ECONOMIC, SOCIAL AND DEMOGRAPHIC DEVELOPMENT OF SELECTED INDICATORS IN HARYANA AND PUNJAB: A DISTRICT LEVEL ANALYSIS, 1981-1991

Dissertation submitted to the Jawaharlal Nehru University in partial fulfillment of the requirements for the award of the degree of

MASTER OF PHILOSOPHY

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2002**

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CERTIFICATE

I, **LALIT KUMAR**, certify that the dissertation entitled " **ECONOMIC, SOCIAL AND DEMOGRAPHIC DEVELOPMENT OF SELECTED INDICATORS IN HARYANA AND PUNJAB: A DISTRICT LEVEL ANALYSIS 1981 – 1991**" submitted by me for the Degree of **MASTER OF PHILOSOPHY** is my bonafide work and may be placed before the examiners for evaluation.

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ACKNOWLEDGEMENT

For
My Parents

CONTENTS

LIST OF TABLES

LIST OF MAPS

Map-1

HARYANA AND PUNJAB
LOCATION MAP
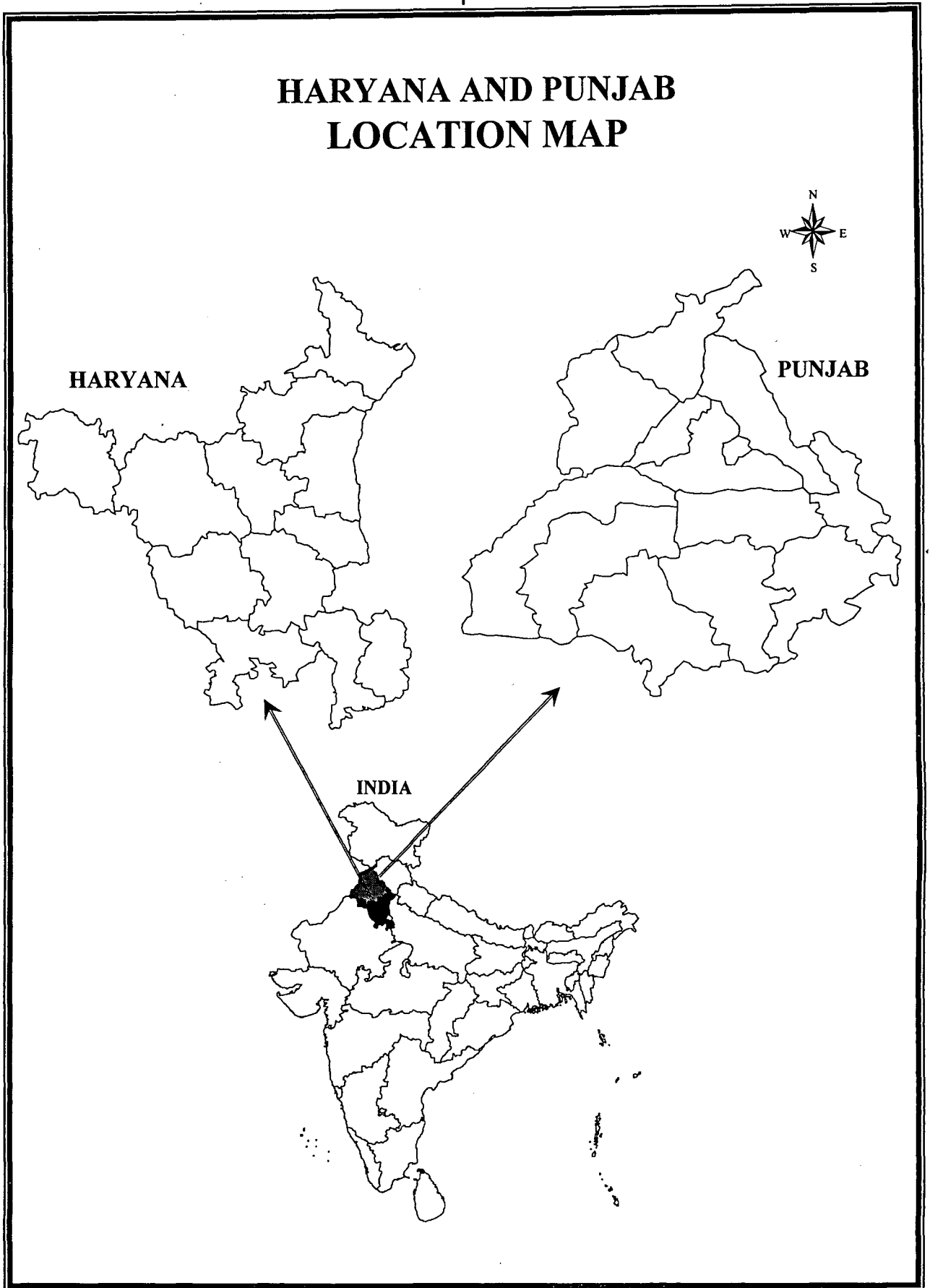
CHAPTER-I

INTRODUCTION

I.1 STATEMENT OF THE PROBLEM

The word 'development' reflects 'change. Any region of change is either negative or positive. Conceptually the term development is the state of change from given situation of a region to become a better one within the given period of time. It shows that change in positive direction is a basic component of development. The concept of development is not merely quantitative aspects, but it is also related to qualitative assessment. In its qualitative aspects it coincides with the welfare objective.

Development is also a systematic process, simultaneously operating on different structures of a system and affecting the inter-relationship between these structures and processes conducted at different level within the system. Its application touches almost all the aspects of human life.

Within the development process the economic, social, infrastructural and demographic aspects play a main role. It is like the secondary and tertiary arteries of the blood circulation of body. According to Rao,[1] "the link between infrastructure and development is not a once for all affair. It is continuous process; and followed by process in infrastructure, if we all to fulfill our declared objectives of a self accelerating process of economic and social development."

Infrastructure can be divided into two types: Physical and social. The former consists of transportation (Roads, railways etc.), electricity, irrigation, telecommunication, housing and water supply. They work as direct inter-mediate inputs of production. On the other hand, social infrastructure broadly included education, health, nutrition, sanitation, child health care, recreation and banking and others forms of financial facilities. Their contribution to productive activity although indirect in some occasions no less important.

Comparison of levels of development of any region exhibits spatial disparities in economic progress and social well being. Amongst various factors which lead to inter-regional disparities, the historical factors (attention of rulers/ governments/ administration), non informality of natural resources and infrastructure, socio-economic consciousness, efforts, motivation and enter-preneurship ability are significant enough.[2] All these factors and infrastructural facilities play a very important role in the process and patterns of development and result in different levels of economic and social well being witnessed in any region/state/country.

In this study, the selected states are Haryana and Punjab. Haryana's infrastructural condition and status of development was poor at the time of its creation in 1966. Immediately after its constitution Haryana started tremendous progress in the area of agriculture, industries and making development of socio-economic infrastructure. Based on the above mentioned progress demographic condition also started in proving. Haryana has the distinction in India, to provide electricity and fresh water to all villages. More than 90 percent of villages have been connected by pucca roads and served by education facilities.

Punjab one of the major state, of India is aptly described as the sanctuary of Indian traditions and rich cultural heritage. At the time of partition of India, Punjab was not developed enough. The process of development started after independence due to green revolution. Punjab becomes the most agriculturally developed state with in the country. After reorganization Punjab, the planning process for the development is started. Punjab has developed a dense network of roads and railways and other infrastructural facilities, which has enhanced her development further.

In view of analyzing the inter-districts disparities within a state, it is necessary to measure the level of socio-economic and demographic development different districts. After an attempt should be made to identity the backward regions and reasons behind their backwardness.

In keeping this view in mind an attempt has been made in the present study to find out the characteristics features of the states and measure the level of socio-economic development by taking a large number of indicators of development in the different districts of selected areas.

I.2. OBJECTIVES

The main objectives of the present study are as below:-

1) To measure the level of development in the districts of Haryana and Punjab at two points of time (1981-91) with reference to indicators pertaining to economic, social , health and demographic aspects.

2) To find out the change that had occurred in selected indicators overtime.

3

3) To find out the existing disparities among the districts by these selected indicators.

Lastly to attempt a regionalisation based on composite development index.

I.3. STUDY AREA

In the present study, Haryana and Punjab states have been taken as a study area. The detailed information about both states are given below:

Haryana

Haryana came into existence on November 1, 1966 as a result of the linguistic reorganization of the former state Punjab into two states. Hindi speaking areas as Haryana and Punjabi-speaking areas as Punjab.

Haryana means "the Adobe of God" from Hari (the Hindu God Vishnu) and Ayana (home).[3] The state is surrounded by Utter Pradesh in east, Punjab in the west, Himachal Pradesh in the north, and the great expanses of Rajasthan in the south. Union territory of Delhi just borders Haryana. The administrative boundaries of Haryana have been changing from time to time in changing political conditions, but the geographical and natural boundaries of the state have remained the same. There are the Shivalik Hills in the east; the north-western boundary is provided by the range of Aravali Hills, which run through southern Delhi and the Gurgaon district up to Alwar. River Ghaggar is the boundary in the west.

Climate – The climate of Haryana over most of the year is of a pronounced continental character-very hot in summer and markedly cold in winter. The maximum temperature

recorded during the months of May and June, is as high as $49^{0}C$; on the other hand, it drops to as low as $2^{0}C$ to $3^{0}C$ in January.

The rainfall in the region is low and erratic except in part of Karnal and Ambala districts. The maximum rainfall is about 216 c.m., occurring in the foothills only. The minimum rainfall is 25cm, in the southern part. The rainfall is unevenly distributed during the year except for the two well-marked seasons, namely, the monsoon from mid June to September end.

Soil – Formed almost entirely of alluvium, the state is situated towards the depressions of the river Ganga and Indus. It is a broad level plan standing nearly on the watershed between the basins of two rivers. It is a vast ground of moist land. In the whole of region except the flood-plains of Yamuna and the Ghaggar (locally called 'Khaddar') , the alluvium is of the old type containing sand, clay, silt and hard calcareous concentrations about the size of nuts, known as 'Kankars'.

In the Khaddar the deposits of alluvium are of the recent type. They consist of coarse sand and some silt regularly deposited by the rivers and small mountain streams of the Indo-Gangetic watershed.

In the south-western part, a great deal of wind blown sand has been piled up in the form of sand dunes. The dunes are at times many meters high and extend several kilometers in length. The alluvium is covered by sand, making the region as arid and unproductive as a desert.

Natural region – Haryana can be divided into two natural areas, sub Himalayan Terai and Indo-Gangetic plain. The plain is fertile and slopes from north to south with a height above the sea level, averaging between 700 to 900 ft. South-west of Haryana is dry, sandy and barren.

The area of state is 4412 sq. kms. and has 16.46 million (1991) and 21.08 million (2001) population, distributed over 16 districts. The density of the state is 372 (1991) and 477 (2001) person per sq. km. It is very high in comparison to the national average.

Punjab

Punjab is located in the north-western part of India. It is bounded in the north by the state of Jammu and Kashmir, in the east by the state of Himachal Pradesh. Haryana and Rajasthan is situated in the south and on the west Punjab is bounded by Pakistan.

Punjab in its present from came into existence on November 1,1966 consequent to the linguistic reorganization of the older unit. Punjab covers an area of 50362 sq. km. The word Punjab is a compound of two persion word Panj (five) and _ab_ (water), meaning the land of five waters, that is rivers. These are Sutlej, Beas, Ravi, Chanb and Jhelum.[4] The present Indian state of Punjab however is no longer the "land of five rivers". After the partition of India only the Satlej and the Beas flows within its territory while Ravi flow along part of its western boarder.

Most of the Punjab is a flat plain, sloping gently from about 800 ft. above the sea level in the north east to about 600 ft in the south-west. Physiographically the state can be divided into three parts. The Shiwalik hills in the north-east, to the south of the

Shiwalik hills extend a narrow and undulating foothills zone, locally known as _chos_. The third part is a broad flat tract with fertile alluvial soils.

Climate – Punjab climate varies from semi-arid to sub humid. Summer is very hot and winter is fairly cold. The sub-tropical latitudinal and continental location of Punjab makes the variation of temperature from month to month very high. Though the minimum air temperature rarely drops below 0^0C, ground frost is a common phenomenon in mid-winter. On the other hand, the maximum temperature is very high and frequently in May and June it exceeds 45^0C.

The amount of rainfall in Punjab ranges between 250 mm ad 1000 mm. Maximum rain fall occurs in the Shiwalik Hills and the minimum towards the desert of the west. Seventy to eighty percent of total rainfall is concentrated during the three months of south-west monsoons and the rest comes during the winter months. There is a wide difference in the amount of rainfall experienced in east and west Punjab.

Soil – The Punjab plain lies in the Indo-Gangetic drainage system, and is formed by deposition of alluvium brought down from the Himalayas. The south-western Punjab has grey, red, regosal and alluvial soils. In central Punjab the soil has been developed under semi-arid conditions. The soil is sandy loam to clay. In the Eastern Punjab, soils have been developed in the sub-humid areas. There are also patch of grey brown padzolic soil and reddish chestnut soils which have medium fertility and texture is loamy to clay.

I.4. DATA BASE

Because of its vary nature, the present study is based on secondary data. It has been taken from various publications.

The major sources are reported publication by:

1) District profile, Centre for Monitory Indian Economic (CMIE) 1987, 1997, 2001.

2) Statistical Abstract of Punjab and Haryana, Economic and Statistical Organization Government of Punjab and Haryana 1981 and 1991.

3) Fertilizer Statistics, The Fertilizer Association of India, New Delhi, 1981 and 1991.

4) The Census of India: Economic Tables of Punjab and Haryana, 1981 and 1991; and Occasional Papers on Infrastructural Facilities and Workers and Their Distribution 1981, 1991, 1997.

Other than the aforesaid sources, information has also been collected from the intensive literature review of books, journals and other government documents.

I.5. <u>METHODOLOGY</u>

I.5.1. Selection of the spatial unit

For any, study on regional development there is needed to identify an appropriate unit of analysis. Two levels, states or a district area are considered significant for practically all purposes. So district level has been chosen as spatial unit for the study.

I.5.2. Choice of Indicators

According to Kundu A.,[5] "An indicator, viewed as a combination of matter (data) and a matter of relation to theory, can be conducted through a correct sequence between

factual and logical order. It is therefore through an appropriate transformation of variables within a theoretical format that an indicator can be obtained."

The proper choice of indicators constitutes an important part of methodology. The basis should not be the logic of mathematics but conceptualization of social reality, which should reflect the transformation of resource potential of any region/section of study into development.

Now-a- days role of indicators of regional development seems to be most crucial because they serve two basic purposes. First, they help in crystallizing the goal of planning in terms of specific objective or targets, and secondly they help in measuring the progress made towards the goals in relation to the fixed target.

In present study, total of twenty two indicators have been selected for analyzing the district wise development. Out of twenty two indicators of regional development, eight have been chosen for economic development, eight have been considered to analyze the social and health development and six indicators have been selected to analyze the level of demographic development for the different districts of selected states.

The list of Indicators is as follows:-

Economic indicators

1) Fertilizer consumption in kg/ha

2) Gross irrigated area as % of gross sown area

3) Per capita bank credit to agriculture in Rupees.

4) Per capita bank credit to industry in Rupees.

5) Per capita value of agriculture production in Rupees.

6) Length of Metalled surface road per 100 sq. km.

7) Percentage of inhabited villages having Post & Telegraph facility

8) Percentage of inhabited villages having telephone connection.

Social and health indicators

1) Number of primary schools per lakh population

2) Number of middle/higher schools per lakh population

3) Number of pupil per teacher in primary schools

4) Number of pupil per teacher in middle/higher schools.

5) Percentage of primary health centres per lakh population.

6) Percentage of inhabited village having medical facility.

7) Number of hospital and dispensary beds per lakh population

8) Percentage of household having safe drinking water and toilet facility.

Demographic indicators

1) Percentage of literates to total population (excluding age group 0-6)

10

2) Percentage of female literates to total population (excluding age group 0-6)

3) Sex ratio (number of females per 1000 males)

4) Urban population as percentage to total population

5) Percentage of workers to total population

6) Life expectancy at birth

I.5.3. Measurement of regional disparities

Regional disparities in the level of socio economic development has been measured with the help of simple method of coefficient of variation have been calculated for each indicators of development. Therefore disparities in the indicators of development is a good measure of inter district variation.

C.V. calculated as:

C.V = **S.D.** $/\overline{\text{X}}$ * 100

S.D. = standard deviation of the indicators

$\overline{\text{X}}$ = mean value of the indicators

Co-efficient has been calculated for two points of time i.e., 1981 and 1991. It helps us in arriving at the conclusion that whether disparities decreased or increased over the time period and which district is marked by large disparities.

11

I.5.4. Composite index

Problem arriving in comprising different indicators of development into one composite index of development. Prior of seventies scholars followed an approach involving aggregation of value of indicators and given rank to areal unit according aggregation value. Ashok Mitra (1961) in his study followed rank method. On this method ranks are given to different areal unit for different indicators and then the ranks of each unit are added. This method is simple but defective.

To construct a composite index for economic, social and demographic development, Principal Component Analysis method has been chosen. The Principal Component Analysis is a branch of well known multivariate technique of factor analysis. It is a relatively straight forward method of transferring a given set of variables or Principal Components that the orthogonal to all variables. It is designed primarily to synthesize a large number of variables into smaller number of general components, which retain the maximum amount of descriptive ability. The two factor analysis method had been adopted in the present study.

The method of deriving composite indices/ factors/ principal component is given below.

$$C1 = {}^{n} * {}^{S}W$$

Or $C1 = X_1 W_1 + X_2 W_2 + X_3 W_3 \ldots\ldots X_n W_s$

Where X = standardize value of the original figures of the vectors (indictors) of matrix.

W= factors loading (weightage)

The final 'F' score have been derived by multiplication of the both factors with their respective Eigen values. The sum of these values has been divided by the sum of Eigen value 1st and 2nd.

Composite indices of economic social and health and demographic amenities have been constructed. After that an attempt has been made here to construct a composite index of development by treating composite indices of above mentioned indicators.

Districts are classified into three categories, high, medium and low levels of development according to their position in the composite Indices. Three categories have been derived on basis of mean and standard deviation of each indicator.

Distance between mean and standard deviation of indicators has been taken as the class intervals for categorization. Finally the factors have been grouped in three categories for different level of development.

I.6. ORGANIZATION OF THE STUDY

The present study has been organised into six chapters. Statement of the problem, objectives, study area, methodology and data base employed are briefly indicated in the Introductory Chapter. Introductory chapter also includes the brief survey of literature related to economic, social and demographic development.

The second chapter portrays the level of economic and infrastructural development and regionalization based on composite index of selected indicators.

13

An attempt has been made to analyse and compare the level of social and health development basis of selected indicators in the third chapter.

In the forth chapter titled "level of demographic development" the level of demographic development has been ascertained for two decades (1981-91).

Fifth chapter a statement of the composite indices/level of development has been analysed to bring out the aggregate regional development in the study area.

Study and conclusions have been presented in the last chapter.

I.7. AN OVERVIEW OF LITERATURE

Various studies have been conducted by different scholars to analyze and examine the development status. One of the first such attempts was made by Mitra Ashok [6] (1961) who classified of the districts of India into four categories of development. Pal M.N.[7] (1975) had used the principal component analysis in order to measure the level of development by taking seventeen indicators of development. Following is the overview of some of the important studies.

Kurian N.J. (2000)[8]: had explained that disparities in economic and social development across the region and social development across the region and intraregional disparities among different segments of the society have been the major reason for adopting planning in India. He also pointed out that improvement in basic infrastructural facilities like power, irrigation transport and telecommunication in the backward states in a pre-condition to improve the quality of the people. Availability of assured

infrastructural facilities is an important factor to attract private investments which are helpful for any type of development.

C.H. Balaramalu (2000)[9]: had observed in his study that in the recent past the capital expenditure of the central and state government in infrastructure is declining. Consequently, Government is increasingly depending on the private investors, international agencies, capital market and others for investment in infrastructure. The analysis also reveal that the private investors or the international agencies which are lending loan for infrastructure development, are dictating the nature of project relation of region and cost-benefit of project etc. their concentration is mostly with the project which would give them immediate results and profits. These trends further accentuate the disparities in the level of amenities across; urban and rural areas; rich and poor people.

Paramita Majumdar (2000)[10] : gave detail about Punjab's development through the various indicators, which reveal demographic situation, socio-economic, rural-urban and industrial development. The Paper showed that the public expenditure on economic service has risen from 31.34 percent in 1980 to 36.43 percent in 1990. Significant development has been achieved in social and economic front as well as agriculture. Along with the small-scale industries in the states are in the process of development has been enhanced.

Narayana K.S. (1999)[11]: in their article had focused on the physical and social infrastructure. They examined the status of India's infrastructure as poor which needs

immediate corrective policy measures. Presently only 5.5 percent of the GDP is spent on infrastructure which need to be raised to at lest 8 percent.

Kundu A. and Bagchi S. (1999)[12] in their study had found that population growth and low investment in urban development had created a serious deficiency in the availability of infrastructure and basic amenities in the town and cities of the country. A state and size class wise analysis of the level of urban base amenities reveal that disparities that were extremely high in the nineties.

Inderpal Kaur (1998)[13]: had explained the economic development and structural changes in the Punjab and Haryana for the period 1970 to 1992. She presented that economic development and structural change are mutually interdependent. The growth of national income lead structural changes, in turn, and this will raise the growth of national income through shift in demand, production and labour force to more productive activities. In this paper, it is clear that growth rate of both NSDP (Net State Domestic Product) and per capita income were higher in Haryana as compared to in Punjab for reference period of 1970-92.

Vinod K. Shah (1998)[14]: had described the infrastructural development in Gujrat for two point of time i.e. 1978-89. The exercise used information pertaining to the five indicators of infrastructure namely, power, transport and communication, banking, education and health. Within the selected time period out of seven districts classified as developed districts in 1978-79, five districts remained developed in year 1988-89, while two districts moved downward as semi-developed districts. Out of seven semi-developed

districts, two districts moved downward and similarly out of five backward districts, four remained backward and one district moved upward.

Saxena and Satyananda Sahoo (1998)[15]: had noted in their study the impact of infrastructure, viz. transport, electricity gas and water supply, telecommunication etc. on the output, income and employment of Kanpur's economy. During 1985-86 formal sector is contribution to employment and net value added was higher than the informal sector. Transport and other infrastructure sectors contribution to income and output generation are found to be very negligible. All services stood at the top position in terms of employment generation.

Paul H.S. (1998)[16]: had explained that illiteracy and ignorance among common people had been the main cause of unsatisfactory social, economical, demographical and political development. Moreover, quality of life can not be improved without the right type of education. In Punjab, there existed wide gap between the urban and rural areas and between male and female. Rural Punjab has been very badly neglected.

Dubey, Duggal and Kaur (1998)[17]: had emphasised the problems regarding infrastructure which are needed by the rapid growth of urban population like transport facilities. Infrastructure in cities of Punjab has not increased proportionately with the increase of population pressure. The housing situation has also deteriorated due to increase in the urban population.

Khader S.A. (1998)[18]: had pointed out that infrastructure is a basic need to create improved market ability, efficient resource utilization and increased opportunities for the people to participate in the development process. Infrastructure is a considered as the

wheels of economy. Good infrastructure raises productivity and lower costs of production thus ultimately leading to better standard of living.

Ghose B. And De Prabir (1998)[19] : have stated that the concept of infrastructure is essentially a flow of services out of a created stock of infrastructural facilities over a length of time. This paper had also focused on the physical infrastructure development with the help of principle component analysis for India's states. With various unavoidable data limitations, the results were: firstly, regional disparity has been rising within period, and plan outlay has not played and major role in this regard; secondly, regional imbalance in physical infrastructure has been found to be responsible for rising income disparity across the states.

Sidhu H.S. (1996)[20]: in this study had observed that fast growing agriculture can play an instrumental role in the process of industrialization of an agrarian economy which is the main factor responsible for development in any state/region. The author had revealed Punjab's economy had reached a level of development where emphasis has to be on high productivity of modern medium and large scale industries rather than tradition small scale industries.

Mangat H.S. and Kaur H. (1996)[21]: had found in their study that male-female gap in literacy in Haryana in greater than in India as a whole. The percentage of illiteracy has declined; and the number of illiterates had continued to grow. According to 1991 census about 60 percent of females are still illiterates and this had attributed to causes like population explosion, lack of enough literacy programmes for females, lack of universal primary education, ignorance, and so on.

Kaur D. and Ghuman B.S. (1995)[22] : in their article had described that on the basis of per capita income of the existing disparities of the population of Punjab. Southern Punjab is found to have developed more than the northern part during the selected period 1980-81 to 1988-89. The inter-district disparities in Punjab have neither widened nor narrowed during the period under review.

Sheila Bhalla (1995)[23]: stated the Haryana experience which suggests that sustained growth in agriculture plus deliberate policy of income and occupational diversification is the most effective cure for poverty. While the strategy of investment in rural infrastructure, agriculture and industrial development appears to have worked. Haryana still has a poor record in regard to quality of life indicators such as health, mortality and sex ratio.

