weak premise of the above argument. Like Malthus protagonists of the theory that growing pressure of population on land would block development in the country, have little faith in the capabilities of mankind and the technological progress.

1.4.1 Capital Growth and Capital Formation:

The other argument which finds extensive support in academic as well as non-academic circles is that rapidly growing population makes increasing demands on resource for unproductive purpose and this hinders capital accumulation. And since growth is assumed to be a function of capital accumulation it is quite logical to infer from the fact that in a country like India, where rate of population growth continues to be high much development would not materializes. This argument through not entirely wrong misses two basic points having great relevance for any backward economy including India. In the first place saving in such an economy is done mostly by the people in relatively higher income brackets. From whatever limited information is available about birth rate in a country like ours does not erode the saving potential of the country. Secondly for the poor people an additional child is not a liability as they hope to derive greater benefit from him in terms of income services and security than the cost they would be required to incur on his upbringing. Even if their expectations prove to be incorrect the country’s savings would not be affected the only thing that might happen then would be that their personal consumption would fall under these circumstances many of these people will find themselves being pushed below the poverty line.

Until 1970-71 the net domestic savings rate in India was less than 10 percent of the net domestic product. Obviously this was not enough to
sustain economic development and thus foreign aid was obtained on a big scale. Most economists in this period were convinced that rapid population growth was a major hindrance in raising the rate of domestic saving though the later experience proved to be otherwise after 1970-71 the rate of net domestic saving rose to about 11 percent and thereafter for eight years fluctuated around this level. Net domestic capital formation of this order has been considered enough by W.W. Rostow and many others for moderate rate of growth. Rostow asserts that in the wake of stage the effective rates of savings and investment rise from 5 percent to 10 percent\textsuperscript{14}. India successfully accomplished this task during the 1960 and 1970 in spite of the rapid growth of population. Later on though there was no decline in the rate of population growth. The rate of net domestic saving recorded further rise and in 1990-91 was 15.1 percent. Since then the net saving rate has fluctuated around 14.5 percent. During the 1990 growth rate also rose to around 5.7 percent though rate of population growth remained stuck at 1.93 percent per annum. Therefore a high rate of population growth at least in the recent years did not prove to be a major constraint on capital formation and also did not adversely affect the growth performance of the Indian economy. In the recent years the net saving rate has failed to rise above 16.0 percent the existing low level of the saving rate is largely due to negative saving in the public sector and only a legible amount of saving in the private sector. It has now become obvious that if the country has failed to step up its growth rate to 7 to 8 percent level. It is not because there are other constraints on capital formation and development.

Computed by taking into consideration the standard hectares namely 0.4047 hectares. Using this criterion the relative co-efficient of over population is computed by dividing the unit of 0.4047 of a hectare by per capita land. Simple mean, Median, Mode, correlation also used for
population growth, the suitable cartographic techniques would be applied to preseas. Level of population development would be measured by applying statistical techniques. The secondary data will be collected from different sources mainly from the government published records like districts census, handbook and reports of socio-economic abstract of very districts. These sources would be used for the mapping and interpretation the chapters.

1.5 Place of Population in Maharashtra:

The present state of Maharashtra or the old Bombay state prior to independence in not a back ward state expecting certain area in various corners of the state. Even during the British period irrigation dams were constructed and irrigation was single most prime factor which completely transferred the where land scape from a simple cropping pattern and maximum population of Maharashtra depend on agriculture.

Maharashtra’s diversity of physical features and geography is reflected in her people and culture. Virtually every major is represented in the state. The Deccan plate as in central Maharashtra is largly populated by tribal groups. The Bhils, Mahadev kolis, Gonds and Warlis are the largest tribal community. On the northwesterns coast the Warlis continue their frugal reflective existence, worshipping the Mother goddess Warlis myths reveal that death come upon the human race as a results of the humiliation of Mother Earth. The Warlis appease this goddess of tress and plants. Their death songs attempts to unravel. The mysteries of life and dealth revealing their simple awe of nature in all its innocence.