Harpal Singh (1995)[24]: had attempt to highlights the disparities in the level of diversification of rural economy in the sates of Haryana. Areas with the high degree of diversification are situated into two major pockets; the adjoining region of Delhi and district of Ambala. Low degree of diversification is lies in Bhangar region and adjoining area of Rajasthan.

Rao and Anuradha (1995)[26]: had concluded that role played by infrastructure in the process of development. Hence great emphasis should have been placed on the facilities viz. Power, transport, communication, health and education etc. in the programmes of economic development. In spite of various schemes implemented under the successive five year plan for the development of the country; all the regions of the country have not attained equal and in some cases even the minimum standard so far.

Sharma S.S. and Sharma R. (1993):[27] had observed in their study that regional disparities in the level of socio-economic development in our country appear due to our failure in evolving a suitable spatial framework to achieve the objectives of growth. They also favoured the implementation of development programmes at micro-level unit like a village.

Mangat H.S. (1993)[28]: in his findings had proposed that agricultural development depends upon physical factors, (physiography, climate, soils, water resources etc.), technological advancement and socio-economic factors (rate of literacy, urbanization, infrastructure etc.) prevailing in a region. He had also observed that agricultural development also depends on success of various development schemes which are implemented by government within state or region. Moreover, the benefit of their schemes has not been shared equally by all parts of the states.

Bhat L.S. (1991)[29]: his study had showed the contribution of agriculture and allied activities to GNP are as high as 50 percent. The rural population constitutes 76.3 percents of the total GNP. The urban population constituting 23.7 percent of the total has a major share in the GNP contributed by secondary and territory sector.

Jayasree De (1990)[30]: has indicated in her study that the impact of industrialization on regional economies would depend on the level of industrial development, the level of areal and sectoral growth rate, of industries, the degree of specialization and diversification, and the trends of shift in industrial development.

Sabur A. (1989)[31]: in his paper had attempted to study the pattern of development and utilization of human resources in rural Baraqni Punjab. He had considered the human

resources as a workforce contributing to economic growth with the association of natural resources and capital. It was found that education, health care and sanitation conditions were below satisfactory level with in study area.
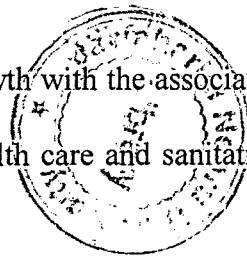
Singh S.C. (1988)[32]: in his study has attempted to analyze the current regional inequalities in socio-economic development of Pauri Garhwal, a mountain district of UP Himalaya with the help of 13 variables. The composite index clearly reveals that the deficient spatial organization of the economy is the major impediment to the balanced development of the region. For spatial diffusion of development impulses and removal of disparities in the level of development of these urban centres should act as service centres with functional and spatial linkages with their hinterlands.

Verma S.S and Shahi S.K. (1988)[33]: had put forward that the geographical uniqueness, socio- economic growth occurs unequally leading to regional disparities. The spatial disparity in economic progress and social wellbeing is injurious to overall national progress/ development. The need for bridging the development gap has been argued maintaining for social justice national integration, political stability and national unity. Thirty nine indicators had been chosen for measuring development in Rahilkhand plain region with help of composite index. Out of 36 tahsils experienced average development and other are less or least developed.

Bawa R.S. and Sharma H.K (1983)[34]: in their study had noted that to reduce industrial variation in industrial development basic infrastructure in the most important factor followed by governmental efforts, technical efforts etc. Basic infrastructure is the

most important factor in explaining entire districts variation in the industrial development.

Gaikwad and Misra (1979)[35]: found in their study that agriculture has not been helpful in improving the level of living of people, while industrial development has proved to be helpful to the people. They suggest the need of land reform and development of industries at different scale in backward areas as well as investment in infrastructural development.

Ganguli and Gupta (1976)[36]: had examined the inter variation in the level of living during the period 1955-65. Their composite index for periods 1964-65 shows a variation from 57.0 in Bihar to 186.3 in Punjab. According to this study Punjab, Tamilnadu, Maharashtra, Kerala and West Bengal show highest level of living while Bihar, UP, MP and AP had indicate the lowest level.

Pal M.N. (1975)[37]: had used the principal component analysis in order to measure the level of development. By taking seventeen indicators of development, he had showed the districts as developed and less developed. He calculated that states like Punjab and Kerala were developed as a result of improvement in the agricultural sector and associated activities. Maharashtra, Tamilnadu and Gujrat were marked by non-agricultural development compared to complimentary agricultural development. All underdeveloped states also had low agricultural development except in pockets of hill districts of Assam, J and K. and coastal Orissa.

Biplab Dasgupta (1971)[38]: had classified the Indian districts on the basis of socio-economic infrastructural facilities. He had used the sophisticated technique of principal

component and had arrived at a composite index of socio-economic development of districts. He dealt mainly with statistical problem.

Shah N.(1969)[39] had attempted to construct a composite index including all infrastructural facilities. His work related to year 1967-68 taking state as unit. He assigned subjective weightage to different infrastructural facilities on and had arrived at a composite index to examine the impact of infrastructural facilities general economic development.

All these studies show different measurement of development, regional disparities and inequalities in order to focus on economic, social and demographic development.

END NOTES

1) Rao V.K. R.V. (1981), "*Infrastructure And Economic Development*", Commerce, Annual Number 1980.

2) Verma S.S. (1985): *Urbanization and Regional Development In Rohilkhand Plain*, Indian Journal of Regional Science, vol. 20, No. 2, 1988.

3) *Student's Britanica* ; India vol. 2, 2001.

4) The Encyclopedia: *District Gazetteers of India*; vol. 4, 1999.

5) Kundu Amitabh (1980): *Measurement Of Urban Process : A Study Of Regionalization*;, popular Prakashan, Bombay.

6) Mitra, A. (1961): *Level Of Regional Development In India;* Census of India, Vol. 1, Paper 1,A(I).

7) Pal M.N. (1975): *Regional Disparities In The Level Of Development In India*: Indian Journal of Regional Science, Vol. VII, pp. 17-38.

8) Kurian N.J. (2000): *Widening Regional Disparities in India ; Some Indicators*; Economic and Political Weekly, February 12, 2000.

9) C.H. Balaramulu (2000): *Infrastructure and Development in India-Macro and Micro-Analysis*; Indian Journal of Public Administration, vol. 46, No. 4.

10) Paramita Majumdar (2000): *Some Aspects Development In Punjab, India*; Geographical Review of India vol. 62. No. 2, June 2000.

11) Narayana K.S. (1999): *Status Of India's Physical Infrastructural Development - An Objective Evaluation*; Madhya Pradesh Journal of social science vol. 4, no. 1

12) Kundu A and Bagchi S. (1999): *Regional Distribution Of Infrastructure And Basic Amenities In Urban India* : Economic and Political Weekly; July 10, 1999.

13) Kaur I. (1998) : *Structural Changes In Punjab And Haryana – A Comparison*; Indian Journal of Regional Science, Vol. 30 No. 1

14) Shah V.K. (1998) : *Infrastructure In Gujrat :A Cross Section Study*; Madhya Pradesh Journal of Social Science, vol. 3, No. 1

15) Saxena K.K and Sahoo S. (1998) : *Infrastructure And Economic Development* : A Case Study Of Kanpur City; Indian Journal of Region Science vol. 30 no. 1

16) Paul H.S. (1998): *Education and Literacy in Punjab*; the Sikh review, Nov. 1998.

17) Dubey, Duggal and Kaur (1998): *Urbanization: Problems And Prospects (A Case Study Of Punjab)* ; Man And Development vol. 20, No. 4.

18) Khader S.A. (1998) : *Productivity In Infrastructure*; Yojana , Jan. 1998

19) Ghosh B. and De Prabir (1998): *Role of Infrastructure in Regional Development: A study over the Plan Period:* Economic and Political Weekly, Nov. 21, 1998.

20) Sidhu H.S. (1996 : *Agricultural Development And Agro-Industries In Process Of Industrialization: A Case Study Of Punjab (India)* ; International Journal of Punjab Studies, vol. 3. No.1. 1996.

21) Mangat H.S and Kaur H. (1996): *Planning For Female Literary In Haryana*; Journal of Education Planning and Administration; vol. 10 no. 4, Oct. 1996.

22) Kaur D. and Ghuman D.S. (1995): *Inter District Disparities In Punjab*: Implications for Planning; Indian Journal of Regional Science, vol. 27, no. 1–8.

23) Sheila Bhalla (1995): *Development, Poverty and Policy: The Haryana Experience*: Economic and Political Weekly; Oct. 14-21, 1998.

24) Harpal Singh (1995): *Non –Agricultural Working Force In Rural Haryana: 1981*; National Geographical Journal of India, vol. 41, no. 4, Dec. 1995.

25) Rao, A.V.V.S.K. and Anuradha (1995): *An Analysis Of Inter State Industrial Disparities In India 1970-71 To 1985-86*; Indian Journal of Regional Science No. p. 27.

26) Sharma S.C. and Sharma R. (1993): *Spatial Planning For Socio-Economic Development At Micro Level*; Geographical Review of India, Vol. 55, no. 1.

27) Mangat H.S. (1993): *Agricultural Development in Haryana: A Regional Survey; Man* and Development, Vol. 15, No. 1 March 1993.

28) Bhat L.S. (1991): *Spatial Perspective In Social-Economic Development From National And Regional Angles*; Geography and Planning; Vol. 12, no. 3.

29) Jayasree De (1990): *Industrial Development and Economic Growth in India*; Indian Journal of Regional Science; Vol. 21, no. 1.

30) Sabur G. (1989): *Present State of Development and Utilization of Human Resources In The Rural Baraqni Punjab*; Journal of Rural Development and Administration, vol. 21, no. 1.

31) Singh S.C. (1988): *Regional Development in Pauri Garhwal District of Uttar Pradesh*; Indian Journal of Regional Science, Vol. 20, no. 3.

32) Verma S.S. and Shahi S.K. (1988): *Spatial Pattern Of Infrastructural Facilities And Regional Development: A Case Study Of Rohilkhand Plain (U.P.)*; Indian Journal of Regional Science; Vol. 20, no. 2.

33) Bawa, R.S. Sharma M.K. (1983): *Sources of Variations Industrial Development In Punjab*; India Journal of Regional Science, Vol. 12, no. 1.

34) Gaikhward S.B., and Misra S.K. (1979*): Impact Of Economic Development On Welfare And Living Conditions Of People Of Madhya Pradesh: An Inter District Case Study*; Indian Journal of Regional Science, Vol. 12, No. 1.

35) Ganguli B.N. and Gupta D.B. (1976): *Level; Of Living in India*; S. Chand and company, New Delhi – pp. 63-74.

36) Pal M.N. (1975): *Regional Disparities in the Level of Development in India*; Indian Journal of Regional Science, Vol. 7, no. 1.

37) Biplab Dasgupta (1971): *Socio-Economic Classification Of Districts: A Statistical Approach;* Economic and Political weekly August 14.

38) Shah N. (1969): *Infrastructure for India Economy*; Commerce; Annual Number 1969.

CHAPTER – II

ECONOMIC DEVELOPMENT

II.1. INTRODUCTION

Any state depends directly upon the development of agriculture and industry. Agricultural production, however, requires power, credit, transport facilities etc. Industrial production requires not only machinery and equipment but also skilled man-power, banking and insurance facilities, transport services which include roads, railways and communication facilities, etc. All these facilities and services constitute collectively the infrastructure of an economy and the development and expansion of these facilities are an essential pre-condition for increasing agricultural and industrial production in a state. Economic development also depends on such non-economic factors as social attitudes, political conditions and human endowments.

According to Parthasarthy, G.,[1] "It is not necessary that agricultural development leads to industrial development. It has been seen that increased agricultural production and lead farmers to non productive expenditure patterns such as conspicuous consumption i.e. spending lavishly on marriage and other social ceremonies etc." However, one may safely state that under all circumstances, increased agricultural productivity makes an important contribution to general economic development.

This chapter has basically been devoted to identify the level of economic development of districts based on their factor scores at the points of time 1981 and 1991 respectively. This chapter includes a detailed discussion on the level of economic development through selected eight indicators. The very purpose of this economic sector is to construct composite index for all districts to get an idea of the level of development prevailing in each district.

The selected indicators for economic development are:-

1.   Fertilizer consumption in Kg/Ha.

2.   Gross irrigated area as percentage of gross sown area

3.   Per capita bank credit to agriculture in Rupees

4.   Per capita bank credit to industry in Rupees.

5.   Per capita value of agriculture production in Rupees

6.   Length of metalled surface road for 100 sq. km.

7.   Percentage of inhabited village having P. & T facilities

8.   Percentage of inhabited village having telephone connection.

II.2. Level of Economic Development – A District level analysis (1981-91).

The following analysis is based on the district wise examination of selected indicators of economic development in the state of Haryana and Punjab. According to the Indian Census 1991, there are twelve districts in each state.

II.2.1. Consumption of Fertilizers

In any scheme for boosting agricultural output the use of chemical fertilizers has an important role. With population rising at a fast rate, the use of larger dose of chemical fertilizers is the only way to augment our food grains production. The new agricultural strategy of India was based on increased use of fertilizers. The Fig. No. 1 shows the consumptions of chemical fertilizers in the sample states.

In respect of consumption of chemical fertilizer, the Indian average is 31 kg. in 1981 and 64 kg per hectare in 1991.

In 1981, Haryana's average consumption of fertiliser is 41.04 kg. /hec. This is better than Indian average. It indicates a high level of agriculture input in study area. There are three districts which have above 60 kg/hac. consumption of fertilizers. These are Ambala (67.5%), Kurukshetra (87%) and Karnal (99%). While Bhiwani and Rohtak are using fertilizers below 20 kg/ha. The rest of others district have level of consumption between 25 to 50 kg/ha.

Increases from 8.6 percent of fertiliser consumption per hectare to 205 kg/hec. was noticeable in 1991, in each district of Haryana. In Faridabad and Gurgaon, there was low level of agricultural input because these districts have not used maximum land for agriculture. All districts of Haryana have a level of consumption more than national average (64 kg/ha).

In 1981, Punjab has attained a level of fertilizer consumption between 64 to 152 kg/ha. The average consumption of Punjab was between 102 to 156 kg/hac. This is almost twice that of national average. Ludhiana and Kapurthala have a consumption of 233 and 188 kg/hac. respectively in the year of 1991. The minimum consumption

HARYANA
FERTILIZER CONSUMPTION IN KG./HA.
(1981-91)

Bar chart: Y-axis "FERTILIZER IN KG." (0 to 250), X-axis "DISTRICT" showing AMBALA, BHIWANI, FARIDABAD, GURGOAN, HISSAR, JIND, KARNAL, KURUKSHETRA, MAHENDRAGARH, ROHTAK, SIRSA, SONIPAT. Legend: ■ 1980-81, □ 1990-91

PUNJAB
FERTILIZER CONSUMPTION (in KG./ha.)
1981-91

Bar chart: Y-axis "FERTILIZER (in KG.)" (0 to 250), X-axis "DISTRICTS" showing AMRITSAR, BATHINDA, FIRIDKOT, FIROZPUR, GURDASPUR, HOSIARPUR, JALANDHAR, KAPURTHALA, LUDHIANA, PATIALA, RUPNAGAR, SANGRUR. Legend: ■ 1980-81, □ 1990-91

FIG 2.1

of fertilisers have been seen in Amritsar were it is 98 kg/hac. The overall feature shows that Punjab's fertilizers consumption is highest in India.

TABLE – 2.1.
GROWTH IN THE CONSUMPTION OF FERTILIZER DURING 1981-91

Compound Growth in (%)	Districts in Haryana	Districts in Punjab
More than 12.3	Bhiwani, Hissar	--
8.2. – 12.3	Jind, Kurukshetra, Mahendragarh, Rohtak, Sirsa, Sonipat	Rupnagar
4.1 – 8.2	Ambala, Faridabad, Karnal	Bathinda, Gurdaspur, Ludhiana, Sangrur, Patiala
Below 4.1.	Gurgaon	Amritsar, Faridkot, Firozpur, Hoshiarpur, Jalandhar, Kapurthala.

Source: Fertilizer statistics, The Fertiliser Association of India -1981, 1991.

With respect of the growth in the consumption of fertilizers during 1981-91, the progress is quite good in the sample states. There are two districts in Haryana that have experienced an annual growth rate of more than 12.3 percent. A total of 7 districts fall in the category of growth below 4.1 percent. Gurgaon in Haryana and Amritsar, Faridkot, Firozpur, Hoshiarpur, Jalandhar and Kapurthala in Punjab lie in this category. All districts of Punjab except Rupnagar have experienced medium and low category of annual growth rate between 4.1to 8.2 and below 4.1 percent, while no district of the Punjab has fallen in the category of growth above 12.3 percent. In Haryana, six districts (Jind, Kurukshetra, Mahendragarh, Rohtak, Sirsa, and Sonipat) are situated in the category of high growth i.e. between 8.2.-12.3 percent. The state level comparison shows that Haryana has performed better than Punjab with respect to growth in consumption of fertilizers.

II. 2.2. Gross Irrigated Area

"The secret of rapid agricultural progress in the underdeveloped countries is to be found much more in agricultural extension, in fertiliser, seeds and in water supplies than in altering the size of the farm, in getting rid of middlemen in the making process."[2] It is clear that in India, where the variability of rainfall makes agriculture a "gamble of monsoon", irrigation is one of the most important input in agricultural development which is helpful for economic development.

In Punjab and Haryana, artificial irrigation is absolutely essential, for without it cultivation is almost impossible. In short, water is a vital input to increase agricultural output. Fig. 2.2 reveals special variation of irrigation in Haryana and Punjab.

Haryana reveals that the level of irrigation is high as in the comparison with the Indian average (28.49% in 1981 and 33.83% in 1991). In 1981, while Karnal and Kurukshetra were having 86% of their cultivable land under irrigation, this percentage was 71.1 for Rohtak. The main reason behind this is that Yamuna River is situated near by these districts. Bhiwani and Mahendragarh have similar conditions to that of dry area of Rajasthan. Therefore, irrigation facilities in these districts were not good. In 1991, all districts have achieved 10% and above growth rate in gross irrigated area. There are two districts where the level of irrigated area is less than 50 percent. These districts are Bhiwani and Mahendragarh. Except these districts every district of Haryana has irrigated area above 55 percent.

Punjab's situation of irrigation is better than Haryana. In 1981, 85.24 percent area of gross sown areas has irrigation facilities while in 1991 the corresponding

HARYANA
GROSS IRRIGATED AERA AS % OF TOTAL GROSS SOWN AREA
1981-91

PUNJAB
GROSS IRRIGATED AREA AS % OF TOTAL GROSS SOWN AREA
1981-91
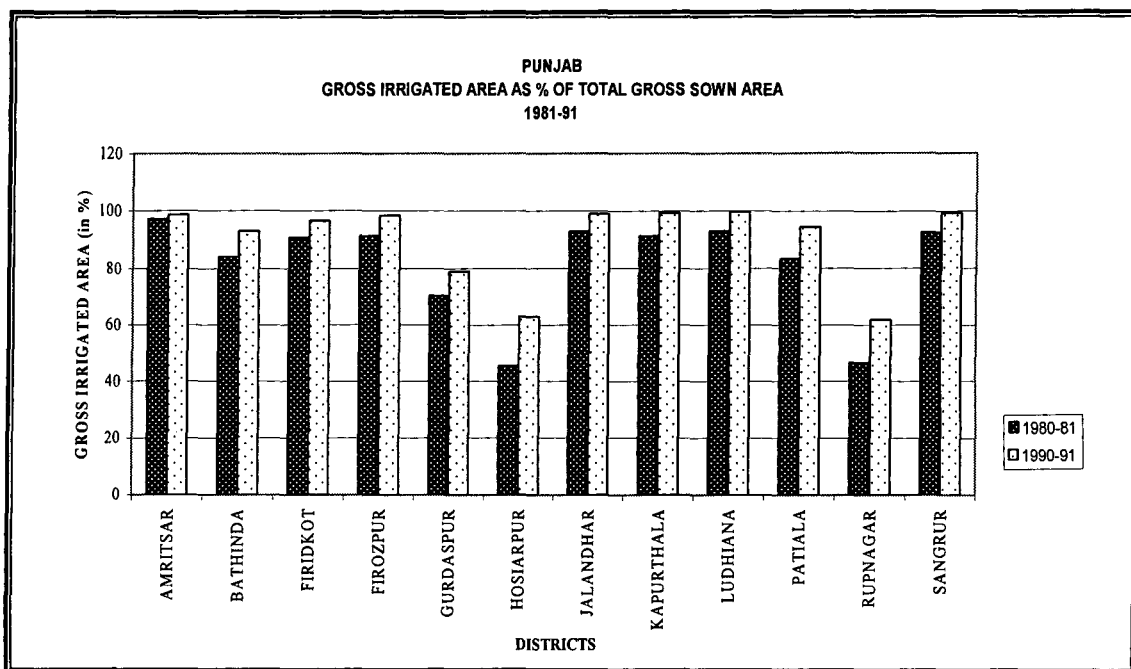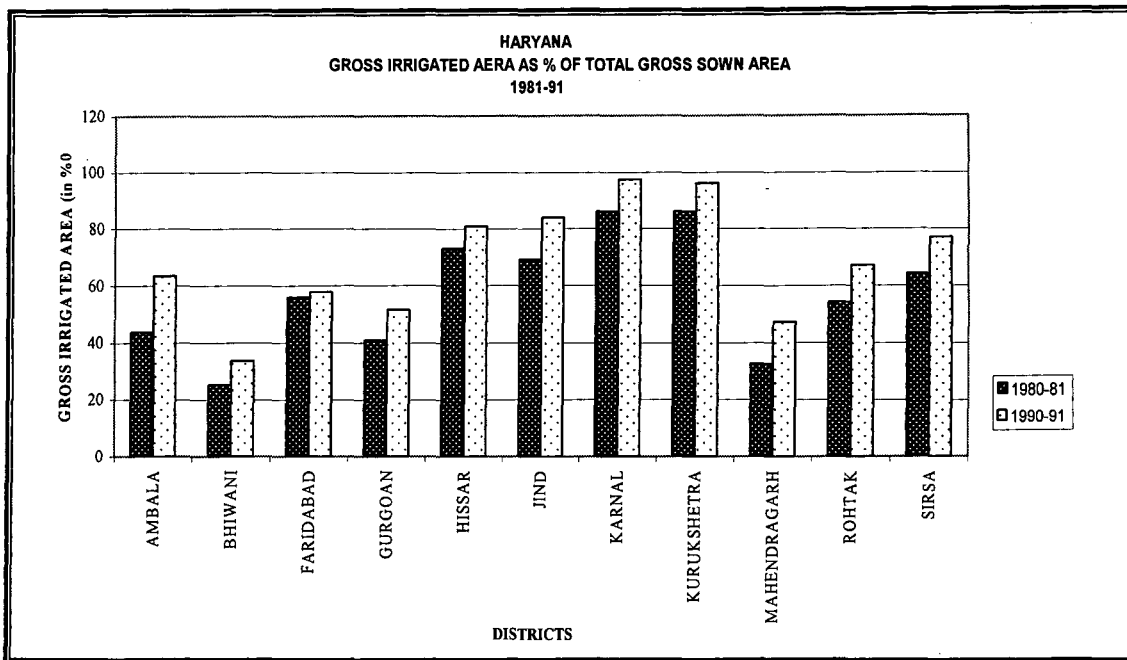
FIG 2·2

value is 93.35 percent. There are seven districts which have irrigation facilities above 90 percent and in Rupnagar district which has lowest percentage of this area has irrigation facility in 46.64 percent of land in 1981 and 61.88 percent in 1991. The ten districts of Punjab have irrigation facilities above 90 percent in 1991. Lastly, we can say that Haryana and Punjab have almost three times more irrigation facilities in comparison to national average (33.83%).

TABLE 2.2.
GROWTH IN GROSS IRRIGATED AREA AS PERCENTAGE OF GROSS SOWN AREA DURING (1981-91)

Compound Growth in Percentage	Districts in Haryana	Districts in Punjab
> 3.45	Ambala, Mahendragarh	--
2.3 – 3.45	Bhiwani, Gurgaon, Sonipat	Hoshiarpur, Rupnagar
1.15 – 2.3	Jind, Karnal, Rohtak	Gurdaspur, Patiala
< 1.15	Faridabad, Hissar, Kurukshetra	Amritsar, Bathinda, Faridkot, Firozpur, Jalandhar, Kapurthala, Ludhiana, Sangrur

Source: Profiles of Districts, Centre for Monitoring Indian Economy,1997, October 2000.

With respect to growth of irrigated area between 1981 and 1991 there are two districts of Haryana and none of Punjab that have achieved growth rate of more than 3.45 percent annually. Bhiwani, Gurgaon and Sonipat districts of Haryana and Hoshiarpur and Rupnagar districts of Punjab have achieved an annual growth rate of 2.3 to 3.45 percent while three districts of Haryana (Jind, Karnal and Rohtak) and two of Punjab (Gurdaspur and Patiala) have registered a growth rate of 1.15 to 2.3 percent annually. It is striking to note that there are eight districts of Punjab and three districts of Haryana which have shown a lowest growth rate which is below 1.15 percent. The

31

main reason behind all 11 districts which shows lowest growth rate is that these districts are having already high percentage of irrigated area of gross sown area.

When we compare between Haryana and Punjab, we find that Punjab has better situation compared to Haryana because maximum districts of Punjab have 90% and above irrigation facilities.

II. 2.3. Per Capital Credit to Agriculture in Rupees:

Today, India has wide network of Primary Agricultural Credit Societies (PACS) at village level. At district and state level, Cooperative Federation has also been set up in almost all states. These societies, cooperative federations and banks are important medium for farmers to get credit for agriculture which have helped in the economic development in Haryana and Punjab. NABARD is also playing an important role for improvement of agriculture sector through the distribution of loans among the farmers.

Fig. 2.3 shows the level of per capita credit to agriculture in rupees to reported area in the two states. The graph indicates that the Jind, Karnal, Kurukshetra and Sirsa have highest per capita credit to agriculture in 1981. It shows that maximum working population of these districts is engaged in agriculture. The same feature is provided by the 1991 data for the above mentioned districts. Faridabad and Gurgaon have low rate of per capita credit to agriculture because both of these districts are industrialized districts and maximum proportion of workers are engaged in industrial sector, so, the minimum per capita credit to agriculture lies in these districts.

In Punjab, the maximum per capita credit to agriculture as shown by the Fig. 2.3, is in Firozpur in 1981 and 1991 where the per capita credit value in Rupees are

HARYANA
PER CAPITA BANK CREDIT TO AGRICULTURE IN RS.
1981-91

BANK CREDIT (in Rs.)

DISTRICTS

1980-81
1990-91

PUNJAB
PER CAPITA BANK CREDIT TO AGRICULTURE IN RS.
1981-91

BANK CREDIT (in Rs.)

DISTRICTS

1980-81
1990-91
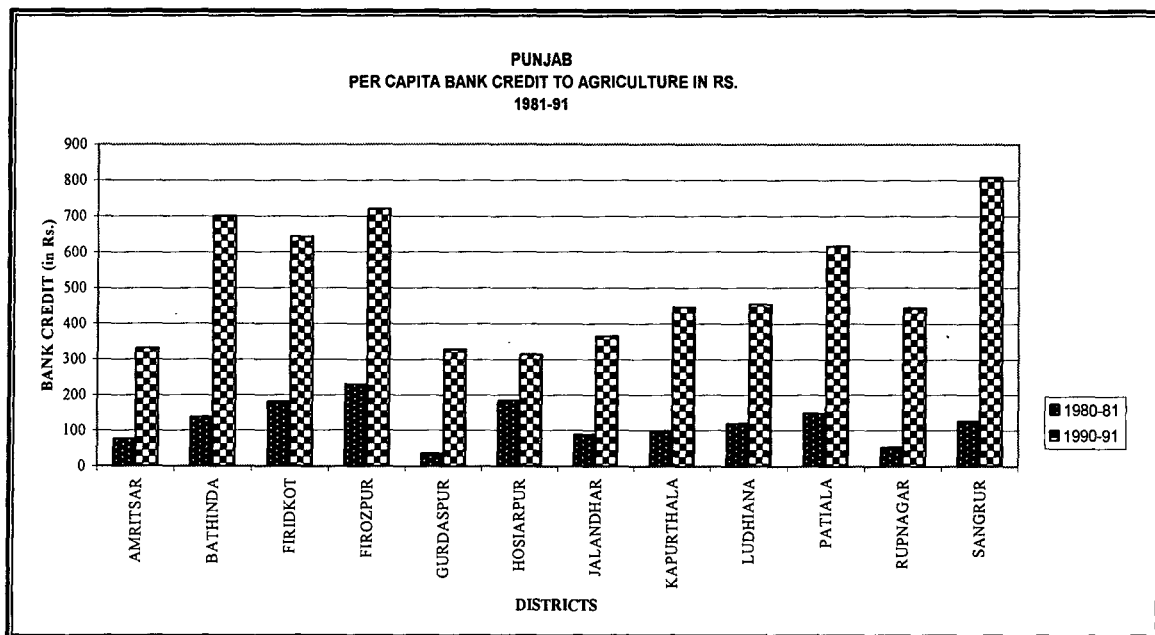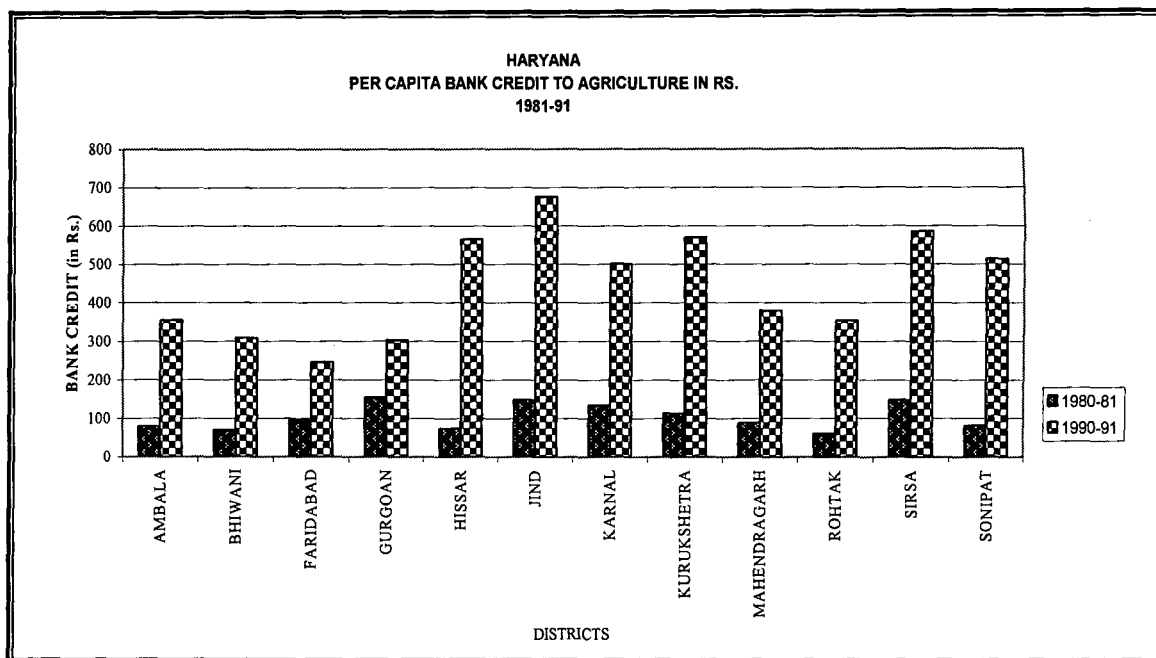
FIG. 2.3

230 in 1981 and 720 in 1991. There are six districts of Punjab that fall in the category of 100 to 200 Rs. per capita in 1981 and four districts (Amritsar, Gurdaspur, Jalandhar and Rupnagar) have registered a level of below 100 Rs. per capita credits to agriculture. In Faridkot, Bathinda, Sangrur, Patiala, have noted the value of per capita credit to agriculture is above 600 Rs. It means that these districts are improving their agricultural infrastructure. Amritsar has recorded lowest per capita credit (331 Rs.) in 1991. The main reason behind this is that maximum working people are engaged in secondary and tertiary sectors.

TABLE – 2.3
GROWTH RATE IN PER CAPITA BANK CREDIT TO AGRICULTURE IN RUPEES DURING 1981-91

Compound growth in Percentage	Districts in Haryana	Districts in Punjab
> 18	Hissar, Rohtak, Sonipat	Gurdaspur, Rupnagar, Sangrur
12 – 18	Ambala, Bhiwani, Jind, Karnal, Kurukshetra, Mahendragarh, Sirsa	Amritsar, Bathinda, Faridkot, Firozpur, Jalandhar, Kapurthala, Ludhiana, Patiala
6 – 12	Faridabad, Gurgaon	--
< 6	--	Hoshiarpur

Source: Profiles of districts, Centre for Monitoring India Economy
1997, October 2000.

The table 2.3 indicates the annual growth in the per capita credit to agriculture in rupees during the decade 1981-91. It reflects that all the districts of Haryana except Faridabad and Gurgaon have received a level of high growth rate. In Punjab, the level of growth is more than 12 percent annually in all districts except Hoshiarpur. Amritsar and Jalandhar have received high growth rates but in terms of actual value in rupees

they are the lowest. The overall growth rate of Punjab for this indicator is 15.31 percent annually.

II.2.4. Per Capita Credit to Industry in Rupees

Industrialization has a major role to play in the economic development. The development of any industry is a result of getting credit by industry owner through the various sources like bank, societies etc. Good credit policy plays a very important role for development of industries. The higher per capita credit to industries shows the high level of industrialization in any region. The Fig. 2.4 reveals the level of per capita credit to industry in rupees in Haryana and Punjab.

In Haryana, the maximum credit has been received by Faridabad and Gurgaon which are near to Delhi. The values of per capita credit in rupees are 1541 Rs. for Faridabad and 1192 Rs. for Gurgaon. The four districts of Haryana which are located far away from Delhi have the lowest level of per capita credit to industry. These districts are mainly agricultural dominant.

Sonipat district has only 134 Rs. per capita bank credit in 1981. But it grew very rapidly. In 1991 the per capita value became 1572 Rs. The distance between Delhi and Sonipat is not more than 15 km. So the process of shifting of industries from Delhi to Sonipat has started. This is the main cause behind it.

In Punjab, Amritsar (285 Rs.), Ludhiana (503 Rs.) and Kapurthala (390 Rs.) have the higher per capita bank credit to industry. The 1981 data shows that the Bathinda, Sangrur and Gurdaspur districts have very low level of per capita bank credit to industry.

HARYANA
PER CAPITA BANK CREDIT TO INDUSTRY IN RS.
1981-91

BANK CERTID (in Rs.)

DISTRICTS

- 1980-81
- 1990-91

Districts: AMBALA, BHIWANI, FARIDABAD, GURGOAN, HISSAR, JIND, KARNAL, KURUKSHETRA, MAHENDRAGARH, ROHTAK, SIRSA, SONIPAT

PUNJAB
PER CAPITA BANK CREDIT TO INDUSTRY IN RS.
1981-91

BANK CREDIT(in Rs.)

DISTRICTS

- 1980-81
- 1990-91

Districts: AMRITSAR, BATHINDA, FIRIDKOT, FIROZPUR, GURDASPUR, HOSIARPUR, JALANDHAR, KAPURTHALA, LUDHIANA, PATIALA, RUPNAGAR, SANGRUR

FIG 2.4

In 1991, Ludhiana (2785 Rs.) Jalandhar (1007 Rs.), Rupnagar (1893 Rs.), Patiala (1054 Rs.) and Amritsar (951 Rs.) have very high value compared to national average of 614 Rs. The growth of industrial sector in Punjab became very high after 1985. The concentration of industries is mainly in Ludhiana, Jalandhar, Amritsar, Patiala and Rupnagar. Faridkot, Bathinda and Sangrur have similar picture as in 1981.

TABLE – 2.4
GROWTH RATE IN PER CAPITA BANK CREDIT TO INDUSTRY IN RUPEES DURING 1981-91

Compound growth in Percentage	Districts in Haryana	Districts in Punjab
> 19	Karnal, Mahendragarh, Sonipat	Bathinda, Patiala
12 – 19	Ambala, Hissar, Sirsa	Hoshiarpur, Jalandhar, Ludhiana, Patiala, Sangrur, Amritsar
5 – 12	Bhiwani, Faridabad, Jind, Rohtak	Faridkot, Kapurthala, Gurdaspur
< 5	Gurgaon, Kurukshetra	Firozpur

Source: Profiles of Districts, Centre for Monitoring Indian Economy 1997, October 2000.

Table 2.4 provides an over view of the annual growth rate of per capita bank credit to industry in rupees during the concerned decade. Those districts which are agriculturally dominant, have highest growth (like above 19 percent) in both states. It means that the process of industrialization has spread in these districts. These districts are Karnal, Mahendragarh and Sonipat in Haryana, and Bathinda and Patiala in Punjab state. Those districts which have already big industrial areas and have received high per capita value of bank credit to industry in rupees, have recorded low annual growth rate of below 12 percent. These districts are Faridabad, Gurgaon and Rohtak in Haryana; and Kapurthala, Amritsar in Punjab. There are only two districts i.e.

35

Kurukshetra and Firozpur that have registered growth rate of below 5 percent in per capita bank credit to industry during the decade.

II. 2.5. Per capita Value of Agriculture Production in Rupees

The value of agricultural output is the result of all the factors that influence agricultural production. So, it is one of the most sensitive measures to reflect the level of agricultural and economic development. After the independence, due to Green Revolution the productivity of agricultural land has improved and a steady and continuous increase in yield per hectare of all crops has been recorded through out India but Haryana and Punjab particularly, have recorded maximum productivity of all crops and particularly in wheat.

Here the value of per capita agricultural production is calculated during 1981-91 Fig. 2.5 shows the value of per capita agricultural production in rupees in 1981. Kurukshetra has highest value of per capita agricultural production which is 1285 Rs. followed by Sirsa (1022 Rs.), Hissar (100s Rs.) and Karnal (903 Rs.) that fall in the high category. The total average of Haryana is Rs. 677, which is greater than national average (501 Rs.). There are five districts which have registered below the national average. These are Ambala, Bhiwani, Faridabad, Gurgaon and Mahendragarh.

In 1991, the national average was 1899 Rs. There are only three districts in the study area where the agricultural production was more than the national average. These are Hissar, Jind and Bhiwani districts. Others existed below the national average. The industrial and urbanized district of Faridabad has very low per capita value of agriculture production (937 Rs.).

HARYANA
PER CAPITA VALUE OF AGRICULTURE PRODUCTION IN RS.
1981-91

PUNJAB
PER CAPITA VALUE OF AGRICULTURE PRODUCTION IN RS.
1981-91
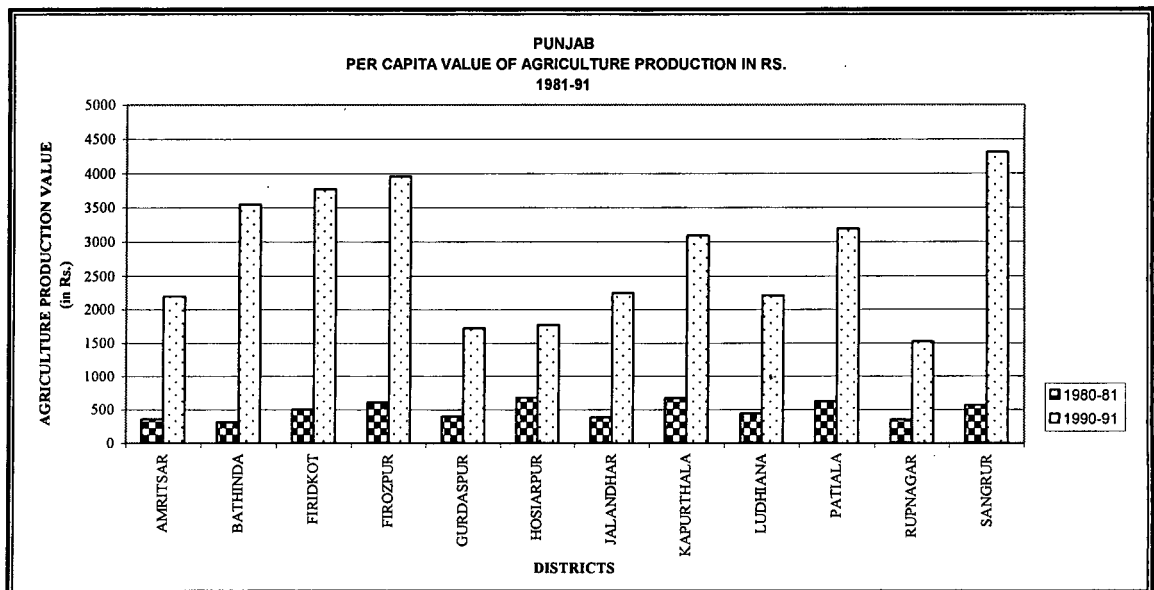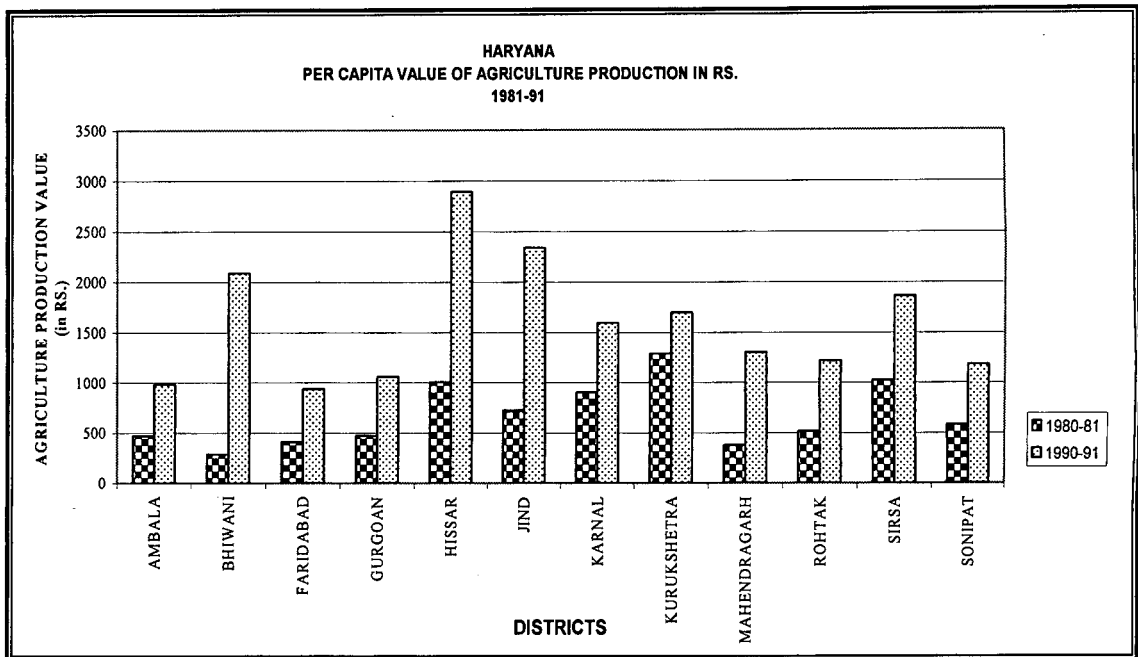
FIG 2.5

In Punjab, all districts have agriculture production in terms of per capita more than national average in 1981 and 1991, except Amritsar and Ludhiana districts. Firozpur and Sangrur districts have highest value of agricultural production that is 3955 and 4308 Rs. per capita. The average value of Punjab is 2725 Rs. per person. This indicates that the whole state is agriculturally developed.

TABLE 2.5.
GROWTH IN THE PER CAPITA VALUE OF AGRICULTURE PRODUCTION IN RUPEES DURING 1981-91

Compound growth in percentage	Districts in Haryana	Districts in Punjab
> 21	Bhiwani	Bathinda, Faridkot, Sangrur
14-21	--	Amritsar, Firozpur, Gurdaspur, Jalandhar, Kapurthala, Ludhiana, Patiala, Rupnagar
7-14	Ambala, Faridabad , Gurgaon, Hissar, Jind, Mahendragarh, Rohtak	Hoshiarpur
< 7	Karnal, Kurukshetra, Sirsa, Sonipat	--

Source: Profiles of districts, Centre for Monitoring Indian Economy, 1997 October 2000.

Table 2.5 indicates the annual percentage growth in the agriculture production in rupees per capita during 1981-91. It reflects that all the districts of Haryana have received a lower growth rate than of Punjab. It may, hence, be safely stated that the inter district differences in growth of per capita value of agriculture production is low in the Haryana. In Haryana, all districts except Bhiwani have registered a level of growth below 14 percent. That shows that the development in agricultural production has been slow in comparison to Punjab.

The districts of Bathinda, Faridkot and Sangrur have the level of growth more than 21 percent annually. The main reason behind this is that input facilities in agriculture are available through out the year, like irrigation, good seeds etc. The credit facilities for farmers are also beneficial for the development of agriculture sector.

II. 2.6. Length of Metalled Surface Road per 100 Sq. Km.

If agriculture and industry are regarded as the body and the bones of the economy, transport and communications constitute its nerves which help the circulation of men and materials. The length of roads in any region reflects the accessibility. However, a large number of villages in the country are still deprived of road connections. The availability of roads in Haryana and Punjab is very easy because the physical characteristics of land are favourable for making road.

Fig.2.6.reveals the availability of Metalled Road Length per 100 sq. km. during the period of 1981-1991 is 19841. Haryana has overall 39.92 K.M. roads per 100 sq. km. The highest value has been noticed in Gurgaon district which has 50.22 Km. and same position has also retained in the 1991 (79.67 km. per 100 sq. km.) Six districts (Ambala, Faridabad, Karnal, Kurukshetra, Mahendragarh and Sonipat) have experienced growth rate between 40 to 50 percent.

In 1991, the average road availability has improved by 3 to 5 present in all districts of Haryana. Sirsa has the lowest figure of metalled road length of 37.21 km. per sq. 100 km. In Punjab, there are four districts which have above 70 km. road length per 100 sq. km. There are Gurdaspur, Jalandhar, Patiala and Rupnagar. The lowest value is found in Bathinda district which is 39.29 in 1981 and 59.51 km. in

HARYANA
LENGTH OF METALLED SURFACE ROAD PER 100 SQ. KM.
1981-91

PUNJAB
LENGTH OF METTALED SERFACE ROAD PER 100 SQ.
KM. 1981-91
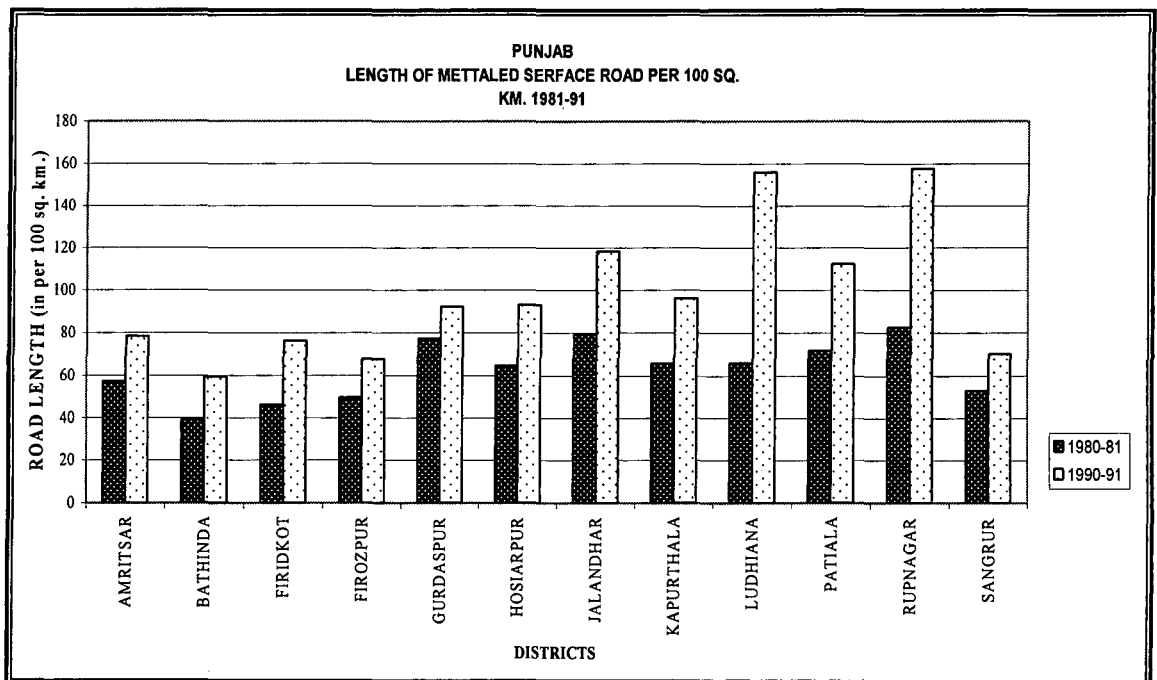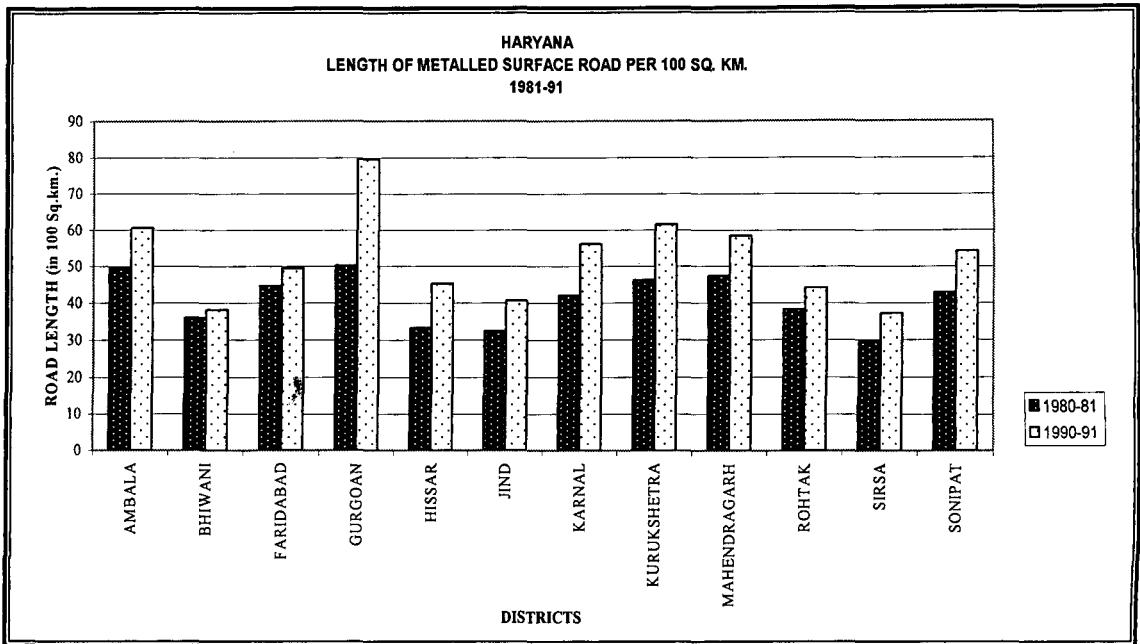
FIG 2.6

1991. The higher figure is found in Rupnagar district which is 157.59 km. The average length of metalled surface road for 100 sq. km. in Punjab is 107.25 km.