The recently concluded 'Indian Census 2011' showed that the population of India has crossed the 1 billion mark and the population of Maharashtra is somewhere around the 110 million. Considered to be one of India's leading states in terms of revenue and contribution to the GDP, the Maharashtra Census 2011 bore some interesting results. Mumbai, a
city that is considered to be the financial capital of India is part of the
state of Maharashtra and has a population of over 100 million, making it
the country's most populous city. Maharashtra also has other cities like
Pune, Nashik and Nagpur which are more densely populated than other
areas. People from different parts of India over the years have shifted to
Maharashtra in general and Mumbai in particular in search of livelihood.
Mumbai is one of the major metro cities in India with a widely
cosmopolitan culture and a vibrant way of life. The Maharashtra census
2011 showed that the population of the state is growing by about 16% each
year which is slightly below the national average of about 17%. The
state of Maharashtra is the third largest state in the country with an area
of about 3 million Sq. Km.

The state is located in western India and has a long coastline to its
west. The state has many places of national importance and some of the
prime airports and ports in the country. Maharashtra borders the states of
Gujarat, Madhya Pradesh and Karnataka. The state has a sex ratio of
about 940 which is fairly equal to the national average. The state has a
literacy rate of over 80% which puts it among the top states in terms of
literacy. The Maharashtra census 2011 shows that the state is doing well
in terms of literacy rate and sex ratio and continues its march towards
being one of the leading states in the country. The capital city which is
also the largest city in the state of Maharashtra is Mumbai. The languages
spoken in the Maharashtra state includes Marathi. In total Maharashtra
(MH) state comprises 35 districts.

According to 2011 census the total population of India is 1.21
billion out of them the population of Maharashtra is 11.23 carore. Out of
total population of Maharashtra, 45.23% people live in urban regions.
The total figure of population living in urban areas is 50,827,531 of
which 26,767,817 are males and while remaining 24,059,714 are females. ...
The urban population in the last 10 years has increased by 23.67 percent. Sex Ratio in urban regions of Maharashtra was 899 females per 1000 males. For child (0-6) sex ratio the figure for urban region stood at 888 girls per 1000 boys. Total children (0-6 age) living in urban areas of Maharashtra were 5,402,522. Of total population in urban region, 10.63 % were children (0-6).

Average Literacy rate in Maharashtra for Urban regions was 89.84 percent in which males were 93.79% literate while female literacy stood at 85.44%. Total literates in urban region of Maharashtra were 40,809,128.

Of the total population of Maharashtra state, around 54.77 percent live in the villages of rural areas. In actual numbers, males and females were 31,593,580 and 29,951,861 respectively. Total population of rural areas of Maharashtra state was 61,545,441. The population growth rate recorded for this decade (2001-2011) was 10.34%. In rural regions of Maharashtra state, female sex ratio per 1000 males was 948 while same for the child (0-6 age) was 880 girls per 1000 boys. In Maharashtra, 7,445,853 children (0-6) live in rural areas. Child population forms 12.10 percent of total rural population.

In rural areas of Maharashtra, literacy rate for males and female stood at 86.39 % and 67.38 %. Average literacy rate in Maharashtra for rural areas was 77.09 percent. Total literates in rural areas were 41,703,097.

1.6 Choice of Region and Topic:

The choice of the region and topic under investigation has been influenced by serveral consideration. Firstly, Maharashtra state comprising the 35 districts and 349 tahsils, I west side of Maharashtra 720 kms sea cost are lying from north to south. Sahyadri montains ranges are also north to south in west side. All the paris of Maharashtra is borned
by Deccan trap or is known Deccan plateau. Ajantha and Satmala ranges are lying in northern part of Maharashtra. The region has major part under uneven topography. As a result these characteristics make this region a physical entity and homogenous unit for geographical investigation.

Secondaly, there are uneven climate in Maharashtra. Such as westerns ghat and east vidharba is highly averagre rainfalls and middle part of Maharashtra is low rainfalls area this part called as drought prone area. About 80% of the annuals rainfalls as recived in the southwest monsoon period. The variation in the rainfalls from year to year is fairly large. According to the Maharashtra Water Irrigation Commission (1999), considering water availability in river basins, cultivable land, augmentation of ground water, ground water recharge facilitated through watershed area development, use of modern irrigation techniques and improvement in the water application systems on farms, the irrigation potential of the State can be increased upto 126 lakh hectares. The Commission has also anticipated that the share of surface storage and wells in command area is around 85 lakh hectares. Number of major, medium and minor irrigation projects has been taken up by the State Government to tap the maximum possible irrigation potential. The details of irrigation projects taken up in the State and the irrigation potential created therefrom are given in table no. 1.2.