TABLE – 2.6

GROWTH OF LENGTH OF METALLED ROAD PER 100 SQ. KM.
1981-91.

Compound growth in percentage	Districts in Haryana	Districts in Punjab
> 4.5	Gurgaon	Ludhiana, Patiala, Faridkot, Rupnagar
3-4.5	Hissar	Amritsar, Firozpur, Hoshiarpur, Kapurthala, Bathinda, Jalandhar
1.5-3	Ambala, Jind, Karnal, Kurukshetra, Mahendragarh, Sirsa, Sonipat	Gurdaspur, Sangrur
< 1.5	Bhiwani, Faridabad, Rohtak	--

Source: Statistical abstract of Punjab and Haryana, Economic and Statistical organization, 1981-1991.

The table 2.6 shows the growth in length of Metalled Road per 100 sq. km. during 1981-91. Ten of the districts of Punjab have registered a growth rate of more than 3 percent annually but in this category, only two districts of Haryana (Gurgaon and Hissar) are found. Between 1.5 to 3 percent growth rate is experienced by seven districts of Haryana and two districts of Punjab (Gurdaspur and Sangrur). The table indicates that in Haryana availability of road is lower comparison to Punjab.

II. 2.7. Post and Telegraph

Efficient and well developed communication system has become synonymous with modernity and economic growth. Post and telegraph are the two main constituents of the modern communication system. On the wake of growing interaction between rural and urban settlement, a well developed post and telegraph system is imperative. Availability of this facility in a village is considered as a hall mark of higher status of the village.

Fig.2.7 shows the level of inhabited villages as percentage having post and telegraphs facilities during the 1981-1991 decade. The level of Indian villages having post and telegraph facilities are quite low i.e. 23 percent. The selected study areas reveal higher figures in comparison to the national average. In 1991, out of the twelve district of Haryana, there are two districts, which have the P & T facilities more than 60 percent. These districts are Hissar and Rohtak, while it is surprising to note that Faridabad and Gurgaon districts have the lowest level of post and telegraph facilities in inhabited villages. Other districts have registered a level of 40 percent.

Punjab has shown a very high level of post and telegraph facilities in the state. Three districts have the P & T facilities more than 40 percent. Gurdaspur, Hoshiarpur, Kapurthala and Rupnagar have lowest level of P & T facilities, the corresponding values in percentages are 13.87%, 25%, 18.8. .17.21% respectively in 1991. In Ludhiana and Jalandhar districts have registered 30.91% and 37.53% p & T facilities within inhabited villages. The P & T facilities in 1981 are almost similar. Six districts

40

HARYANA
PERCENTAGE OF INHABITED VILLAGE HAVING P & T FACILITY
1981-91

PUNJAB
PERCENTAGE OF INHABIITED VILLAGE HAVING P&T FACILITY
1981-91
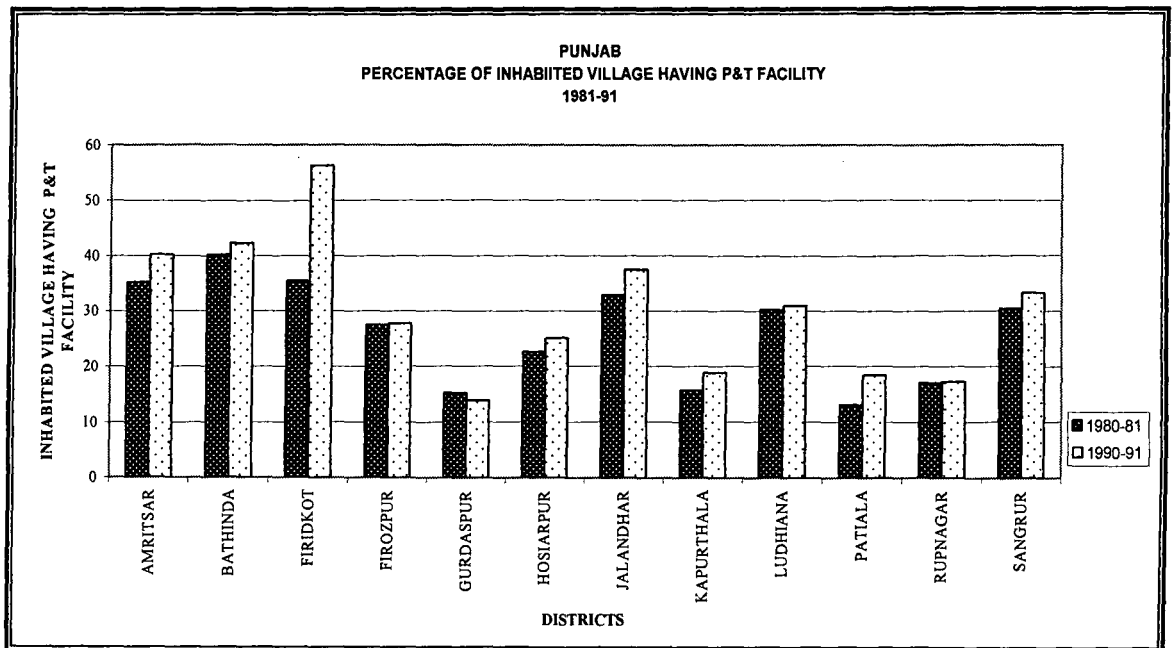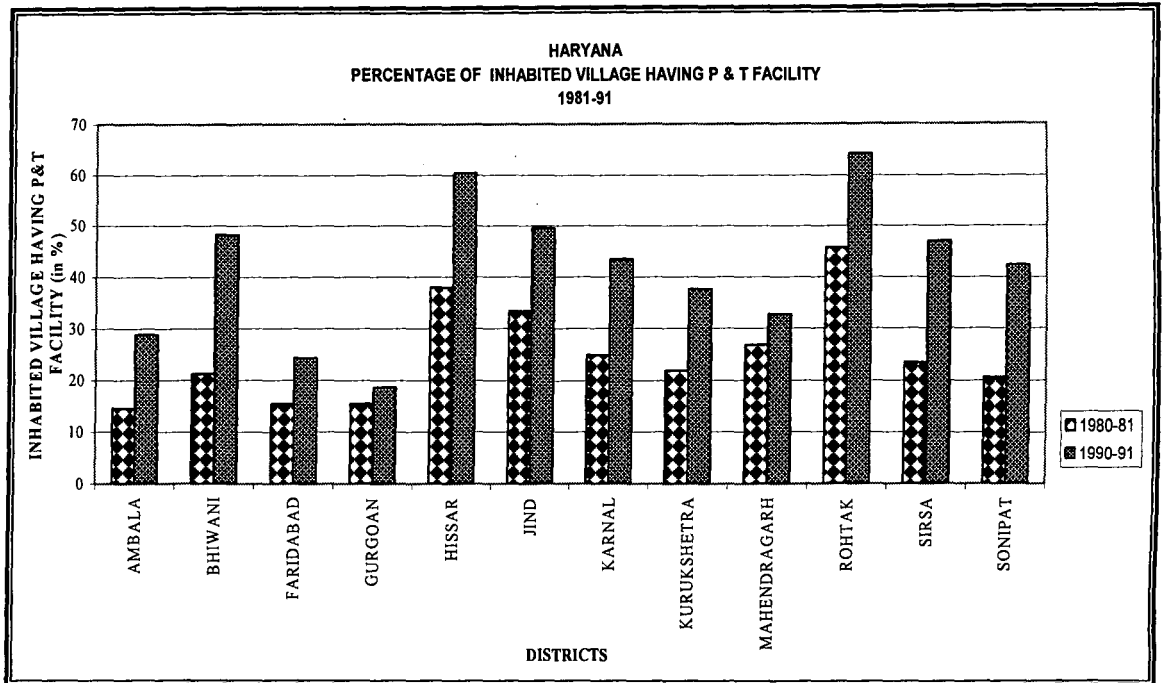
FIG 2.7

have recorded annual growth rate of below 2.5 percent. There districts are Bathinda,

Hoshiarpur, Sangrur, Gurdaspur, Rupnagar and Firozpur.

TABLE 2.7
GROWTH IN PERCENTAGE OF INHABITED VILLAGE HAVING P & T FACILITY 1981-91.

Growth rate in (%)	Districts in Haryana	Growth rate in (%)	Districts in Punjab
>24	Bhiwani	>4	Amritsar, Faridkot, Jalandhar, Patiala
16-24	Hissar, Jind Karnal, Sirsa, Sonipat, Kurukshetra, Rohtak	2.5-4	Kapurthala, Ludhiana
8-16	Ambala, Faridabad	1-2.5	Bathinda, Hoshiarpur, Sangrur
<8	Gurgaon, Mahendragarh	<1	Firozpur, Gurdaspur, Rupnagar

Source: Availability of infrastructural facilities in Rural India census of India –1991

The growth rate depicted in table 2.7 shows that most of the districts of

Haryana have experienced a growth rate of above 16 percent while Ambala,

Faridabad, Gurgaon and Mahendragarh have experienced a growth rate below 6

percent. But Bhiwani district has registered above 24 percent of annual growth rate.

Punjab's districts show very low annual growth rate that is below 6 percent. In

the highest category, there are four districts exist (Amritsar, Faridkot, Jalandhar and

Patiala).

II. 2.8 Telephone Connection

Telephone is a main device which removes the distance between two men or

firm or community. Telephone is very helpful for growth of the industrial sector,

HARYANA
PERCENTAGE OF INHABITED VELLAGE HAVING TELEPHONE FACILITY
1981-91

DISTRICTS

PUNJAB
PERCENTAGE OF INHABITED VILLAGE TELEPHONE FACILITY
1980-91

DISTRICTS
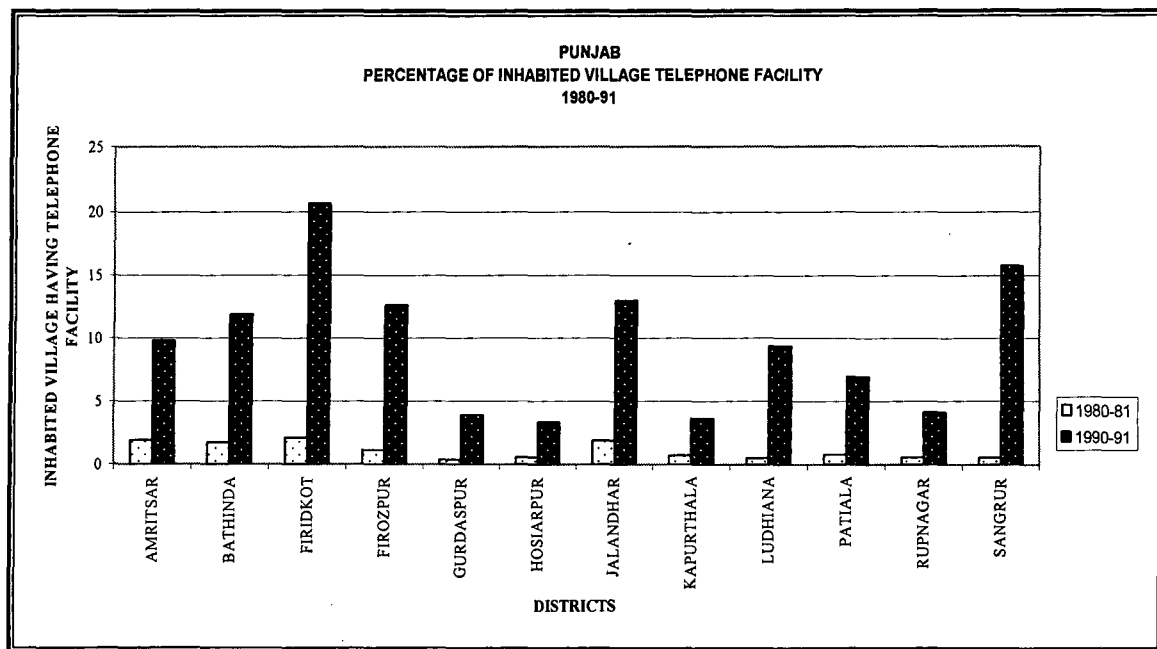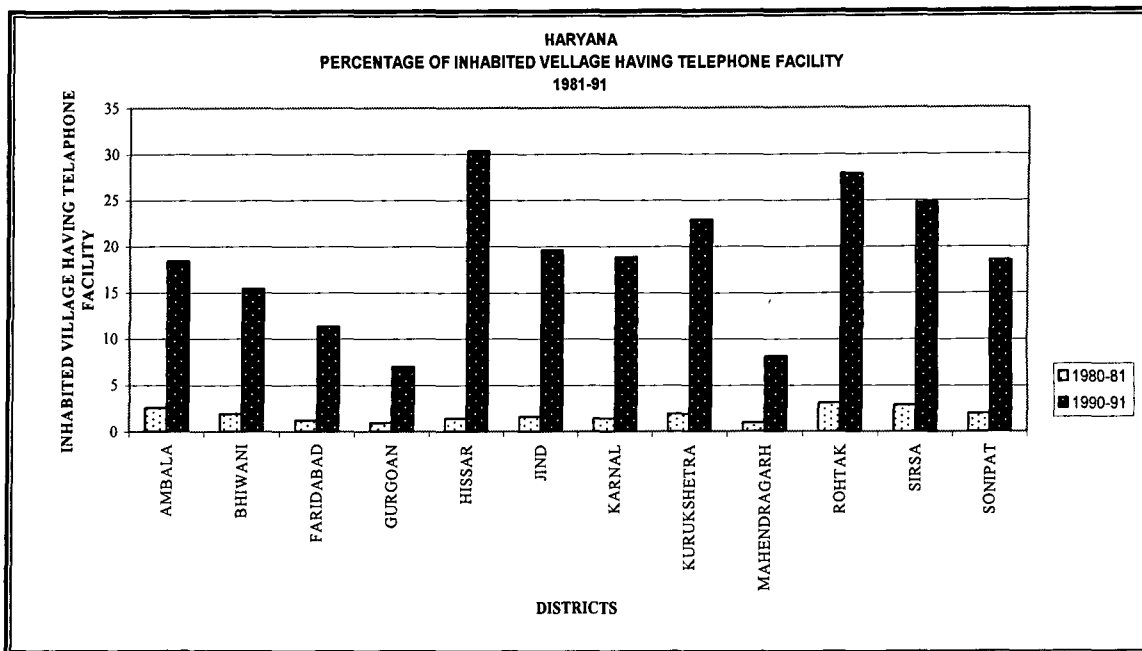
FIG 2.8

social sector as well as economic sector. Today telephone is an essential requirement for any person in the society. But the waiting period for the telephone connection is now very long not only in the metropolitan cities but also in smaller towns which have shown a sharp increase in demand as soon as new telephone connections had been released. In the following paragraph an attempt has been made to discuss in brief the telephone facilities available in the rural areas of the selected study areas.

The graph 2.8 shows that out of twelve districts of Haryana state, there are three districts that have low level of telephone facility in rural area. It is below 2 percent villages having this facility in 1981. Ambala (2.56%), Sirsa (2.89%) and Rohtak (3.13%) have above 2 percent level.

In 1991, rapid growth in telephone facilities in Haryana has been recorded. The average growth of all districts around 15.6% annually. Hissar, Rohtak, Sirsa and Kurukshetra have high percentage of telephone facility in inhabited villages.

In 1981, Punjab provided almost the same picture as Haryana. There are no districts which have two percent level and above. Amritsar, Bathinda and Faridkot have just around two percent. Fig.2.8 shows an interesting feature about Punjab. There are rural areas of five districts which have registered a level of 12% and above in telephone facility. Rest of seven the district lie below the 10 percent category. Gurdaspur and Hoshiarpur have only three and half percent villages that have these facilities.

TABLE NO. 2.8
GROWTH IN PERCENTAGE OF INHABITED VILLAGE HAVING TELEPHONE CONNECTION 1981-91

Decadal change in (%)	Districts in Haryana	Decadal change in (%)	Districts in Punjab
> 21	Hissar Kurukshetra, Rohtak, Sirsa	> 12	Faridkot, Sangrur
14-21	Ambala, Jind, Karnal, Sonipat	8-12	Bathinda, Firozpur, Jalandhar, Ludhiana
7-14	Bhiwani, Faridabad, Mahendragarh	4-8	Amritsar, Patiala
< 7	Gurgaon	< 4	Gurdaspur, Hoshiarpur, Kapurthala, Rupnagar

Source: Availability of infrastructural facilities in Rural India, Table no. 9, Census of India – 1991.

The decadal change depicted in table no. 2.8 shows the Haryana has changed more than the Punjab. Haryana received 7 to 28 percent decadal change but Punjab has only 2 to 15 percent change in inhabited villages which are having telephone facilities. The cause of higher growth of telephone facility in Haryana is that the national capital region is just near.

II.3. LEVEL OF INTER DISTRICT DISPARITIES IN ECONOMIC DEVELOPMENT, 1981-91

It is noted through the process of economic development that the concerned states have experienced varying level of inter district disparities. To measure it, co-efficient of variation (C.V.) has been calculated. It measures the level of inter district deviations of an indicator.

TABLE 2.9
LEVEL OF INTER DISTRICT DISPARITIES IN ECONOMIC DEVELOPMENT, 1981-1991
(Co-efficient of variation values)

	Haryana		Punjab	
	1981	**1991**	**1981**	**1991**
A1	70-18	60.62	26.30	21.50
A2	34.06	28.92	23.91	17.27
A3	33.14	30.94	48.60	33.44
A4	157.16	101.37	65.91	88.89
A5	46.71	38.06	24.05	36.67
A6	17.04	23.46	19.29	31.10
A7	38.13	33.28	34.60	45.19
A8	39.75	39.37	65.43	64.35

NOTE:
A1 - Fertilizer consumption in Kg/Ha.
A2 - Gross irrigated area as percentage of gross sown area
A3 - Per capita bank credit to agriculture in Rupees.
A4 - Per capita bank credit to industry in Rupees.
A5 - Per capita value of agriculture production in Rupees.
A6 - Length of Metalled surface road for 100 sq. km.
A7 - Percentage of inhabited village having P. & T facilities
A8 - Percentage of inhabited village having telephone connection.

The co-efficient of variation of fertilizer consumption has showed declining trend in inter district disparities, where value of Co-efficient of variation has declined from 70.80 in 1981 to 60.62 in 1991. It shows that the variability of this indicator is high in Haryana but in Punjab where the value of Co-efficient of variation has

declined from 26.39 in 1981 to 21.50 in 1991. That depicts the consumption of fertilizer is high and achieves almost a stable position.

Measuring the level of irrigation facilities, the inter districts disparities in both states have decreased, as the value of Co-efficient of variation for irrigation facilities has decreased from 34.06 in 1981 to 28.92 in 1991 for Haryana and 23.91 to 17.27 for Punjab. These value shows that the value of irrigation facilities does not fluctuate among the districts. It means that this indicator has almost stable conditions or increases slightly.

Considering the financial input, disparities in per capita bank credit to agriculture have decreased, i.e. 33.14 in 1981 to 30.94 in 1991 for Haryana and 48.60 to 33.44 for Punjab. Analyzing the value it has been found that the bank credit in Haryana have increased with slow growth rate compared to Punjab which has high growth rate.

The co-efficient of variation of per capita credit to industry has showed declining trend in inter district disparities in Haryana, where value of C.V. has declined 157.16 in 1981 to 101.37 in 1991. But in Punjab, the disparities show increasing trends. The value of C.V. for Punjab is 65.91 in 1981 to 88.89 in 1991. It shows that some districts of Punjab like Bathinda, Sangrur and Gurdaspur have low per capita credit to industry in comparison to other districts with respect of Ludhiana, Patiala, Jalandhar, Rupnagar etc.

The levels of inter district disparities in technological inputs have influenced the agricultural production of both the states. In Haryana, the trend shows decreasing trend but Punjab reveals an increasing trend among the district level disparities. The value of C.V. for Haryana is 46.71 in 1981 and 38.06 in 1991. Punjab's Co-efficient

45

of variation value is in 24.05 in 1981 and 36.67 in 1991. The per capita value of agriculture production varies district to district in Punjab. Like Rupnagar has 1518 Rs. per capita value of agriculture production but Sangrur and Bathinda has 4308 Rs, and 3533 Rs. respectively. In Haryana the difference in value of agricultural production among the districts does not high.

Roads are a crucial medium for communication and mobility between two places. But every district dose not has the same road length. Disparities in surface road length are show in Table No. 2.9 for Haryana and Punjab. The data reveals the increasing trend in both states.

The value of C.V. for length of metalled surfaced road has decreased from 17.04 in 1981 to 23.46 in 1991 for Haryana and 19.29 to 31.10 as corresponding figures for Punjab.

The P. & T. facilities are very important factor for the economic development. This facility varies from district to district. Haryana has shown decreasing trend in the districts wise disparities from 38.13 to 33.28 during the decade. Punjab reveals the increasing trend in disparities from 34.60 to 45.19. Punjab has high degree variability among the districts in 1991 as compared to 1981. We can observe from district level data that Gurdaspur has only 13.857 % habited villages having P & T. facilities but Faridkot has 56.29 percent.

In inter districts disparities in terms of percentage of inhabited village having telephone facilities. Haryana and Punjab show the decreasing trends where the value of C.V. is 39.75 in 1981 and 39.37 in 1991 for Haryana and 65.43 and 64.35 as the corresponding figure in Punjab.

II. 4.Composite Index of Level of the Economic Development, (1981-1991)

In order to get a synoptic view of the spatial pattern of the economic development and the consequent organization of space, an attempt have been made to composite the relevant indicators to articulate the phenomena of economic development. Eight indicators have been chosen which are discussed with in chapter. The analysis of each indicator separately cannot provide a composite picture of reality so the value of composite index has been obtained by principal component analysis method. Rank has been given to each district according to their composite index so that extent of level of development in the economic reactor could be depicted.

In Haryana, the situation of economic development according to selected indicators is very interesting in 1981 and 1991. It reveals that, Ambala has lost its top rank in 1981 to 7th rank in 1991. Faridabad and Gurgaon district has improved their rank from third to second and eight to fourth position. In 1981 Gurgaon has low level of irrigation facilities because of the climatic condition and agricultural land is not supporting for the development but after the construction of the Yamuna Canal through the Gurgaon district and shifting of industries from Delhi to Gurgaon are main reasons for promoted the rank of the development index.

Hissar, Karnal and Sirsa have improved their rank for economic development. Mahendragarh district shows the lowest rank in 1991 and ninth rank in 1981. The main reason behind this is availability of land for agriculture is very low because of the Aravali range scattered hear and there. Soil condition is not good for getting high production of crops. Sonipat maintains its rank in 1981 as well as in 1991.

The picture of economic development in Punjab reveals that Jalandhar has replaced its rank from top to second. But Amritsar improved rank 2nd to 1st in terms

TABLE 2·10

LEVEL OF DEVELOPMENT OF ECONOMIC INDICATORS

HARYANA

DISTRICT		1980-81			1990-91	
		FCA-1	R-FCA-1		FCA-1	R-FCA-1
AMBALA		1.61874	1		0.20311	7
BHIWANI		-1.0565	11		-1.1438	11
FARIDABAD		0.91224	3		1.6397	2
GURGOAN		-0.803	8		0.37509	4
HISSAR		-0.8316	10		-0.1869	9
JIND		-1.4606	12		-0.7277	10
KARNAL		0.5529	5		0.44006	3
KURUKSHETRA		0.70118	4		-0.0861	8
MAHENDRAGARH		-0.8056	9		-1.3668	12
ROHTAK		1.22395	2		1.66828	1
SIRSA		-0.1146	7		0.35039	5
SONIPAT		0.06294	6		0.3499	6

PUNJAB

DISTRICT		1980-81			1990-91	
		FCA-1	R-FCA-1		FCA-1	R-FCA-1
AMRITSAR		1.37218	2		1.71775	1
BATHINDA		0.9098	3		0.13469	6
FIRIDKOT		-0.1289	7		0.96576	3
FIROZPUR		-1.4087	12		-0.9835	10
GURDASPUR		0.12445	6		-0.8226	8
HOSIARPUR		-0.3844	8		0.75493	4
JALANDHAR		1.42344	1		1.22779	2
KAPURTHALA		-1.0087	10		-1.0321	11
LUDHIANA		0.59559	5		0.26179	5
PATIALA		-1.31	11		-1.229	12
RUPNAGAR		0.61247	4		-0.1532	7
SANGRUR		-0.7973	9		-0.8422	9

A1-*FERTILIZER CONSUMPTION IN KG./HA.*
A2-*GROSS IRRIGATED AREA AS % OF GROSS SHOWN AREA*
A3-*PER CAPITA BANK CREDIT TO AGRICULATURE IN RS.*
A4-*PER CAPITA BANK CREDIT TO INDUSTRY IN RS.*
A5-*PER CAPITA VALUE OF AGRICULTURE PRODUCTION IN RS.*
A6-*LENGTH OF METALLED SURFACE ROAD PER 100 Sq. KM.*
A7-*PERCENTAGE OF MANUFACTURING INDUSTRIAL WORKERS TO TOTAL MAIN WORKERS*
A8-*PERCENTAGE OF INHABITED VILLAGE HAVING P & T FACILITY*
A9-*PERCENTAGE OF INHABITED VILLAGE HAVING TELEPHONE CONNECTION*

Map - 2

HARYANA
LEVEL OF ECONOMIC DEVELOPMENT
1981

Index
High
medium
Low

20 10 0   20   40

Kilometer

Map - 3

HARYANA
LEVEL OF ECONOMIC DEVELOPMENT
1991

Index
High
medium
Low

20 10 0 20 40

Kilometer

Map 10

PUNJAB
LEVEL OF ECONOMIC DEVELOPMENT
1981

Index
High
medium
Low

20 10 0   20   40

Kilometer

Map 11

PUNJAB
LEVEL OF ECONOMIC DEVELOPMENT
1991

N
W — E
S
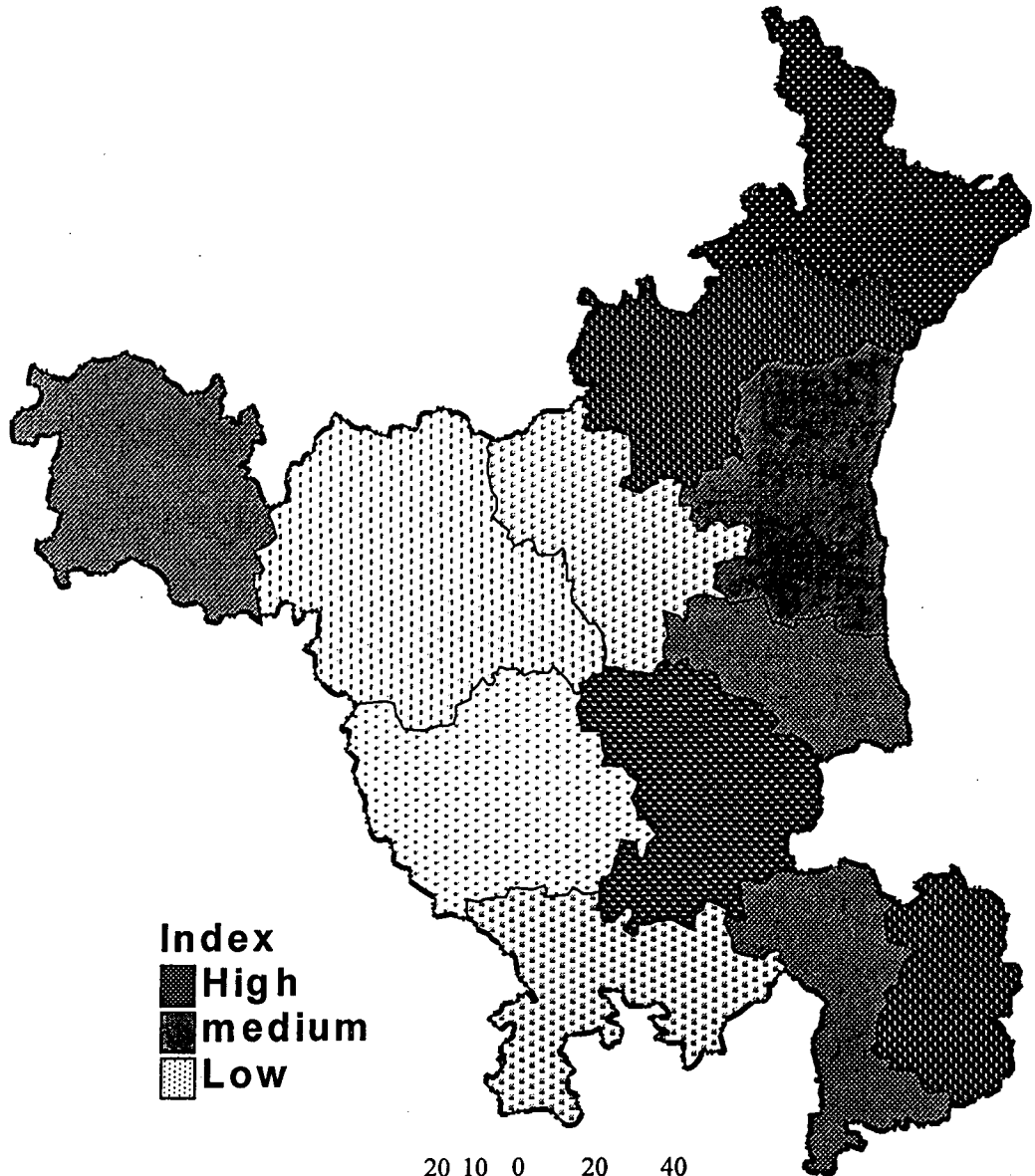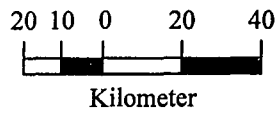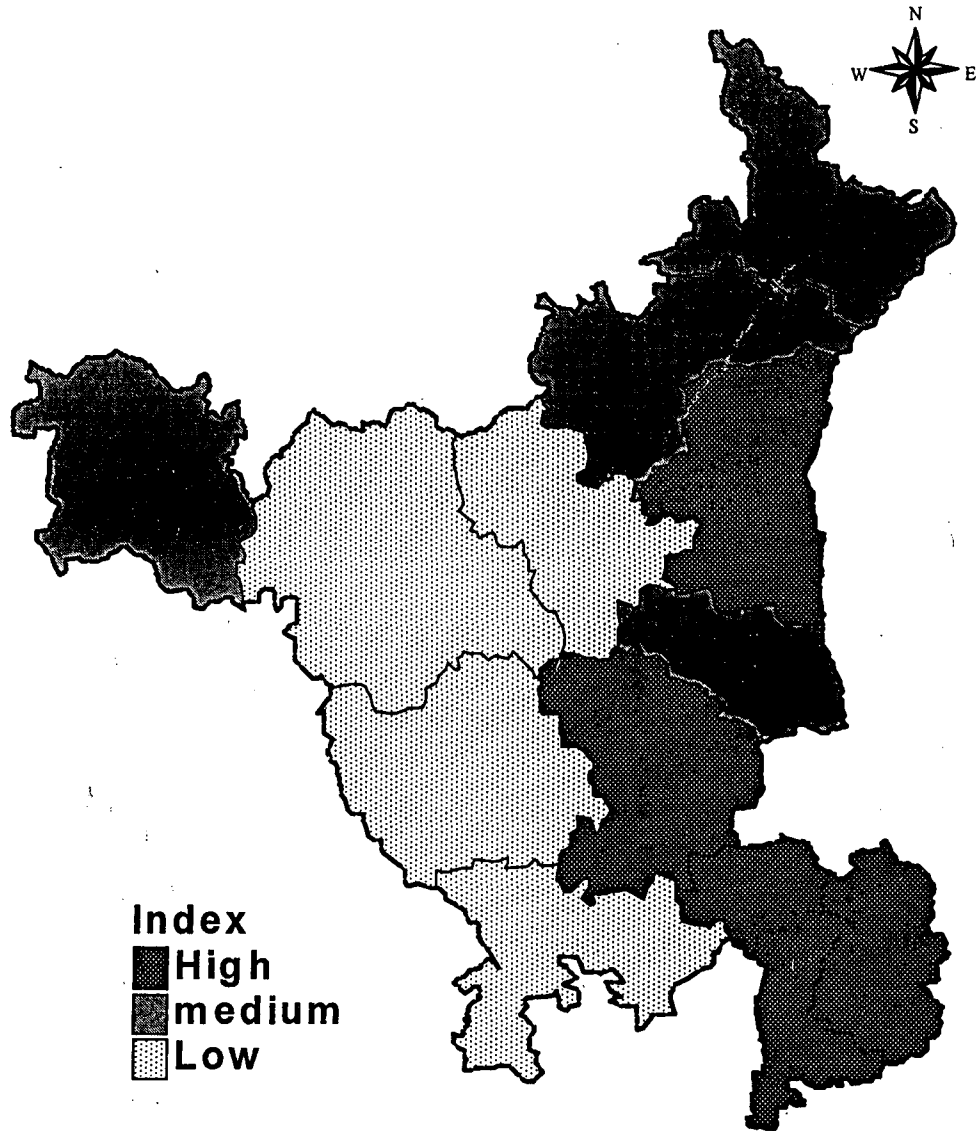
Index
High
medium
Low

20 10 0 20 40

Kilometer
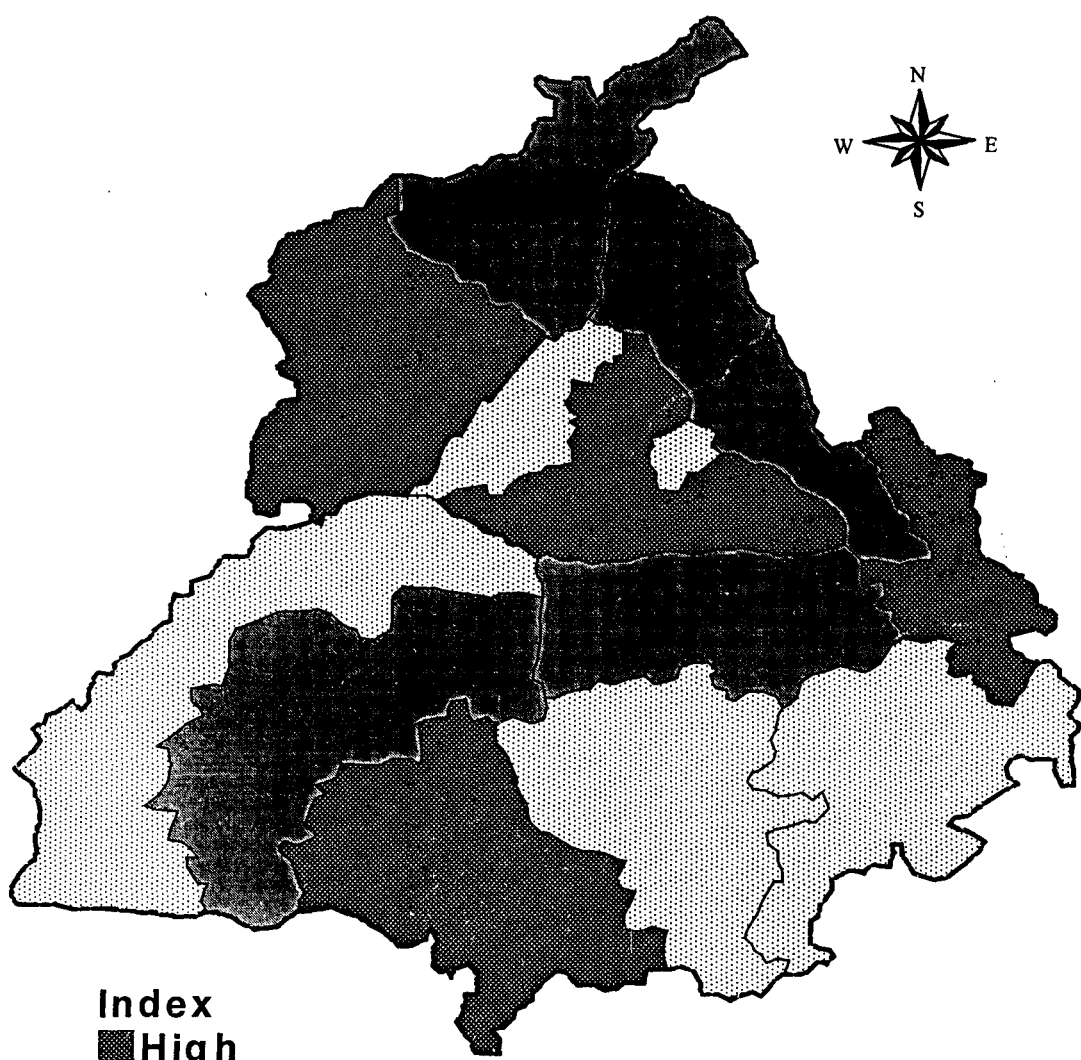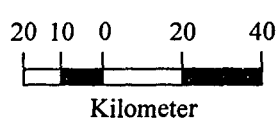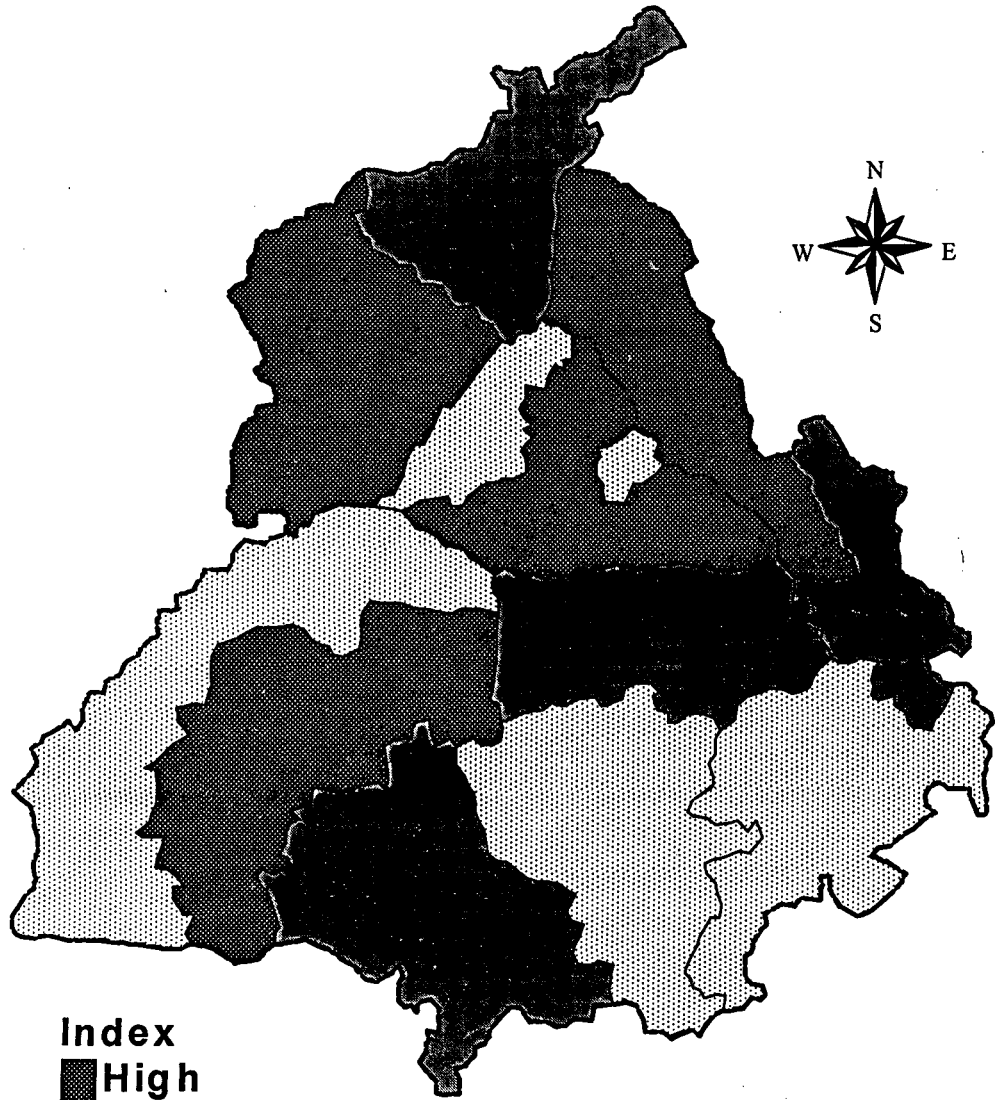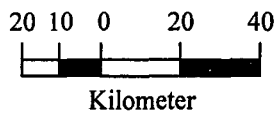
of economic development. The districts (Amritsar, Ludhiana and Jalandhar) have about 60 percent industries out of total industrial units in the state. [3] Firozpur, Kapurthala and Patiala districts have ranked very low. These three districts do not haven sufficient agricultural input and infrastructural facilities.

Faridkot and Hoshiarpur district improved their ranks during 1981-91. But Gurdaspur and Patiala have lost their ranks during the decade. The main reason behind this phenomenon lies in the fact that most of the main workers are engaged in the primary activities, low level of urbanization and low level of social activities.

II. 5. SUMMARY OF FINDINGS

With the homogeneity in physiographic and other physical features, the selected states show characteristics of forwardness in agricultural development. On the other hand economic development shows the positive trend.

➢ Inter district variation in the technological inputs have led to a severed contraction of the high productivity core in case of Haryana, Jind, Karnal, Kurukshetra; and in Punjab; Bathinda, Kapurthala and Patiala districts have higher use of technological inputs in agriculture.

➢ In case of irrigation facility, Punjab that has better position compared to Haryana. There are moderate disparities among the district. These are seven districts that have registered growth rate of more than 2 percent annually.

➢ In case of Road and P & T facility. Punjab has the better position compared to Haryana.

➤ In Level of inter district disparities in economic development Haryana has a high degree of disparities in each indicator in comparison to Punjab. Punjab's level of development is high.

In the overall economic development index Ambala, Rohtak and Faridabad have achieved the first three ranks in 1901 but in 1991 Ambala dropped to $7^{th\ rank}$ and Rohtak's position is at the top. In Punjab; Amritsar and Jalandhar where agricultural and industrial infrastructure is good as discussed above, achieved second and first rank. In 1981 and in 1991 they replace their rank. The strategy of development has basically resulted into concentration of technological inputs in the comparatively advanced districts, leaving other districts backward.

END NOTES

[1] Parthasarthy. G. (1996): "Unorganised sector and structural adjustment"   Economic and Political Weekly, 13 July 1996, pg. 31.

[2] Bhalla G.S. and Tyagi D.S. "Spatial Pattern of Agricultural Development in India" Economic and Political Weekly, June 24, 1989.

[3] Mavi H.S. and Tiwana D.S.: 1994 Geography of Punjab, India – The Land and People, N.B.T. India, Pg. 117.

CHAPTER – III

SOCIAL DEVELOPMENT

III. 1. INTRODUCTION

Social indicators like education, health, nutrition sanitation are important elements influencing human development. The development of social infrastructure in any settlement will improve the economic and cultural life of the people. In sociological perspective, social amenities have been defined as the facilities that help in improving quality of life of people.[1] In actual practice it has been measured in terms of a variety of suitable criteria. These include health, education, transport and population mobility, these indicators reflects the quality of functioning of a social system, efficiency of its economic welfare, basis of its policy and behavioural patterns of its people.

Dealing with the pattern of spatial organization of social facilities researchers held the view that social indicators must be part of the coherent system of socio-economic measurement that can facilitate comprehensive and balanced judgment about major aspects of a society.[2] The available literature, especially in India indicates various aspects such as integrated area development, micro level planning, community development, districts, taluka or block level planning and planning for central places etc. The work of spatial planning for socio-economic structure has its beginning in mid sixties. In 1967, National Institute of Community Development,

Hyderabad brought out a base work of S. Wanmali[3] on the problem of regional planning for social facilities. The Sixth Five Year Plan was heavily oriented towards rural planning and development. Planning Commission appointed two committees towards the end of 1997 - the Dantawala Working Group on Block Level planning and the Ashok Mehta Committee on Panchayati Raj Institutions. Both of these committees emphasized the implementation of the minimum need programmes, health and medical facilities. drinking water, housing, education and supply of essential commodities through a public distribution system.[4] However one may safety state that under all circumstances increased the value of education and health indicators makes an important contribution to social development of a society.

This chapter has basically been devoted to identify the level of social development of districts based on their factor scores at two points of time viz. 1981 and 1991 respectively. This chapter includes a detailed discussion on level of social development for the decade 1981-91.

The following indicators have been selected

1.   Number of primary schools per lakh population

2.   Number of pupil per teacher in primary schools

3.   Number of middle/higher schools per lakh population

4.   Number of pupil per teacher in middle/higher schools

5.   Percentage of inhabited villages having medical facilities

6.   Number of primary health centres per lakh population

7.   Number of hospitals and dispensary beds per lakh population

8.   Percentage of household having safe drinking water and toilet facility.

III. 2. LEVEL OF SOCIAL DEVELOPMENT: A DISTRICT WISE ANALYSIS, (1981-91)

The following analysis is based on the district wise examination of selected indicators of social development in state of Haryana and Punjab. There are twelve districts of each state.

III. 2.1. Number of Primary Schools per lakh Population

Education is a context for interaction, participation and sharpening of the tools of understanding. It is a cultural exposure.[5] Early childhood education would be expanded by attaching pre-primary classes to selected primary schools. India's five-year plans resulted into a significant growth in the education infrastructure for imparting the formal education i.e. primary schools, middle and high schools.

Fig. 3.1 reflects in that Haryana and Punjab decreased their number of primary school had decreased from 1981 to 1991 in terms of per lakh population. Haryana's figure of primary school in 1981 was 40.57 and 32.2 in 1991 as proportion to per lakh population. The districts showing highest number of primary schools in 1981 was Mahendragarh followed by Ambala and Gurgaon with the value 61.64, 55.74 and 54.7 respectively. The lowest value was found in Rohtak district that had 23.2 primary schools per lakh population.

In 1991, there was no district except Sonipat which had shown an increase in the number of primary schools during the decade 1981-91. The maximum figure was observed in Mahendragarh district (53.01) followed by Gurgaon and Sirsa with value of 47.38 and 33.69. Rohtak had also the same position as 1981. The main reason

53

HARYANA
NUMBER OF PRIMARY SCHOOLS PER LAKH POPULATION
1981-91

Chart: Primary schools per lakh population by district (Haryana), comparing 1980-81 and 1990-91.

Y-axis: PRIMARY SCHOOLS PER LAKH POP (0–70)

X-axis (DISTRICTS): AMBALA, BHIWANI, FARIDABAD, GURGOAN, HISSAR, JIND, KARNAL, KURUKSHETRA, MAHENDRAGARH, ROHTAK, SIRSA, SONIPAT

Legend: □ 1980-81 ■ 1990-91

PUNJAB
NUMBER OF PRIMARY SCHOOLS PER LAKH POPULATION
1981-91

Chart: Primary schools per lakh population by district (Punjab), comparing 1980-81 and 1990-91.

Y-axis: PRIMARY SCHOOLS PER LAKH POP (0–350)

X-axis (DISTRICTS): AMRITSAR, BATHINDA, FIRIDKOT, FIROZPUR, GURDASPUR, HOSHIARPUR, JALANDHAR, KAPURTHALA, LUDHIANA, PATIALA, RUPNAGAR, SANGRUR

Legend: □ 1980-81 ■ 1990-91

FIG 3·1

behind the decrease in the number of primary schools per lakh population was probably to the faster growth rate of population than the growth and establishment of primary schools. Punjab showed also same the trend as Haryana. All of the districts had lower number of primary schools in resent years.

The data however had revealed that the availability of primary education in Punjab was better than Haryana. Hoshiarpur has 290.5 primary schools per lakh population in 1981, but in 1991 this figure had decreased to 101.8 primary schools. Bathinda had lowest number of primary school that is 49 in 1981 and 44.05 in 1991. These were four districts that had higher level of 70 primary schools or more per lakh population. These districts were Firozpur, Gurdaspur, Kapurthala and Patiala. The main reason of the decrease of primary school per lakh population over time, in Punjab was faster growth rate of population due to large influx on migrant population from eastern UP and Bihar.