The total irrigation potential created in the State by the end of June 2006 through major, medium and minor irrigation projects taken together was 52.90 lakh hectares. The share of major, medium, minor (State sector) and minor (Local sector) irrigation projects in the total irrigation potential created was 44.06 per cent, 13.40 per cent, 19.96 per cent and 22.58 per cent respectively. The additional irrigation potential created during 2005-06 was 1.17 lakh hectares showing an increase of 2.2 per
cent over the cumulative achievement by the end of June 2005. The actual utilization of irrigation potential in 2005-06 was 20.13 lakh hectares (38.05 per cent) as against the potential of 51.73 lakh hectares created up to the end of June 2005. Despite of huge spending during the five-year plans the achievements for creation of additional irrigation potential is for below the target set. It is therefore essential to monitor the achievements of irrigation sector continuously.

**Table No. 1.2:**

**Number of Irrigation Projects and Potential Created in the State**

<table>
<thead>
<tr>
<th>Sr</th>
<th>Item</th>
<th>Major</th>
<th>Medium</th>
<th>Minor (State Sector)</th>
<th>Minor (Local Sector)</th>
<th>Total Minor</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>No. of projects<em>Completed up to 30 6 2006</em></td>
<td>32 183</td>
<td>2394</td>
<td>9133 17222</td>
<td>2847 1947</td>
<td>16917</td>
<td>51160</td>
</tr>
<tr>
<td>2</td>
<td>No. of projects ongoing up to 30 6 2006**</td>
<td>22 39</td>
<td>328</td>
<td>1726 2994</td>
<td>120 364</td>
<td>2105</td>
<td>7637</td>
</tr>
<tr>
<td>3</td>
<td>Irrigation potential created, a) Upto 30 6 2006 (lakh ha.)***</td>
<td>23.31 23.27</td>
<td>7.09 6.92</td>
<td>10.56 9.84</td>
<td>2.59 2.51</td>
<td>5.57 5.43</td>
<td>0.36 0.36</td>
</tr>
<tr>
<td>4</td>
<td>Actual utilization of irrigation potential during 2005-06 (lakh ha.)</td>
<td>11 17</td>
<td>2.02 2.98</td>
<td>0.88 1.36</td>
<td>0.14 0.59</td>
<td>0.99</td>
<td>6.94</td>
</tr>
<tr>
<td>5</td>
<td>Area under irrigation on wells in command area in addition to Sr. No. 4 (lakh ha.)</td>
<td>4.63</td>
<td>0.77</td>
<td>0.57</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>

* Irrigation potential fully created, ** Irrigation potential partly created, *** Provisional

Source: Economic Survey of Maharashtra 2006-07

Thirdly, this has many part of the region has blak loamy allural soil. Agriculture is developed in the western Maharashtra, Nashik and Jalgaon district. They have deep and medium black soil because they are having huge irrigation facilities Godavari, Bhima, Krishna, Panchaganga, Koyana, Penganga, Venganga, Manjara are the Importants Rivers to be the region. There are so many small rivers in the region.
Fourthly, the pressure of population of agriculture land was more in 1991. During 1991 as per capita cultivated land was very less. It varies from district to district. It is essential to divert the population to other business.

Fifthly, there is wide scope for the agriculture in industry in Deccan plateau. It means that there is wide scope to increase agricultural land in the region.

Sixthly, the density of population is very uneven. The highest density of population is in Mumbai and lowest population density is in Gadchiroli district. How population densities are different in different districts of Maharashtra state. Why it is different and where it is different is the main objectives of the study. From such type of studies many problems should arise with the help of this study, we can solve many problems regarding the population of Maharashtra. Such type of study will be useful for population policy makers, different planners, demographer's economists and many others.

1.7 Aims and Objectives of the Present Study:

After independence of India, population of our country as well as Maharashtra state is continuously increased. Population pressure is increasing is affected to natural resources. Main objectives of this study are as follows.

1. To study distribution and density of population in Maharashtra during the period 1951 to 2001.

2. To examine how physical and socio-economic factors are responsible for the uneven distribution of population and density of population during the period 1951 to 2001.

3. To study the spatio-temporal changes in population of Maharashtra State from 1951 to 2001.
4. To study the sex-ratio of population of Maharashtra State during the period under study.