TABLE 3.1.
Growth in number of Primary Schools per Lakh population 1981-91

Compound growth rate in (%)	District in Haryana	Compound growth rate in (%)	Districts in Punjab
> - 1	Sonipat	> - 1	Jalandhar
- 3 - - 1	Bhiwani, Faridabad, Gurgaon, Hissar, Jind, Mahendragarh, Sirsa	- 1.5 - - 1	Bathinda, Gurdaspur
- 5 - - 3	Rohtak	- 2 - - 1.5	Amritsar, Faridkot, Firozpur, Kapurthala, Patiala, Sangrur
< - 5	Ambala, Karnal, Kurukshetra	< - 2	Hoshiarpur, Ludhiana

Source: Statistical Abstracts Punjab and Haryana, Economic and Statistical Organisation – 1981-91.

Table 3.1 portrays that in all the districts of Haryana and Punjab Haryana and Punjab there had been a negative growth rate in the number of primary schools per lakh population.

The main reason behind this is the higher growth of population in comparison to the increase of primary schools. Ambala, Karnal and Kurukshetra had recorded highest negative growth that is below five percent. Here agriculture related in migration had been are maximum.

III. 2.2. Number of Pupil per Teacher in Primary Schools

The ratio of pupil and teacher shows the standard of education in any region. This indicator is also gives the contribution to education development which is important for social development.

Fig.3.2. reveals the level of number of pupil per teacher in primary school during the period of 1981-91. The level of pupil-teacher ratio in primary schools in all districts of Haryana had shown that number of pupil under one teacher had increased during the concern decade 1981-91. The proportion of pupil per teacher is 41 in 1981 and 44 in 1991 for the Haryana state as a whole. The figures above this (42 pupil per teacher) had been noted in the districts of Bhiwani (44), Hissar (43), Karnal (42) Mahendragarh (45), Kurukshetra (48) and Sirsa (44). All of these districts have less population compared to other districts of Haryana and availability of primary schools is more according to available data. The pupil per teacher is below 40 in the districts of Faridabad, Jind and Rohtak with values 36, 38 and 39 respectively. In 1991, all districts of Haryana have above 42 pupils per teacher in primary school.

HARYANA
NUMBER OF PUPIL PER TEACHER IN PRIMARY SCHOOL
1981-91

PUPIL PER TEACHER IN PRIMARY SCHOOL

DISTRICTS

☐ 1980-81
▨ 1990-91

PUNJAB
NUMBER OF PUPIL PER TEACHER IN PRIMARY SCHOOL
1981-91

PUPIL PER TEACHER IN PRIMARY SCHOOL

DISTRICTS

☐ 1980-81
▨ 1990-91
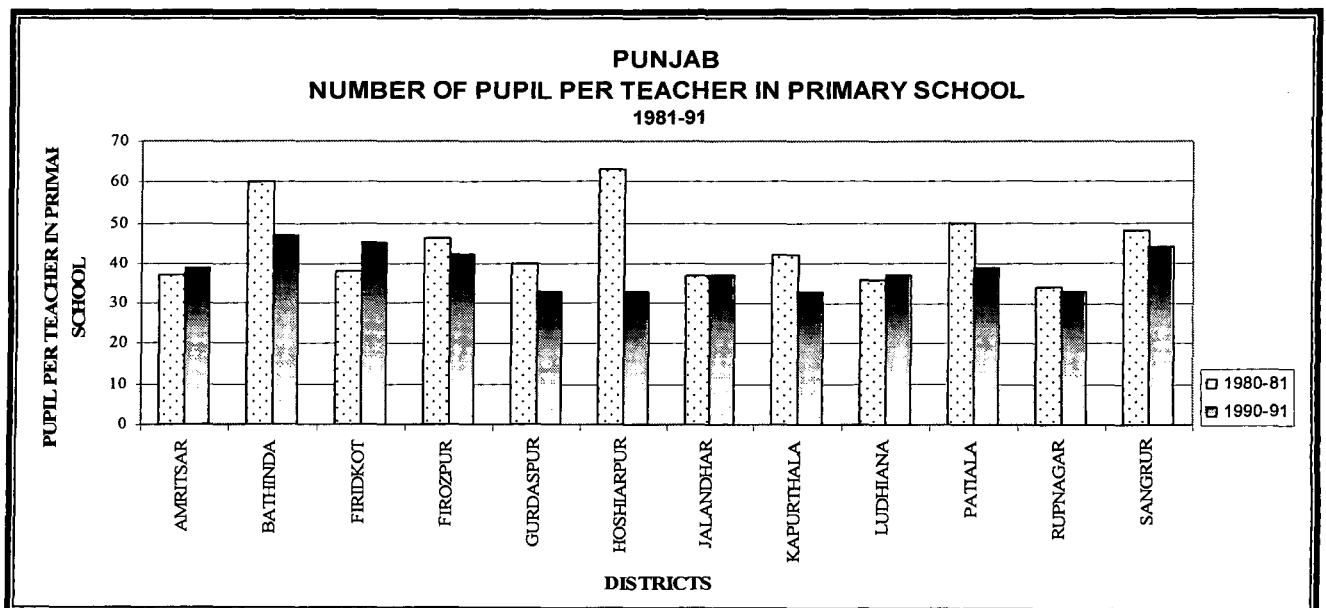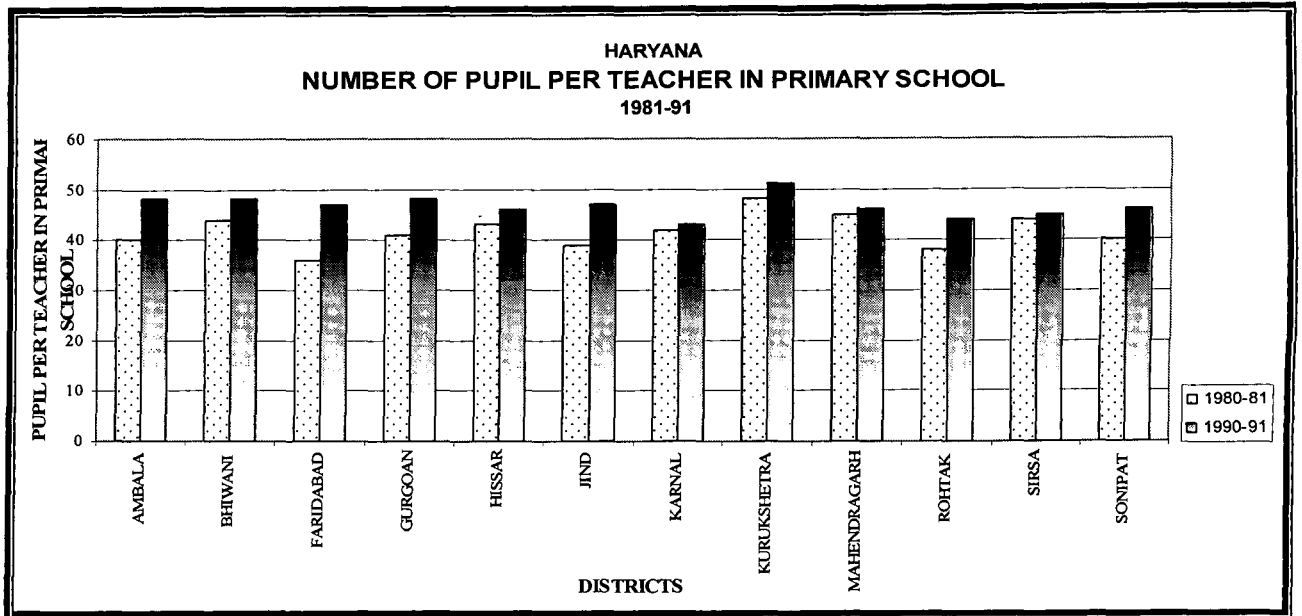
FIG 3.2

Mahendragarh and Bhiwani have more than state average in terms of pupils per teacher in primary school. But in Karnal the increase was that of only one student per teacher. So, Karnal showed a better picture.

In Punjab, where eight districts had negative change during 1981-91 in terms of pupil per teacher in primary school that reflected a better situation. Only Faridkot district had an increased seven pupils per teacher during 1981-91. In 1981 in Hoshiarpur, there were 36 students which became 33 in 1991, that is around half compared to 1981. This whole picture showed the population of under age of 10 is growing a faster rate but primary schools teachers are not being appointed according to the strength of students, particularly in Haryana.

Table3.2

Growth in number of Pupil per teacher in Primary School, 1981-91

Compound growth rate in percentage	Districts in Haryana	Compound growth rate in percentage	Districts in Punjab
> 1.5	Ambala, Faridabad, Gurgaon, Jind	> 1	Faridkot
1-1.5	Rohtak, Sonipat	-0.5 – 1	Amritsar, Jalandhar, Ludhiana, Rupnagar
0.5-1	Bhiwani, Hissar, Kurukshetra	- 2- -05	Firozpur, Gurdaspur, Sangrur
< 0.5	Karnal, Mahendragarh, Sirsa	< - 2	Bathinda, Hoshiarpur, Kapurthala, Patiala

Source: Statistical Abstracts Punjab and Haryana, Economic and Statistical Organisation – 1981-91.

56

In respect of growth of number of pupil per teacher in primary school between decades of 1981-1991, there are four districts of Haryana that have achieved growth rate of more than 1.5 percent. These four districts (Ambala, Faridabad Gurgaon and Jind) have a higher growth of child population compared to the availability of teachers. But Karnal, Mahendragarh and Sirsa which fell in the category of growth below the 0.5 percent annually during the state under study.

Punjab's districts have very low growth rate in pupil per teacher in primary school. All of twelve districts except Faridkot have experienced negative growth rate. It means the proportion of student in primary school has growing at a much faster rate.

III. 2.3. Number of Middle/Higher Schools per lakh Population

The higher percentage of student in middle/higher schools is a mark of level of educational development. Good schooling provides a good base for any student's intellectual development. But in the school system, quality improvement and rising of the internal efficiency of the existing system should be emphasized.

The following fig.3.3.shows the level of number of middle/higher school per lakh population in the sample states. The availability of middle/higher school is more in Punjab than Haryana in both year 1981 and 1991. In Haryana, there were four districts which have eight and above middle/higher school per lakh population in 1981. These districts were Mahendragarh, Bhiwani, Hissar and Sonipat. In 1991, Sonipat had highest schools per lakh population that is 11.7 schools. The noted point is that the developed districts like Gurgaon, Faridabad, Ambala, and Rohtak had

57

HARYANA
NUMBER OF MIDDLE/HIGHER SCHOOLS PER LAKH POPULATION
1981-91

HARYANA
NUMBER OF MIDDLE/HIGHER SCHOOLS PER LAKH POPULATION
1981-91
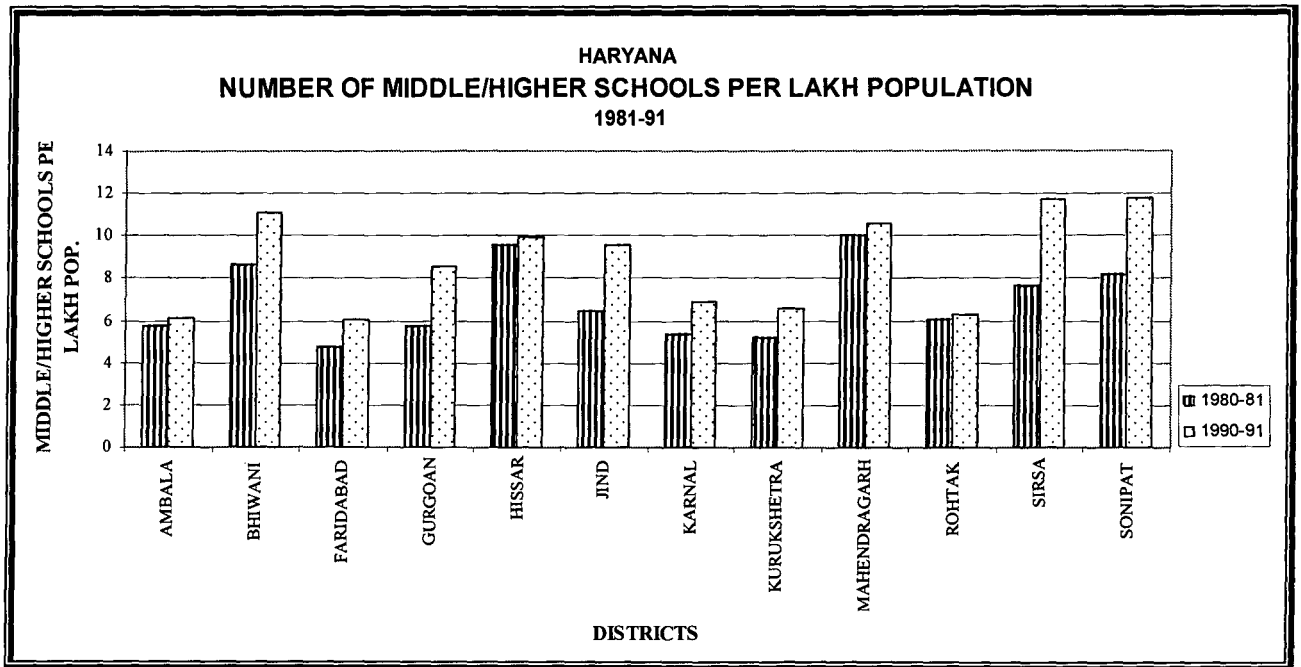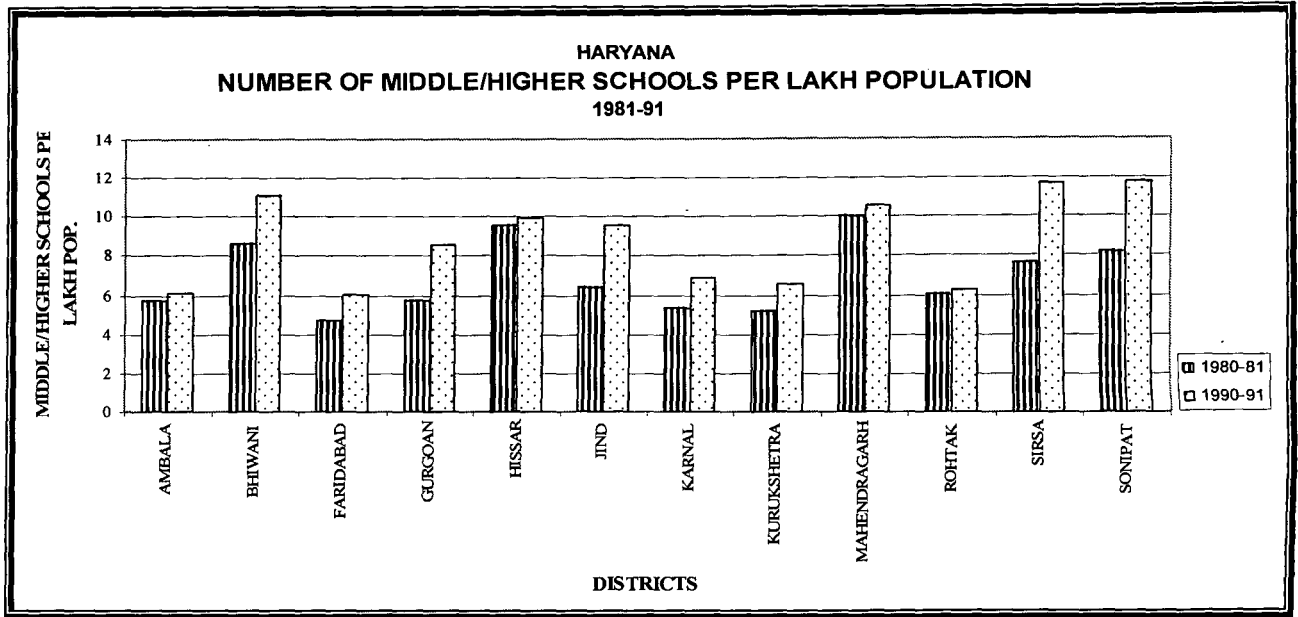
FIG 3·3

lesser number of middle schools per lakh population. For these districts, the number of schools availability was less than 7 schools per lakh population. Higher population pressure in the young ages may be a possible explanation.

In 1981, Punjab's districts had better availability of middle/higher school than Haryana. The position was the same in 1991 also. The average figure of middle and higher school is 8.62 in 1981 and 13.89 in 1991. The district level analysis showed that Kapurthala had the highest number of middle/higher school per lakh population, (13.69). All districts had increased their number of school per lakh population during the 1981-91, which an shown same improvement over the previous decade

The main reason for the increase of the middle and higher school per lakh population is due to investment in education by the government and private entrepreneurs. This had lead to increase in infrastructural facilities regarding education, higher per capita income and expansion of education to rural people.

Table 3.3.
Growth in Number of Middle/Higher Schools per lakh Population, 1981-91

Compound growth rate in percentage	Districts of Haryana	Districts of Punjab
> 3	Gurgaon, Jind, Sirsa, Sonipat	Faridkot, Rupnagar
2 – 3	Bhiwani, Faridabad, Karnal, Kurukshetra	Bathinda, Gurdaspur
1 – 2	--	Amritsar, Firozpur, Hoshiarpur, Jalandhar, Kapurthala, Ludhiana, Patiala
< 1	Ambala, Hissar, Mahendragarh, Rohtak	Sangrur

Source: Statistical Abstracts Punjab and Haryana, Economic and Statistical Organisation – 1981-91.

58

The tables 3.3 show the growth of middle/higher school per lakh population during 1981-91. There were three districts of Haryana and two districts of Punjab that have registered 3 percent and above growth rate annually. These districts are Gurgaon, Jind, Sirsa and Sonipat, Faridkot and Rupnagar in Punjab. Gurgaon is a fast growing district during 1981-91 decade in terms of educational development. Seven districts of Punjab had experienced growth rate between 1 to 2 annually. Ambala, Hissar, Mahendragarh and Rohtak in Haryana and Sangrur in Punjab had lowest growth rate.

III. 2.4. Number of Pupil per Teacher in Middle/Higher Schools

The pupil-teacher ratio in middle/higher schools is very important factor which gives the contribution to education development. If the pupil's strength is high with one teacher than teacher will be unable to teach student properly.

Fig. 2.4 showed the level of pupil teacher ratio in study area (Haryana and Punjab) during the selected period 1981-1991. The average of Haryana state was 25 pupils per teacher in 1981. There were only four districts which had figures more than state average. These districts were Gurgaon, Jind, Karnal and Rohtak. In 1991, the state average increased by three pupil per teacher and there were seven district with 28 and more pupil per teacher in middle/higher schools. Karnal and Sonipat had recorded the highest growth rate and had shown a serious detail of teachers. The low increase in pupil per teacher is reason by the high proportion to total population in specific age group of 10-14. The proportion of this age group is 11 to 14 percentage to total population.[6]

HARYANA
NUMBER OF PUPIL PER TEACHER IN MIDDLE/HIGHER SCHOOL
1981-91

PUNJAB
NUMBER OF PUPIL PER TEACHER IN MIDDLE/HIGHER SCHOOL
1981-91
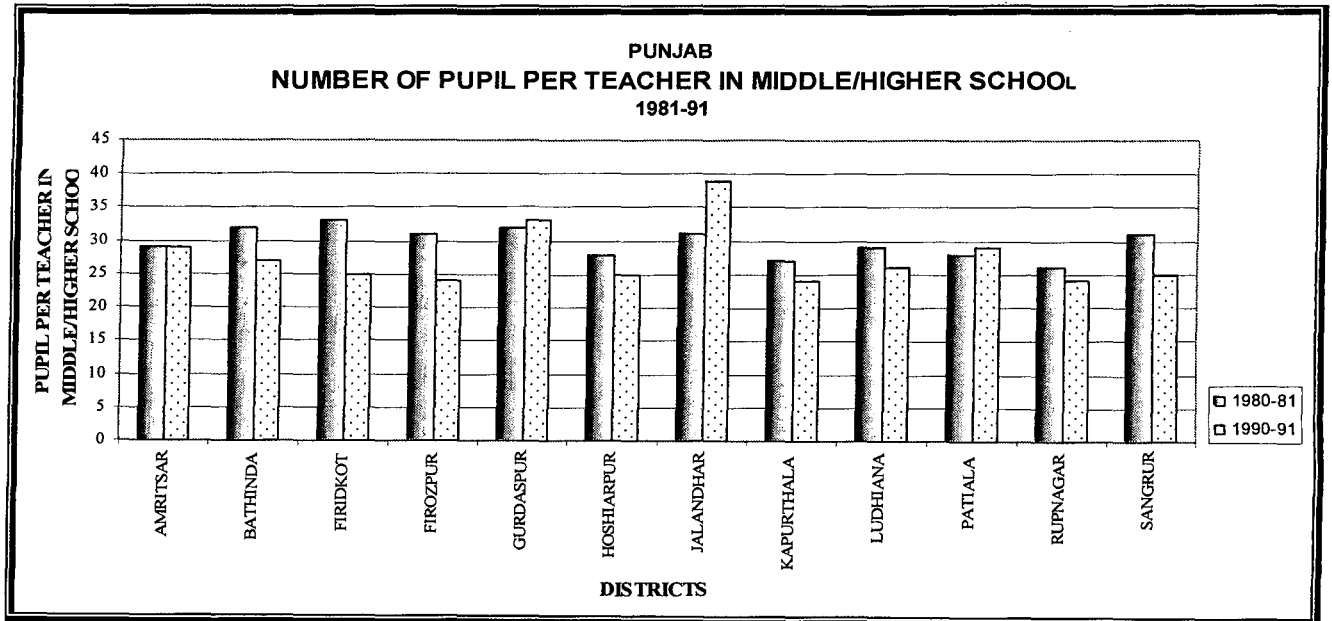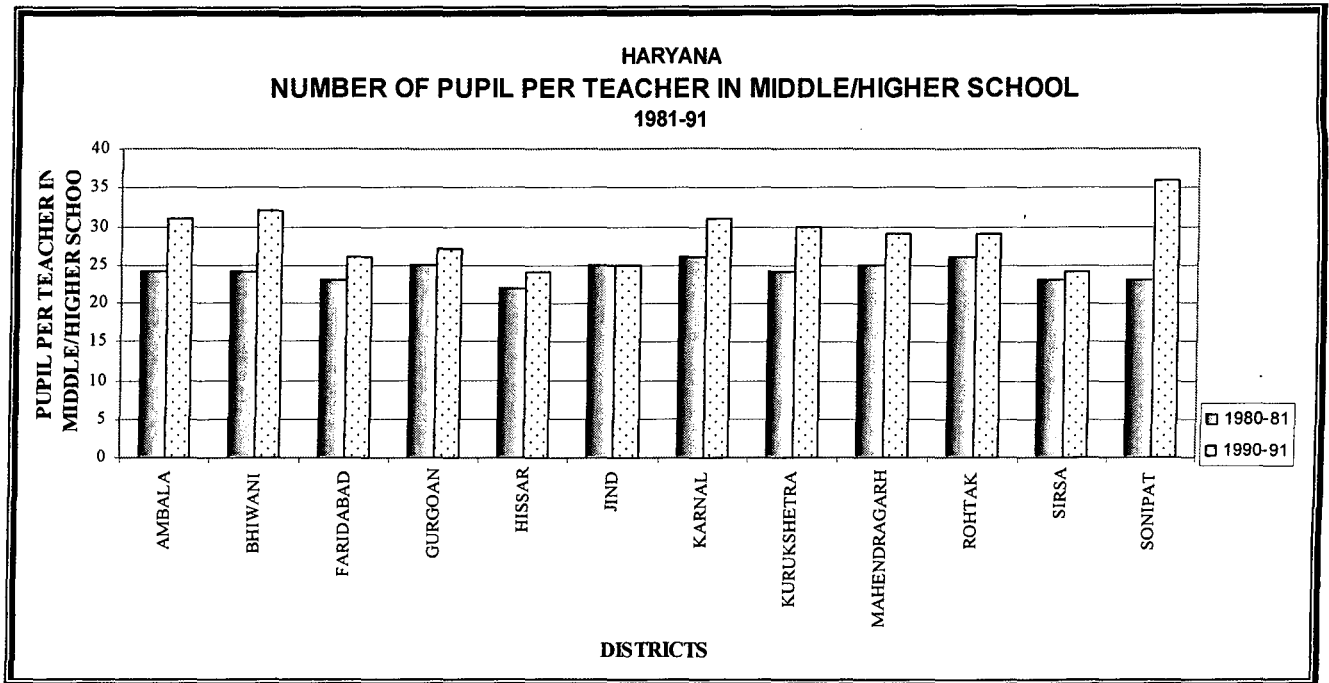
FIG 3·4

Punjab's districts have better position to Haryana, because seven districts had

registered negative growth rate in pupil-teacher ratio. It meant that education structure

had improved compared to 1981. The average of pupil per teacher in Punjab was 30 in

1981 and 27 in 1991.

There were six districts which had 30 and above pupil per teacher in

middle/higher schools in 1981; and in 1991, there were seven districts which lie in

below the 27 pupil per teacher category. Jalandhar had 39 pupils per teacher which

was the highest in 1991.

Table 3.4.