5. To discuss the literacy of population in Maharashtra State from 1951 to 2001.

6. To study the urban and rural population of Maharashtra State during the period under study.

7. To study the natural resources and population of Maharashtra from 1951 to 2001.

8. To study the population policies for Maharashtra State.

1.8 Database and Methodology:

This work is totally depends upon secondary data. Data are collected from census report from 1951 to 2001. All secondary data is collected from the reports published by government of Maharashtra, Government of India and International Population Study Centre, Mumbai, total work is depends on published data only. The primary data is the raw data collected through different sources for which special questionnaires were designed and information collected through various offices and peoples questionnaires were used for the data collection of every district.

The broad picture of present pattern of land utilization, cropping pattern, trends of production and yield is prepared with the help of secondary data obtained from socio-economic review, district census hand book etc. A micro level study include plot to plot survey of land covering information of relevant aspects such as sources of irrigation area under several landuse. The data thus collected through primary and secondary sources were processed and represented by statistical and cartographic techniques. As the study purports to geographical in spirit the chorographic and chorological methodologies have been adopted.
These involve the description and interpretation of the regional patterns revealed through choropleth methods for studying the pressure of population on agricultural land, agricultural. These densities are computed by using variable viz. area and population.

For the study the distribution and density of population of Maharashtra state very simple method of volume of change in used. Different types of densities are calculated region wise or administrative division wise. Many quantitative methods like crude fertility rate, mortality rate, population growth rate, level of urbanization are calculate in this study.

The distributions of population, different densities of population are show by choropleth maps. Fertility and mortality rate of population, growth rate of population are showed by different graphs and diagrams.

1.9 Review of Literature:

1) Clark (1972) in his book population Geography he mentioned that the human characteristics that form the content of population geography seems to fall in the three groups (a) absolute numbers (b) physical, such as age, sex, race intelligence etc. Social such as marital stays family household, residence, literacy, education, language, religion, nationality ethnic group etc, and economic characteristic such as industry, occupation, income etc. (c) Population dynamic, such as fertility, mortality, migration, change etc.

2) Wilbur Zelinsky (1966) the population geographies are concerned with three distinct and ascending levels of discourse. (a) The simple description of the location of population numbers and characteristics (b) The explanation of the spatial configurations of these numbers and characteristics and (c) The geographic analysis
of population phenomenon. In simple words he suggested that population geography studies population phenomenon in the context of space relationship and aggregate nature of places.

3) The Demographic literature in ancient India is neither systematic nor in organized from. It has no significant relevance to present economic order. For the detailed study of population literature related to ancient India one will have to turn to pages of Indian religious books and writings of ancient philosophers and academicians. The different sources of ancient thoughts can be divided in two parts. In the first part, classic literature like four Vedas, Rugveda, Yajurveda and Atharwaveda and works depending on them like Upnisheda, Purans Ramayana and Mahabharata etc. are studies. This Smritis of Yajnavalkya Goutam, Neruda, Vidur and’ Arthashastra of Kautilya’ are the major sources of economic thought of ancient and medieval period.

4) The literature evaluating critically the ancient economic thoughts written by modern writers from the second category of the sources of ancient literature ‘Kautilya’s Arthashastra’ of Dr. R. Shama Shastri ‘Ancient foundation of Indian Economic Thoughts of K.T.Shah ‘Economic of history of Ancient India’ of A.K. Das and ‘Aspect of Ancient Economic thoughts’ of K.V. Ranga Swami Ayangar etc are few names in which views related to State, Health Finance etc. resemble with modern thoughts. Not only this concept of social welfare planned family and economic laws had been discussed in these books in different contexts. The Varnashrma system of division of whole life prescribed by these thinkers automatically minimizes the maternity period from 35 years to 24 years and checks the early marriages, family dependency and provides a ration ate division of labour. Apart from this celibacy,
birth control adds self control had been discussed in ethical and religious context.

5) Like Chinese thinkers Roman Philosophers Cicero, Seneca, Pliny the Elder, Marcus, Aurelius, Epictetus, Cato, Columella etc. were also in favour of no - limitation of population of a town. They visualized a big state rather than a town. For them population increase was not a significant matter because they look it for military purpose only. Their main aim was the expansion of empire for which sliders were needed. Haney has very beautifully differentiated the Athenians and Romans in these words. The Athenians were thinkers keen and analytical. The Roman was men of actions, warriors and statesmen. “The former left a philosophy which profoundly affected law and practice.”

6) Though there is no single opinion about this period even then it can be safely taken from 476 AD to 1500 AD which to had been confirmed by this statement of Eric Roll – “It is generally considered to cover a period of roughly a thousand years from the fall of Roman Empire in the fifth century to about the middle of the fifteen century”. The total works of this period can be put in two parts (1) 400 to 1200 AD (2) 1200 to 1500 AD.

7) According to Trewartha man was the pivotal point from which all other elements are observed and derived their meaning and significance. Thus it is population that furnishes the focus. While defining population geography Trewartha stressed that it was concerned with understanding the regional differences in the earth’s covering of people (Trewartha, 1969, p.87) such a contention of Trewartha was to be viewed in the context of our science the central theme of which was the understanding of the
processes of spatial organization wherein population contributes the most dynamic element.

8) In France, Beaujeu - Garnier brought out a volume on Geography of population in French (1956-58) which was later translated in English by S.H. Beaver (1966) whereby she considered the description of demographic facts in their present environment context studying also their causes their regional characteristics and possible consequences as the foremost of population geographers.

9) In 1970, George E. Demko, Harold M. Rose and George E. Schnell jointly edited a book Population Geography: A redress wherein the introductory chapter on "The Geographic Study of Population" was written by the editors themselves. According to them geography occupied an important place among many disciplines which also include a formal study of population because its emphasis upon spatial distribution and subsequent questions of spatial interaction make population geography a unique discipline among social sciences. Population geography according to them is that branch of geography which treats the spatial variations in demographic and non-demographic qualities of human population and the economic and social consequences stemming from the interaction associated with a particular set of conditions existing in a given areal unit.

10) Gray L. Peters and Roberts P. Larkin (1979) who brought out their population geography problems concepts and prospects howere do not offer any definition of the sub field and feel satisfied with a simple mention of various definitions of the subject forwarded by earlier contributors the contents of the book cover a vast variety of population characteristics including distribution compositions
change fertility, mortality, mobility residence, population policy, population and food supply etc.

11) The publication of Population analysis in Geography (Woods 1679) added a new dimension to the study of population in geography. Although the book begins with a differentiation between population geography and demography and ends up with future developments in population studies and population geography yet the book is greatly oriented towards the use and development of models in analyzing population behavior.

12) Melezin (1963) describes population geography as the study of population distribution and productive relationships existing within various population groups the settlement network and its fitness use fullness and effectiveness for productive goals of society.

13) As the present pattern of population distribution is basically represented by a network of settlements and because the types of production primarily influence the changes in the settlement patterns therefore the geographic study of population should be indentified with the analysis of territorial groupings of settled places with emphasis upon their economic functionality (Kovlev 1959, p.8) the remaining aspects of population should be left to demography.

14) Fiszgerald (1946) while confessing vagueness defined social geography as concerned with spatial arrangements of patterns of phenomena which are of social as district from political or economic significance to man.

15) Watson (1953) the main concern of the social geography was the identification of different regions of the earth’s surface according to the associations of social phenomena related to the total environment.
16) According to Phal (1967) social geography was the study of the patterns and processes involved in understanding socially defined population in their spatial setting.

Das K. N. has examined ‘The Population Pressure and Intensity of Cropping in the Kosi Area, Bihar’. He has used Pearson’s correlation co-efficient, student’s ’t’ test, and rectilinear regression of y upon x by the method of least square to find out correlation between population pressure and intensity of cropping. He has suggested that the problem of increasing pressure of population can be solved by increase in yield by using intensive land use and by providing irrigation facilities.

Krishan, Gopal and Gupta focused on ‘Regionalization of India on the Basis of Population Potential of Cities’. The present study is an effort to regionalize India on the basis of population potential. Its purpose to identify dominates cities, henceforth called regional centres and to delimit the population zone of each regional centre so as to obtain the framework of newly devised regions. He concluded that population potential is a convenient substitute criterion for determining the zone of influence of cities particularly of purposes of planning.

He worked on ‘Trend of Out Migration in Tehri-Garhwal. He made an attempt to study out migration rate, pattern of movement and composition of migrants on the basis of households. In Tehri-Garhwal by caste, sex and board age group. An effort has been made to correlate the geographical factors responsible for such out-migration. The study reveals the in the pattern and rate of out
Migration impact of economic, social and culture factors are clearly observed. It is future concluded that out migration is increasing with rapid increases in the education and literacy. Caste wise analysis indicates that out migration brought positive changes in the field of economic and cultural development.