Growth in Number of Pupil per teacher in Middle/Higher School, 1981-91

Compound growth rate in percentage	Districts in Haryana	Compound growth rate in percentage	District in Punjab
> 3	Sonipat	> 0	Gurdaspur, Jalandhar, Patiala
2-3	Ambala, Bhiwani, Kurukshetra	- 1 – 0	Amritsar, Rupnagar
1-2	Faridabad, Karnal, Mahendragarh, Rohtak	- 2 - - 1	Bathinda, Hoshiarpur, Kapurthala, Ludhiana
< 1	Gurgaon, Hissar, Jind, Sirsa	< -2	Faridkot, Firozpur, Sangrur

Source: Statistical Abstracts Punjab and Haryana, Economic and Statistical
Organisation – 1981-91.

The table 3.4 indicates the annual growth in number of pupil per teacher in

middle/higher school during the decade 1981-1991. It reflects a very low growth rate

in Haryana and nine districts of Punjab had negative growth rate per annum, which is

welcome scenario. Three districts, which had positive growth rate but not more than one, are Gurdaspur, Jalandhar and Patiala. Haryana has positive growth rate, which was not more than 3 except Sonipat which has 4.58% growth rate.

III. 2.5. Percentage of inhabited Villages having Medical Facility

Health is a state of complete physical, mental and social well being and is a fundamental right which has remained an intrinsic part of the overall development in the last three decades of independence. A considerable headway has been made by India in this field by adoption of various programmes aimed at the improvement of the health conditions. The National Health Policy (1983) registered India's commitment to attain "Health For All (HFA) by 2000 A.D." Primary health care has been accepted as the main instrument for achieving this goal.[7]

The following Fig. 2.5 represents the achievement of any medical facility in rural area of the concerned states. In the year of 1981, Haryana had 25.5 percent villages having medical facilities. There were four districts (Rohtak, Karnal, Jind, and Hissar) which had highest percentage of inhabited villages having medical facilities with value 36.53%, 24.48%, 36% and 37.39% respectively. All of other districts had medical facilities in rural area below 23.5 percent. In 1991 the national average is 33 percent. In all the districts in Haryana, rural medical facility was more than the national average. Jind, Hissar, Rohtak and Karnal had maintained their highest percentage among the districts of Haryana, with value of 76.7%, 65.5%, 69.2% and 56% respectively. In these districts, Panchayati Raj System may have been an effective instrument for such development, including community participation in the

61

HARYANA
PERCENTAGE OF INHABITED VILLAGES HAVING MEDICAL FACILITY
1981-91

PUNJAB
PERCENTAGE OF INHABITED VILLAGES HAVING MEDICAL FACILITY
1981-91
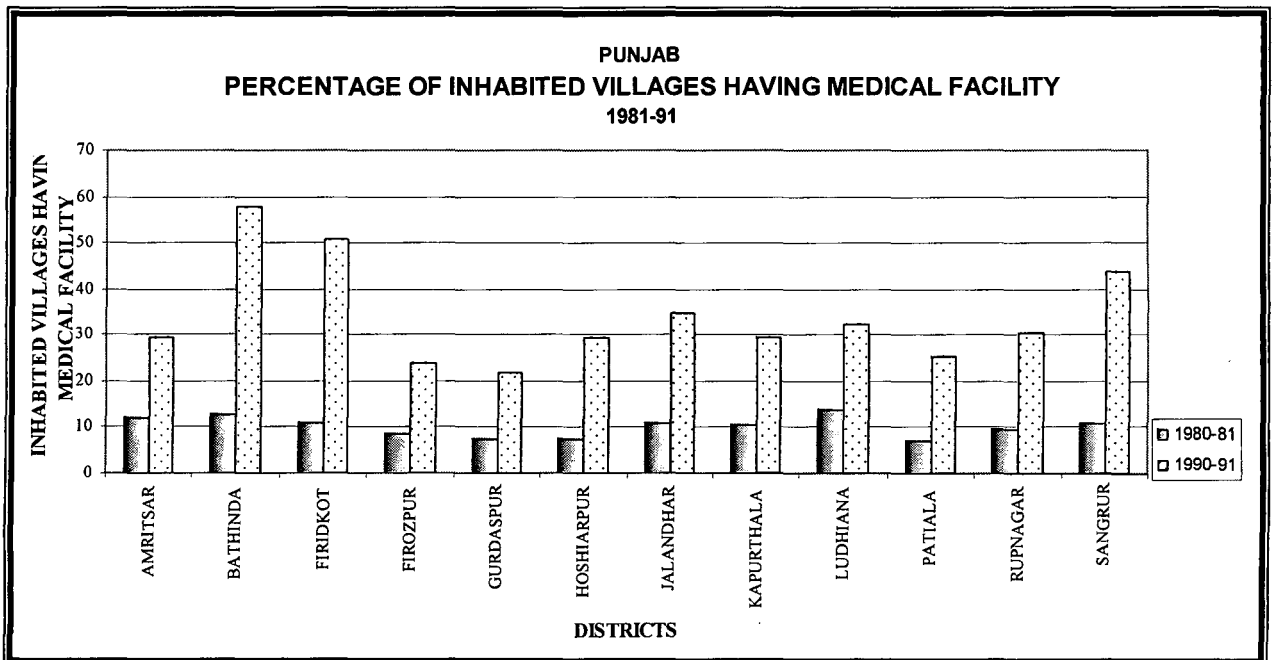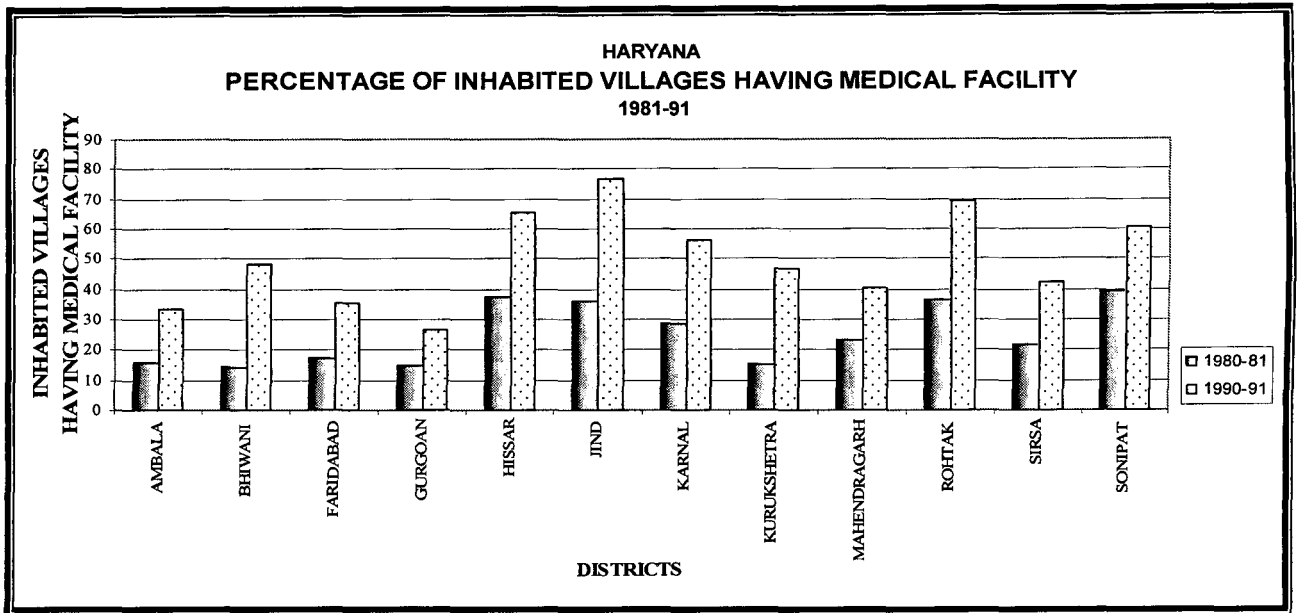
FIG 3.5

local health programmes and providing supervision and support to primary health care infrastructure.[8]

In Punjab, the availability of rural health or medical facility was less than that of Haryana. The overall average of Punjab was 9.26% in 1981 and 31.05 percent in 1991. This was below the national average. Districts which had rural medical facilities were Ludhiana, Bathinda and Amritsar. Others had below 11 percent inhabited villages, which had having medical facility in 1981. There were eight districts which were below the national average. Bathinda, Jalandhar Faridkot and Sangrur districts had highest percentage with the value of 57.4%, 34.7%, 50.71% and 43.86% respectively. The probable reason may be that linkages had developed with the sub-divisional and district hospitals to provide referral back ups.

Table 3.5
Decadal change in Percentage of Inhibited Villages having Medical Facility, 1981-91

Decadal change in percentage	Districts in Haryana	Districts in Punjab
> 28	Bhiwani, Hissar, Jind, Kurukshetra, Rohtak	Bathinda, Faridkot, Sangrur
21 – 28	Karnal, Sonipat	Hoshiarpur, Jalandhar
14 – 21	Ambala, Faridabad, Mahendragarh, Sirsa,	Amritsar, Firozpur, Gurdaspur, Kapurthala, Ludhiana, Patiala, Rupnagar
< 14	Gurgaon	-----

Source: Availability of infrastructural facility in rural India Table no. 3, Census of India 1991.

Table 3.5 shows decadal growth rate in the medical facility in Haryana and Punjab during the decade 1981-91. Five districts in Haryana and three districts in Punjab had experienced a growth rate more than 28 percent. These district had maximum percentage of rural population and sub-division and district headquarters were only at a distance of 20 to 30 km. Due to this reason maximum health facilities had provided by government in there districts. On the other hand there were other districts like Faridabad, Ambala, Gurgaon, Amritsar, Ludhiana, and Patiala that had shown a decadal change below 21 percent.

III. 2.6. Primary Health Centres per lakh Population

The entire gamut of socio-economic endeavor is directed towards the physical and mental well being of human beings in society. Health policy resolution adopted in 1963 envisages an integrated approach to health through preventive, productive and creative measures.

Fig. 2.6 reveals districts wise ratio of primary health centres per 100,000 of population in Haryana and Punjab during 1981 and 1991. For the state of Haryana as a whole, the number of primary health centres per lakh of populations was 0.69. The number of primary health centres above 0.80 per lakh population was found in Mahendragarh and Gurgaon districts which claim 17.98% of total primary health centres of the states.[9] The number of primary health centres ranged between 0.641 and 0.80 in the districts of Rohtak, Jind, Hissar, Sonipat, Karnal and Bhiwani. These districts had 55.5% of the total primary health centres of the state on the whole. The

HARYANA
NUMBER OF PRIMARY HEALTH CENTRES PER LAKH POPULATION
1981-91

PUNJAB
NUMBER OF PRIMARY HEALTH CENTRES PER LAKH POPULATION
1981-91
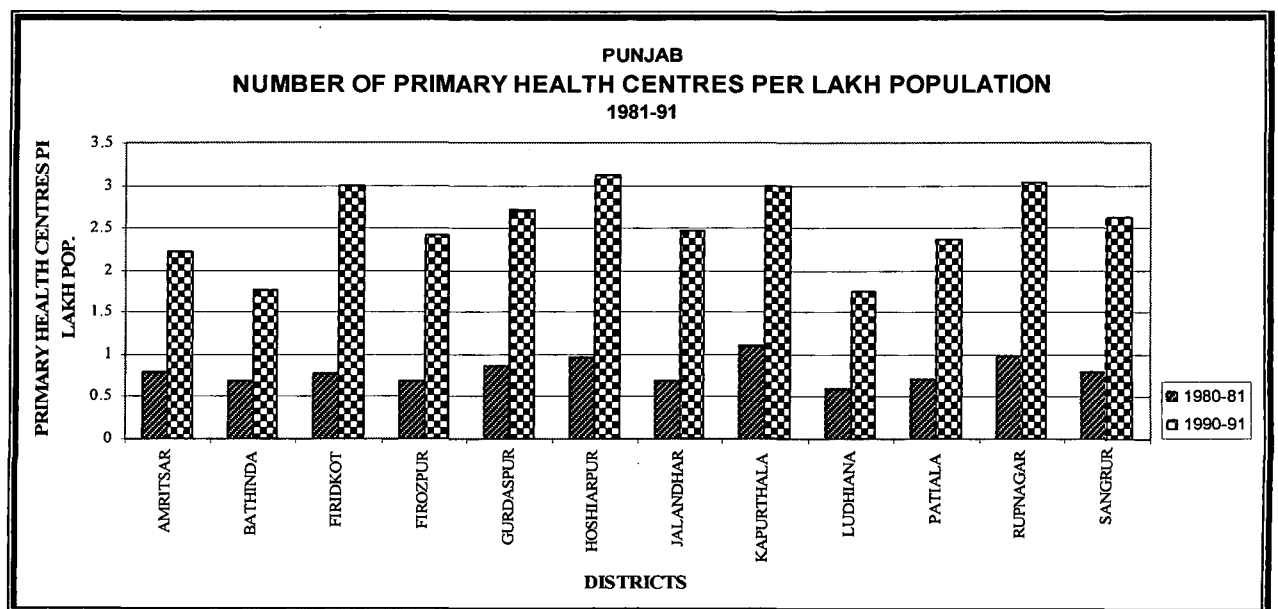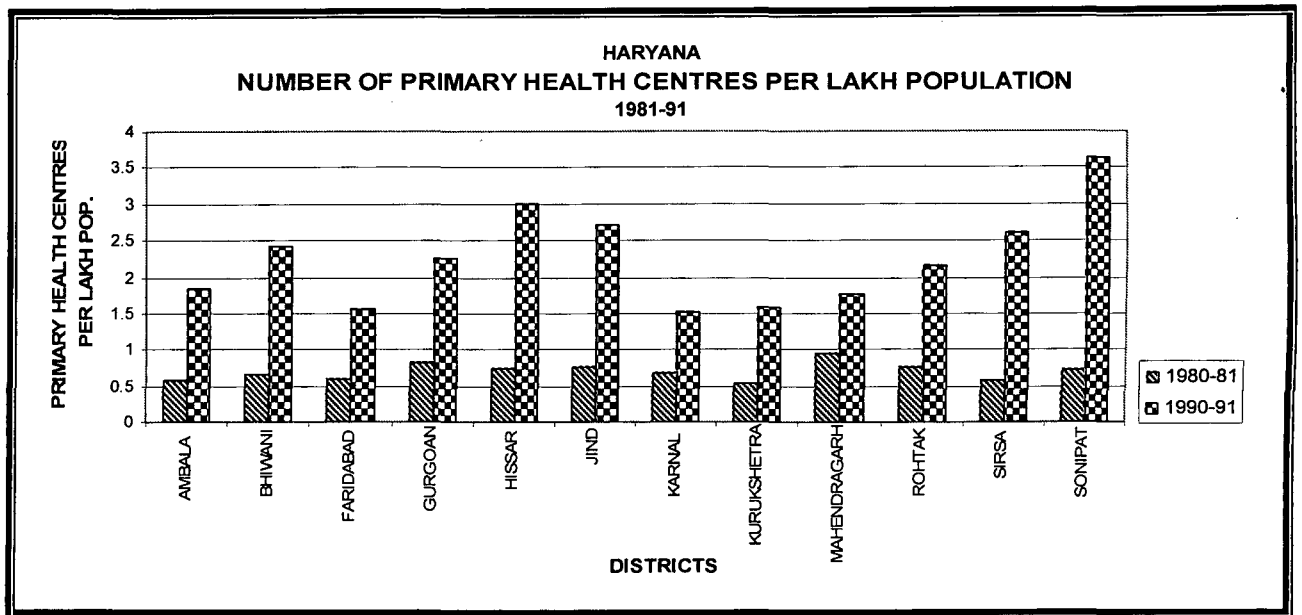
FIG 3·6

four districts (Faridabad, Ambala, Sirsa and Kurukshetra, had below 0.61 primary health centres per lakh population.

In 1991, Jind, Mahendragarh, Hissar and Bhiwani which claimed 34.79 percent of total primary health centers available in the state. The numbers of PHCs in these districts were above 2.5 per lakh population. Below two lakh and below PHCs were found in the districts of Ambala, Faridabad, Kurukshetra, and Mahendragarh.

In Punjab, among the districts Hoshiarpur has 3.11 primary health centres for every lakh of population and ranked at the top, while Ludhiana with a figure of 1.75 was at the bottom. The range 2.01 to 3.00 covers seven districts namely, Amritsar, Faridkot, Firozpur, Gurdaspur, Jalandhar, Kapurthala, Rupnagar and Sangrur. Rest of districts had below two lakh PHCs per lakh population.

Table 2.6

Growth rate in the number of Primary Health Centres per Lakh Population, 1981-1991

Compound growth in percentage	Districts in Haryana	Districts in Punjab
> 15	Sirsa, Sonipat	--
11-15	Ambala, Bhiwani, Hissar, Jind, Kurukshetra, Rohtak	Amritsar, Faridkot, Firozpur, Gurdaspur, Hoshiarpur, Jalandhar, Ludhiana, Patiala, Rupnagar, Sangrur
7-11	Faridabad, Gurgaon, Karnal	Bathinda, Kapurthala
< 7	Mahendragarh	---

Source: Statistical Abstracts Punjab and Haryana, Economic and Statistical Organisation – 1981-91.

The table 2.6 reveals that two districts (Sirsa and Sonipat) in Haryana and not even one district in Punjab had growth rate of 15 and above. These districts that had highest growth rate also had a good rural health infrastructure through a three tier system of sub-centres, PHCs and community health center.

Six districts of Haryana and ten districts of Punjab had experienced a growth between 11 to 15 percent. The reason behind this is the delivery of health and family welfare services to the rural communities that had continued during the eighth plan. But, lack of buildings, shortage of manpower and inadequate provision of drugs, supplies and equipments constituted major impediments to the full operationalisation of these units. Mahendragarh district had below 7 percent growth rate of primary health centres.

III. 3.7. Hospital and dispensary Beds per Lakh   Population

The highest proportion of hospital and dispensary beds gives picture of the existing of medical infrastructure. This facility is essential for the improvement of medical facilities. Fig. 3.7 shows the district wise availability of hospital beds per lakh of population in Haryana and Punjab during 1981-91. The highest number of hospital and dispensary beds per lakh population was noted in Bhiwani, Rohtak, Ambala and Faridabad with the value 190,135, 73 and 72 respectively and in 1991 the number of beds availability had decreased because the growth of population had been faster than the availability of beds. This had resulted in excess of patients that hospital beds. Kurukshetra and Sonipat had lower number of hospital and dispensary beds with the value being 21 and 27 in 1981 and 26 and 40 in 1991 respectively.

HARYANA
NUMBER OF HOSPITAL AND DISPENSARY BEDS PER LAKH POPULATION
1981-91

Y-axis: HOSPITAL AND DISPENSARY BEDS PER LAKH POP. (0, 20, 40, 60, 80, 100, 120, 140, 160, 180, 200)

X-axis (DISTRICTS): AMBALA, BHIWANI, FARIDABAD, GURGOAN, HISSAR, JIND, KARNAL, KURUKSHETRA, MAHENDRAGARH, ROHTAK, SIRSA, SONIPAT

Legend: ▨ 1980-81, ▧ 1990-91

PUNJAB
NUMBER OF HOSPITAL AND DISPERSARY BEDS PER LAKH POPULATION
1981-91

Y-axis: HOSPITALS AND DISPERSARY BEDS PER LAKH POP. (0, 20, 40, 60, 80, 100, 120, 140, 160, 180, 200)

X-axis (DISTRICTS): AMRITSAR, BATHINDA, FIRIDKOT, FIROZPUR, GURDASPUR, HOSHIARPUR, JALANDHAR, KAPURTHALA, LUDHIANA, PATIALA, RUPNAGAR, SANGRUR

Legend: ▨ 1980-81, ▧ 1990-91

FIG 3·7

The districts of Punjab had better facility in terms of availability of hospital beds than Haryana. The difference was as high as 50 beds per lakh population. There were six districts which had above 100 beds per lakh population. There are Firozpur, Hoshiarpur, Jalandhar, Kapurthala, Ludhiana, Rupnagar and Patiala.

The availability of hospital and dispensary beds to patients was very less in Amritsar, Bathinda, Faridkot and Sangrur in 1981. In 1991, Amritsar had highest number of hospital beds (186) and this district achieved highest growth rate (8.02% annually) due to establishment the medical college and new hospitals during the decade 1981-1991. All of districts except Sangrur had 150 and above beds per lakh population. It shows the medical infrastructure is growing fast to provide better medical facility to patient.

Table 3.7
Growth in Hospital and Dispensary beds per lakh population, 1981-91

Compound growth rate in percentage	Districts in Haryana	Districts in Punjab
> 2.5	Jind, Sonipat	Amritsar
0.5 – 2.5	Kurukshetra, Sirsa	Faridkot, Gurdaspur, Jalandhar, Kapurthala, Ludhiana, Rupnagar, Sangrur
- 0.5 – 0.5	Karnal, Hissar, Gurgaon	Bathinda, Firozpur, Hoshiarpur, Patiala
< -1.5	Ambala, Bhiwani, Faridabad, Mahendragarh, Rohtak	--

Source: Statistical Abstracts Punjab and Haryana, Economic and Statistical Organisation – 1981-91.

Table 3.7 shown the growth rate of number of hospital and dispensary beds per lakh population. This table shows a notable feature that had number of hospital beds per lakh population decreased in most of the districts of Haryana during 1981-1991. The main reason behind this may be the faster growth rate of population r than growth of availability of hospital beds. These districts are Karnal, Gurgaon, Ambala, Bhiwani, Faridabad, Mahendragarh and Rohtak and Bathinda, Firozpur, Hoshiarpur and Patiala, that had experienced low growth rate between − 1.5 to .5 category. Amritsar was the only district having a high growth rate (8.02% annually) due to establishment of new medical centres.

III. 3.8. Household having Safe Drinking Water and Toilet Facility

Safe drinking water supply and basic sanitation are vital human needs for health and efficiency. Diseases and health, particularly of children every year and drudgery of women are directly attributable to lack of these essentials. There is a wide gap between provision of safe drinking water and drinking water supply in any area in India. As per definition, if the source of drinking water is tap, hand pump or tube well than it has been termed as safe drinking water. It may be noted that this definition is not comprehensive.[10] The safe drinking water and toilet facility availability shows the quality of life in an area.