He worked on ‘Growth, Infants Mortality and Family Planning in India’. He focuses on three issues—first the socio economic repercussions of reduced infant mortality in 20th century India, secondly the period population growth from 1871 and it’s implication of India’s efforts to raise her standard of living, and lastly he outlined India’s valiant efforts to promote family planning amongst her hundred million married couples. He suggests that India may yet be the first major country in the world to solve the problem in a democratic and voluntary fashion.


Authors wriotes on ‘Changing Occupational Structure in Darjeeling Hills’. They studied changes in the occupational structure in the hill division of Darjeeling district from 1961-1981. The study reveals a shift of workers away from cultivation, through the 4th five year plan. The government has undertaken several measures to stop the shifting of cultivators from cultivation to cottage industries and other occupations; it was not possible to stop the shifting. According to them mountain territory of Darjeeling is ideal for the development of tourism and cottage industries.

22) Sharma, P. R. (1978):

He has attempted to study ‘Spatio-Temporal Patterns of Population Growth and Distribution of Chhattisgarh Region’. He has analyzed the growth of population of Chhattisgarh-region since 1901 to
The researcher has tried to project the population of the region and suggested that the population of this region would be doubled over 30 years. He has correlated density of population with the proportion of cultivated land. He obtained the positive correlation with density of population and cultivated lands in different tahsils of the study region. He observed highest density of population in the areas of highest percentage of cultivated land and on the contrary lowest density group in the areas of lowest percentage of cultivated land.

He has analyzed ‘Mortality Patterns and Trends of Poliomyelitis in Maharashtra’. The study is based on secondary sources of data collected from records of Vital Statistics Pune, M. S. The districtwise and citywise data for a period of 14 years from 1970 was used for the analysis of mortality patterns. The study shows that i) mortality rates are increasing successively every year in the state. ii) The thickly populated districts like Mumbai, Kolhapur, Pune, Nagpur, Jalgaon and Sangli show higher incidence. iii) Poliomyelitic is exclusively the disease of urban origin in the state. The urban averages are 2 to 3 times bigger than the states averages.

24) Prithvish, Nag (1989):
He has examined, ‘A Global View of Countries by Their Population Size and Growth Rate and the Geographical Implications of the Size and Change’. The study reveals that more developed countries have only 24.56 percent of the world's population (with a growth rate of 0.6 percent). On the other hand, the less developed countries have three times the population than that of the more developed countries and more than three times the
growth rate. He also analysed migration and geopolitical issues, population projection and geopolitical strategies in the world.

25) Issa, Shair (1994):
He explains ‘Population of Dubai City: Growth, Distribution and Structure’. He studied three aspects growth, distribution and structure of population of Dubai city. By using Chi-square analysis, he tried to find how these sectors differ in their socio-economic attributes, i.e. sex, age, marital status, educational status, religion and occupations. The result of analysis indicates that there were significant differences among the sector in all attributes studied.

26) Vimlan, Sheeja (1996):
She was focused on ‘Population Density Gradient in Raipur city’. Her analysis shows that, there is distance density decay relationship within a city, except in a few patches. She noticed that with the gradual increase in distance from the city towards the periphery there is a decline in population density. The betterment of living in outer zones of the city may be achieved by establishing new service centres. He used Clark’s formula of distance- density decay of population which get to be true in case of Raipur city.

He was focused on ‘Impact of Population Pressure in Coastal Areas in India’. According to him the costal tract consist 17.1 percent of total area and 18.85 percent of total population of the country. Due to lack of natural resources, the area is resulted in backwardness and creating high population pressure. Nearly 47 percent population is under poverty line. The land are highly fragmented and degraded due to population pressure. He focuses on natural calamities like flood, drought and cyclones in coastal areas and its impact on economy of the region.
28) Tripathi, Rajmani (1997):
He writes on 'Socio-Economic Profile of Scheduled Caste Population in India'. He has attempted to identify the existing pattern of distribution and relative strength of scheduled class population along with demographic, social and economic characteristics. He concluded that, the general socio-economic conditions of the scheduled castes in India have mained very low. During the 7th plan period 37.4 percent of India live below poverty level (Planning commission 1983) and the scheduled castes constituted majority of it. The hopeless condition is a combination of both economic exploitation and social ostracization. So it becomes imperative that they receive an objective understanding from the government and from the society that will open up vistas of symbiotic communication.

Authors examined, 'The Trends in Sex Ratio and Various Sex Differentials Such as Rural-Urban Age and Caste of Seoni District (M. P.)'. The spatial pattern has also been analysed taking village as a unit. The study presents an analysis of 1600 small size villages. The sex ratio has recorded a continuous decreasing trend since the beginning of the present century. The rate of decline is relatively higher than that of Madhya Pradesh. The sex ratio is higher in rural areas in comparison to urban areas. The study shows that the sex ratio varies by age due to varying incidence of mortality among the two sexes in the region.

In his research paper entitled 'Geographical Analysis of Rural Population Concentration in Maharashtra' has studied the distribution pattern of rural population in Maharashtra. He has used
location quotient to analyze population concentration of the region. The study reveals that the concentration of rural population is more in the districts of Western Maharashtra where the proportion of land under irrigation is more and road density is also higher. The concentration of population is less in hilly and forested areas particularly in Marathwada and in Vidarbha.

Authors have evaluated, ‘Seasonal Variation in Birth Rate in Chopada Tahsil of Jalgaon District (M. S.)’. This work is based on primary sources of data. Month-wise and seasonal birth rates have been calculated for the year 1999. The study shows highest birth rates in rainy season and lowest in summer season. Month-wise analyses of birth rate reveals highest birth rates in July and lowest in February.

32) Bhagat, R.B. and Sharma, Summit (2001):
Authors focused on ‘Quality of Life, Gender Bias and Fertility Behavior in Urban Haryana A Case Study of Rohatak City’. The study concluded that around one-third households of Rota city are characterized to low or very low quality of life there is a decrease in actual and desired family size but gender bias still prevails among households with high quality of life. He points out that households belonging to high quality of life want at least one son and in order to achieve it they are likely to resort to even female feticide in the wake up of modern medical techniques. This further reaffirms that with development gender bias may not necessarily decline. Improvement in the status of women through access to employment, educational, and property rights are essential for reducing their dependency and for achieving gender equality in society.
He writes on ‘Socio-Economic Occupational Structure and Nutritional Level in Muslim Slum Dwellers in Raipur City’. He concluded socio-economic occupational structure and the state of formulating a state urban policy for sustainable development. She concludes that state government should prepare comprehensive strategies for integrated urban development at zonal, district and regional levels. According to her, smaller urban cities within broader economic network, provision of urban services by private sectors, micro level planning for solid waste management, housing co-operatives and urban transport should be given due attention as the primary tool for development of the urban forms in the state.

He has analysed population problems of Goa in his thesis entitled ‘An Analysis of Population Problems in Goa’. His work is based on primary and secondary sources of data. In his work, he has analysed the impact of Portuguese rule on the population characteristics of Goa. He has also studied the impact of tourism on population problems of Goa. In his research, he observed that due to equal family laws introduced by Portuguese to all religious communities, higher age at marriage, difficulties in getting divorce and remarriages were some of the factors responsible for the lower birth rate than those for Maharashtra and India during the Portuguese rule for the state of Goa.

Prasanth has studied demographic characteristics and socio-economic development in million cities of India. He has correlated the demographic characteristics of million cities with the development level in India. The study is based on secondary
sources of data collected from census of India. Mean, quartile and standard deviation techniques have been used to analyse the population characteristics. The study concludes that the million cities in western and south central India have high density and high growth rates. Densities in northern and eastern India are not all that high though growth rates are high.

Author has examined, 'Urbanization and Development in Maharashtra From 1961 to 1991'. The paper attempts to study urbanization in Maharashtra in relation to relevant dimensions of development over four decades after its reorganization on a linguistic basis. The relationship between urbanization and other indicators of development has been examined with the help of linkage analysis. The study reveals that urbanization in the state is still fueled by tertiary activities, particularly by trade, commerce and manufacturing.

1.10 Chapter Scheme:
In the first chapter, introduction meaning of population geography significance of the population geography place of population in Maharashtra. The place of population in Indian economy, aims and objection of population, database and methodology has been studied.

Second chapter deals location and boundaries of the study region, historical background, physiography, drainage, climate, soil and natural vegetation.

Third chapter throws light on irrigation, livestock, transport facilities, distribution of population growth and density and sex ratio.

Chapter fourth deals literacy and occupation structure of Maharashtra state.
Chapter fifth throws light about urbanization migration and level of population development in study area.

Chapter sixth is studied fertility rate, mortality rate last chapter seventh covered with problems of population and population policies with summary conclusion and suggestion.
References:


3. Ibid p.2.


10. Ibid, P.131.

11. Ibid, P.143.