Fig. 3.8 reveals the percentage of household having safe drinking water and toilet facility. Both states, Haryana and Punjab had very low percentages of

HARYANA
PERCENTAGE OF HOUSEHOLD HANING SAFE DRINKING WATER AND TOILAT FACILITY
1981-91

HOUSEHOLD HAVING SAFE DRINKING WATER AND TOILE FACILITY (in%)

DISTRICTS

☑ 1980-81
▓ 1990-91

PUNJAB
PERCENTAGE OF HOUSEHOLD HAVING SAFE DRINKING WATER AND TOILET FACILITY
1981-91

HOUSEHOLD HAVING SAFE DRINKING WATER AND TOILE FACILITY (in %)

DISTRICTS

☑ 1980-81
▓ 1990-91
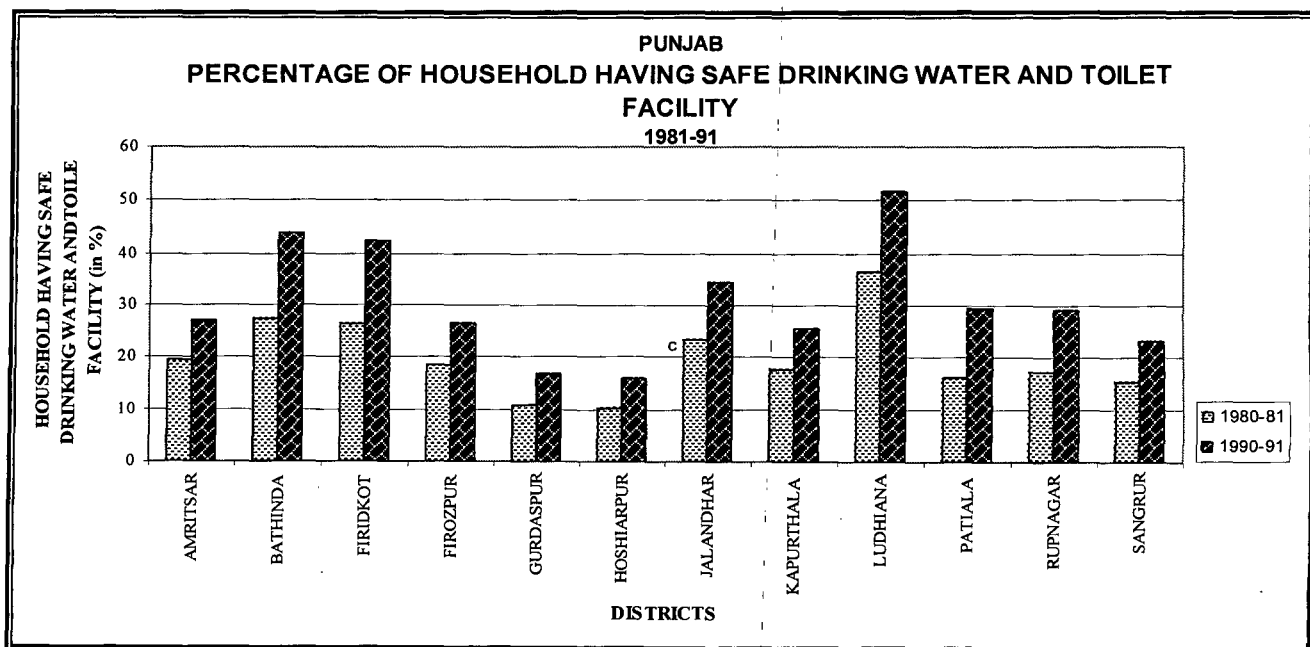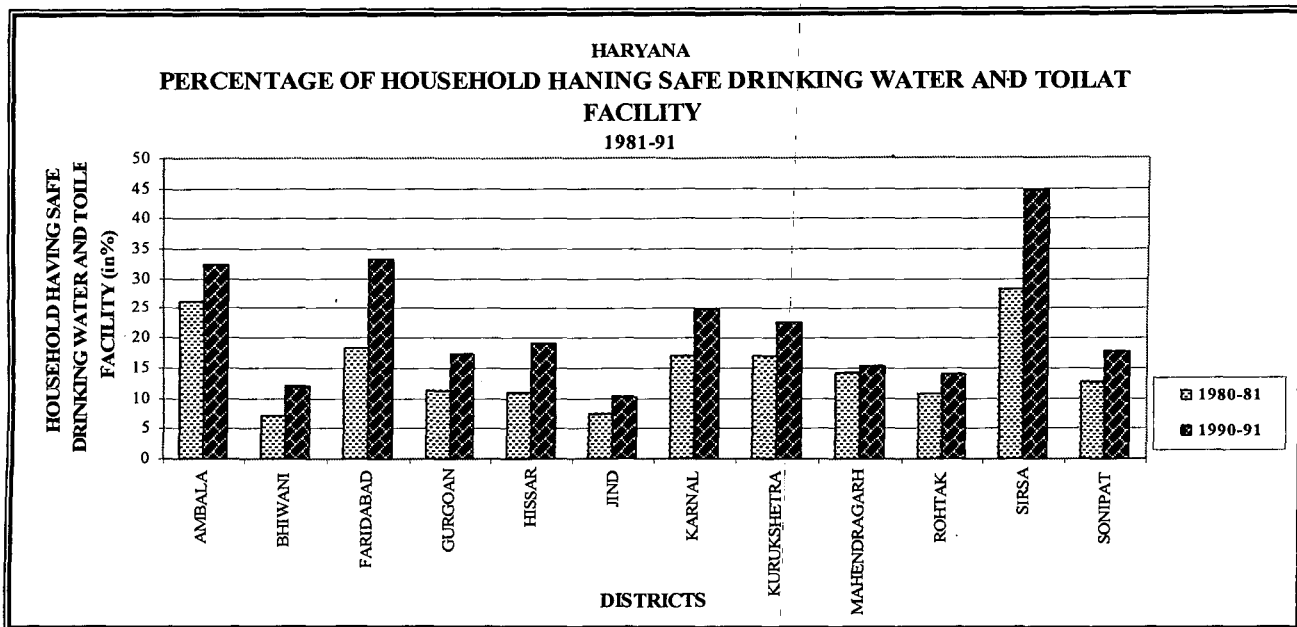
FIG 3·8

households having both safe drinking water and toilet facility. In 1991 Haryana had 21% and Punjab has 31% percent households having both the facilities. Ambala and Sirsa had the highest percentage of household having safe water and toilet facility in 1981 and the corresponding values in 1991 were 32% and 44% respectively. The position of households having safe drinking water and toilet facility was the lowest in the Jind and Bhiwani districts with the value of 7.2 percent and 7.1 percent. In 1991 these district also had lowest positions.

The main reason for the low availability of safe drinking water and toilet facility is that substantial quantities of water are consumed by several other users. It is necessary that the competing demands for water such as for irrigation, industry and domestic are etc. are balanced and fully taken into account.

In Punjab, the condition of both the facilities was poor in 1981. Only 19.89% households were having both safe drinking water and toilet facility. In 1991 an eleven percent growth rate annually was noticeable and 31 percent of the households were having both facilities. There were four districts which had highest percentage of both the facilities; these are Ludhiana (51.6%), Jalandhar (34.4%), Bathinda (43.8%) and Faridkot (42%). The lowest existed in Hoshiarpur district (15%).

Table 3.8.

Growth in Percentage of Household having safe drinking water and Toilet facilities – 1981-91.

Compound growth rate in percent)	Districts in Haryana	Districts in Punjab
> 9	Faridabad, Sirsa	Bathinda, Faridkot, Jalandhar, Ludhiana, Patiala, Rupnagar
6 – 9	Ambala, Gurgaon, Hissar, Karnal	Amritsar, Firozpur, Kapurthala, Sangrur
3-6	Bhiwani, Kurukshetra, Rohtak, Sonipat	Gurdaspur, Hoshiarpur
< 3	Jind, Mahendragarh	--

Source : Availability of infrastructural facilities in Rural India census of India –1991

Table 3.8 shows six districts of Punjab and only two districts of Haryana had experienced 9 and above growth rate annually. Mostly developed districts had increased their percentage like Faridabad, Ludhiana, Jalandhar, and Patiala. In the 3 to 6 percent category, Bhiwani, Kurukshetra, Rohtak and Sonipat districts of Haryana and Gurdaspur, Hoshiarpur districts of Punjab are listed. Jind and Mahendragarh district had experienced a low rate which was below 3 percent.

III.3. LEVEL OF INTER DISTRICT DISPARITIES IN SOCIAL INDICATORS, 1981-91

In the following section tries to portray the level of disparities in social infrastructure in the two states. Earlier it had noticed the states had experienced discouraging trend in pupil per teacher in primary school and number of hospital and dispensary bed per lakh population. While other six district have increasing trend in terms to Inter-district disparities. Hear, the result of the coefficient of variation of each district have been analyzed in the following table.

TABLE 3.9
LEVEL OF INTER-DISTRICT DISPARITIES IN SOCIAL INDICATORS
1981-91
(CO-EFFICIENT OF VARIATION VALUES)

State	Haryana		Punjab	
Indicators /Years	1981	1991	1981	1991
B_1	33.36	39.19	81.44	32.25
B_2	8.01	4.53	21.44	13.17
B_3	25.90	26.15	15.94	24.60
B_4	5.24	12.65	7.46	16.45
B_5	46.05	31.15	21.64	32.45
B_6	17.07	29.15	18.45	18.39
B_7	75.59	55.34	28.82	26.20
B_8	44.49	50.83	37.87	32.62

Note:

B_1 - *Number of Primary Schools per lakh Population*
B_2 - *Number of Pupil per Teacher in Primary Schools*
B_3 - *Number of Middle/Higher Schools per lakh Population*
B_4 - *Number of Pupil per Teacher in Middle/Higher Schools*
B_5 - *Percentage of Inhibited villages having medical facility*
B_6 - *Primary Health Centres per lakh Population*
B_7 - *Hospital and dispensary Beds per Lakh Population*
B_8 - *Household having Safe Drinking Water and Toilet Facility*

The value of co-efficient of variation for Haryana in primary schools per lakh population had increased from 33.36 in 1981 and 39.19 in 1991. But for Punjab's districts it had decreased from 81.44 to 32.25 in 1981-91, that is almost less than half. In 1991, Punjab had less variability compared to Haryana in the availability of schools.

70

The disparities in pupil teacher ratio in primary schools had decreased in both states during the 1981-91. Haryana had low difference among the districts in terms of value of pupil teacher ratio. Punjab had experienced a difference 21.44 in 1981 and 13.17 in 1991 among the districts which showed that co-efficient of pupil per teacher had reduced 13.17 percent among the districts.

The indicator number of middle/higher schools per lakh population had shown that in the Haryana almost same disparity had prevailed in 1981 and 1991 with value of 25.9 and 26.15 respectively. But in Punjab the value of co-efficient. had gone up from 15.4 to 24.6 in during period of 1981 to 1991. It shows the number of middle/higher schools has decreased in 1991.

The co-efficient of inhibited villages having medical facilities revealed that disparities in case of Haryana had decreased by 9 and Punjab had increased from value of 32.45 in 1991 to 21.64 in 1981. This shows that some districts had very high percentage of villages having medical facilities.

The primary health centres for lakh population showed the low level of disparities among the districts of Haryana and Punjab. Both states show the increasing trend. The value has increased 17.07 to 29.15 for Haryana and 18.45 to 18.39 for Punjab.

Number of hospital and dispensary beds per lakh population plays an important role in providing to good medical or health infrastructure. Haryana showed a high degree of variability in this regard. The disparity value of Haryana was 75.59

/

in 1981 and 55.34 in 1991. But Punjab had a low degree of variability in the calculated co-efficient; the corresponding value was 22.83 in 1981 and 26.30 in 1991 for the number of hospital and dispensary beds per lakh population.

The percentage of household having safe drinking water and toilet facility is very helpful for determining the quality of life. In this study, this indicator showed the decreasing trend for Punjab and increasing trend for Haryana with the value changing from 37.87 to 32.62 and from 44.49 to 50.83 respectively during 1981-1991.

III.4. COMPOSITE INDEX OF THE SOCIAL DEVELOPMENT,1981-91

The analysis mentioned above indicates the performance of the districts in terms of each indicator separately. In order to get a broad view of the spatial pattern of social development and an attempt has been made to composite the relevant indicators to articulate the phenomena of social development. All the eight indicators have been chosen for deriving a composite index- the value of composite index has been obtained by principal component analysis method.

In Haryana, social development according to selected indicators showed interesting results in 1981 and 1991. It revealed that Rohtak and Faridabad had first and second ranks and also they had maintained their respective rank in 1991. Kurukshetra and Gurgaon had occupied the 3rd and 4th rank in 1991. The district of Gurgaon had improved its rank by three places in 1991 Gurgaon had the seventh position in 1981. The process of development was started by 1981 in Gurgaon district. The last two positions were captured by Sirsa (11th) and Mahendragarh (12th). This revealed that these two districts had been deprived in social infrastructural facilities.

Hissar lowered its rank to the 9th position in 1991 and Jind had improved its rank from 10th in 1981 to 8th in 1991.

TABLE 3.10

LEVEL OF DEVELOPMENT OF SOCIAL INDICATORS

DISTRICT	1981			1991	
	FCA-1	R-FCA-1		FCA-1	R-FCA-1
AMBALA	0.29143	6		0.31764	5
BHIWANI	-0.97377	9		-0.61363	10
FARIDABAD	1.01847	2		1.06851	2
GURGOAN	-0.00189	7		0.70788	4
HISSAR	-0.2912	8		-0.505	9
JIND	-1.01502	10		-0.49361	8
KARNAL	0.90868	3		0.17027	6
KURUKSHETRA	0.89135	4		0.95904	3
MAHENDRAGARH	-1.59209	12		-1.35501	11
ROHTAK	1.19091	1		1.74053	1
SIRSA	-1.2503	11		-1.53384	12
SONIPAT	0.82342	5		-0.46277	7

DISTRICT	1981			1991	
	FCA-1	R-FCA-1		FCA-1	R-FCA-1
AMRITSAR	0.23429	5		0.43587	5
BATHINDA	-0.79188	10		-0.15169	8
FIRIDKOT	-0.80587	11		-0.97845	10
FIROZPUR	-0.53671	9		-1.52754	12
GURDASPUR	1.06506	2		0.50553	4
HOSHIARPUR	0.60651	3		0.58826	3
JALANDHAR	1.96893	1		1.7167	1
KAPURTHALA	-0.15077	7		0.22052	6
LUDHIANA	0.49738	4		1.25785	2
PATIALA	0.20206	6		0.05554	7
RUPNAGAR	-0.41272	8		-0.8866	9
SANGRUR	-1.87626	12		-1.23599	11

B1-NUMBER OF PRIMARY SCHOOLS PER LAKH POPULATION
B2-NUMBER OF PUPIL PER TEACHERS IN PRIMARY SCHOOLS
B3-NUMBER OF MIDDLE / HIGHER SCHOOLS PER LAKH POPULATION
B4-NUMBER OF PUPIL PER TEACHERS IN MIDDLE / HIGHER SCHOOLS
B5-PERCENTAGE OF INHABITED VILLAGES HAVING MEDICAL FACILITY
B6-NUMBER OF PRIMARY HEALTH CENTRES PER LAKH POPULATION
B7-NUMBER OF HOSPITAL AND DISPENSARY BEDS PER LAKH POPULATION
B8-PERCENTAGE OF HOUSEHOLD HAVING SAFE DRINKING WATER AND TOILAT F

Map 4

HARYANA
LEVEL OF SOCIAL DEVELOPMENT
1981
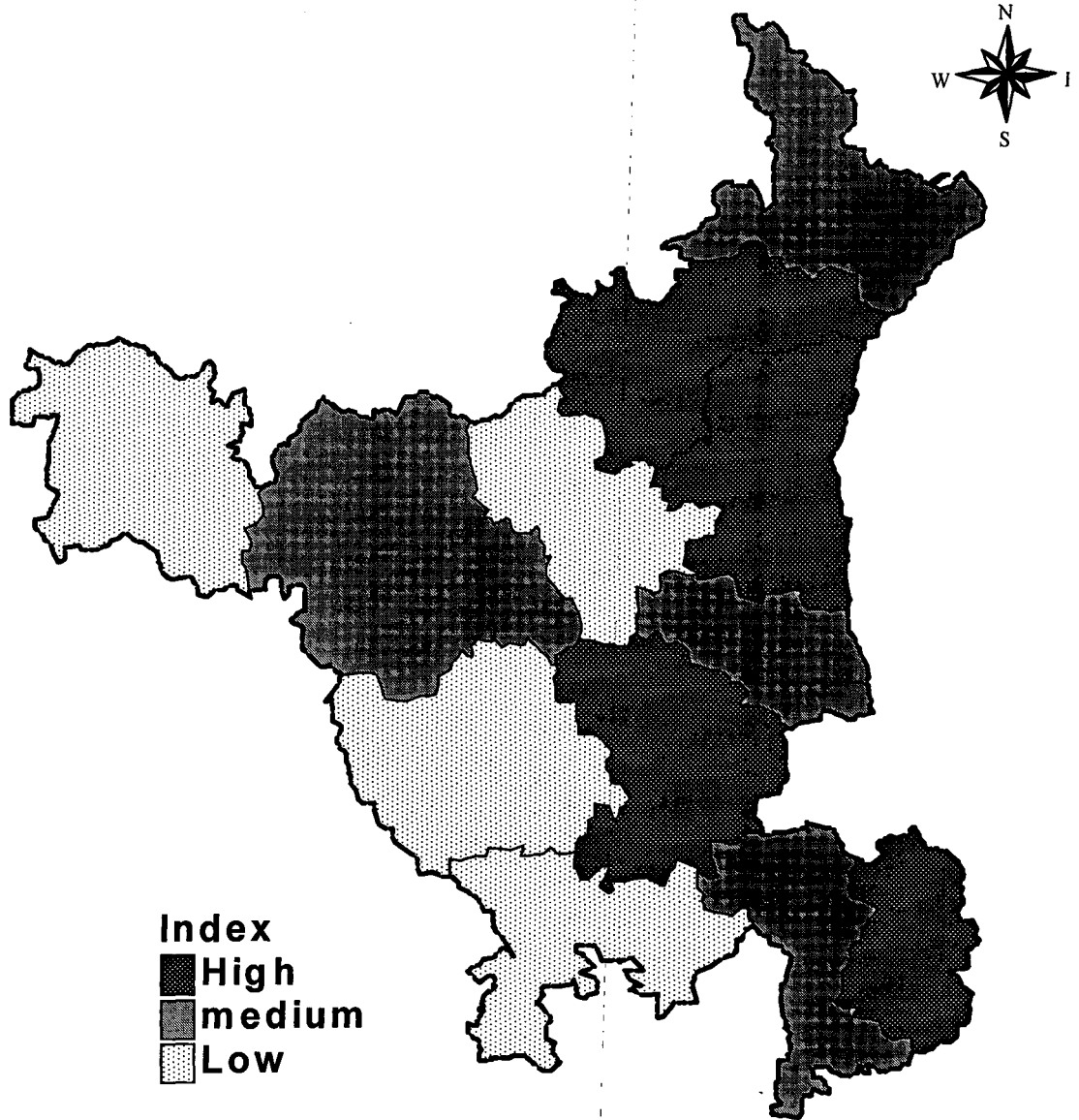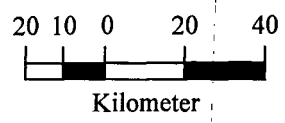
Index
High
medium
Low

20 10 0   20   40

Kilometer

Map 5

HARYANA
LEVEL OF SOCIAL DEVELOPMENT
1991

N
W E
S

Index
High
medium
Low

20 10 0 20 40

Kilometer

Map 12

PUNJAB
LEVEL OF SOCIAL DEVELOPMENT
1981

N
W E
S

Index
High
medium
Low

20 10 0 20 40

Kilometer

Map - 13

PUNJAB
LEVEL OF SOCIAL DEVELOPMENT
1991

N

W   E

S

Index

■ High

▓ medium

▒ Low
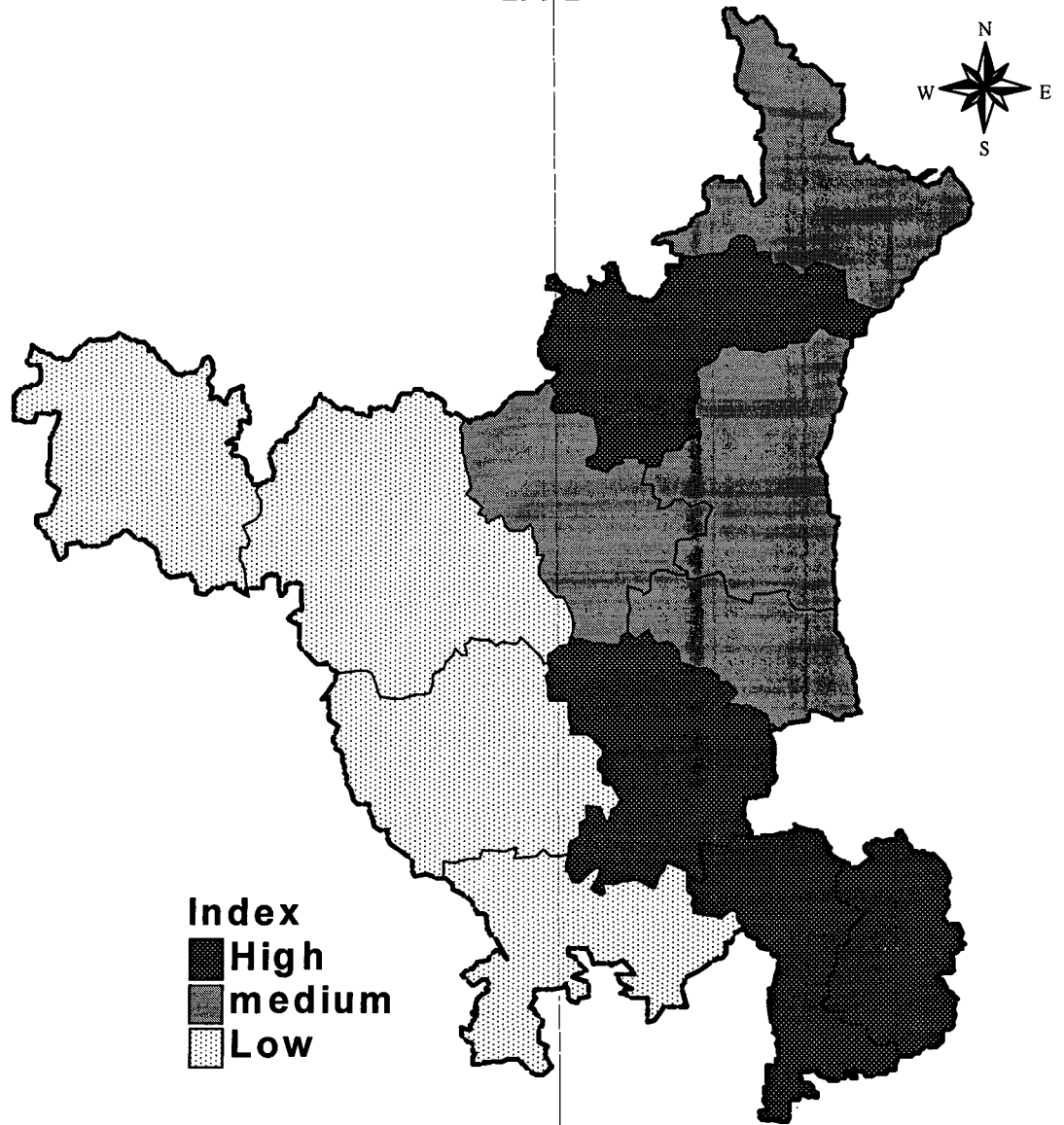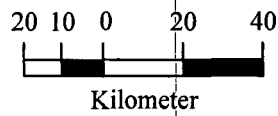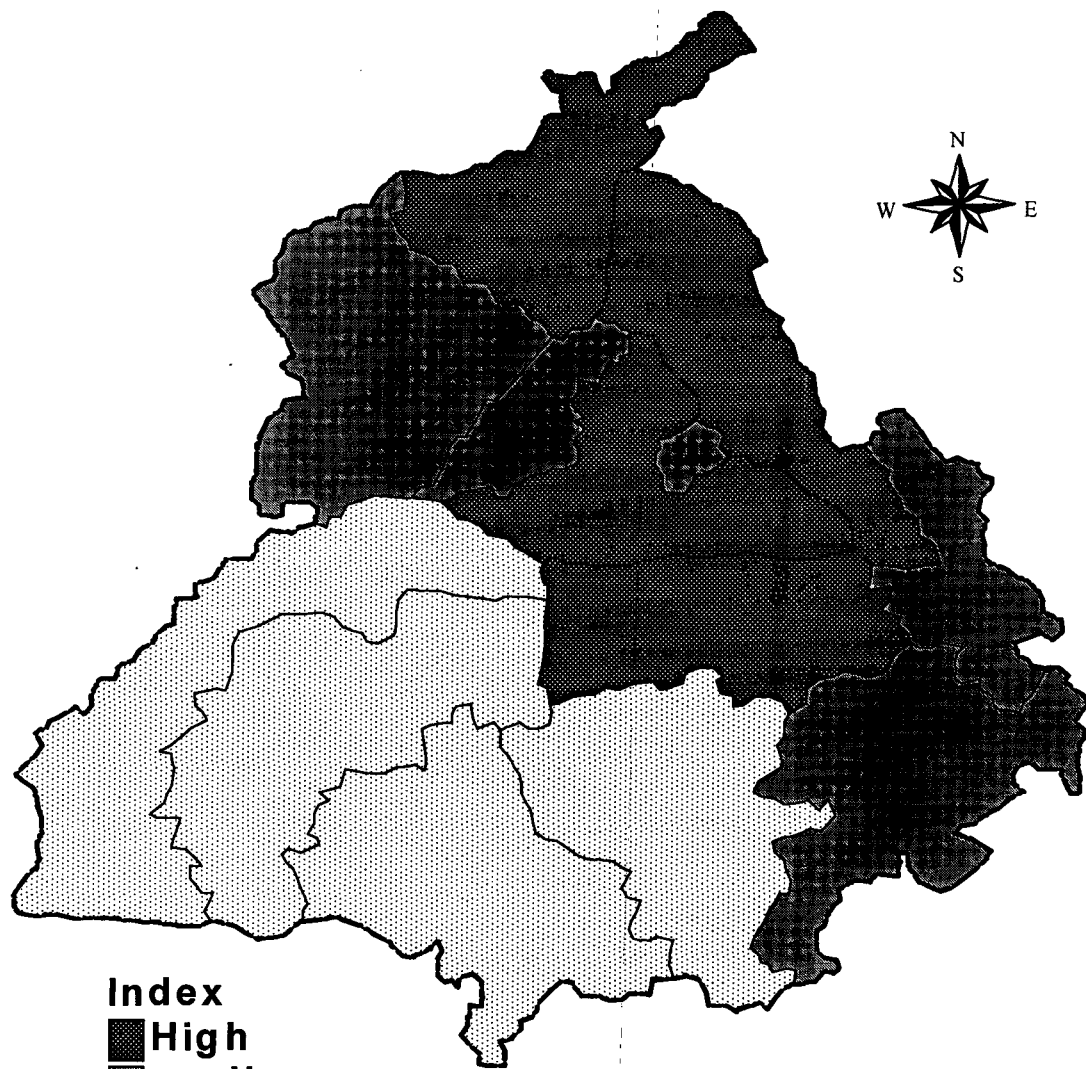
20 10   0   20   40

Kilometer

Punjab's picture showed the social development index was highest in Jalandhar district in 1981 and also in 1991. Jalandhar is a socially developed in terms of social indicators like primary school, pupil-teacher ratio, medical facility, primary health centre and safe drinking water and toilet facility. It is followed by Gurdaspur (2nd rank), Hoshiarpur (3rd rank) in 1981 that were listed in the highly developed category. Interesting point is that Amritsar is ranked 5th in 1981 and also in 1991. Medical facilities and health infrastructure is good in this district. But in terms of education mainly primary education, its situation is not better than other districts – because mostly people admitted their children in public schools. Firozpur had the 9th rank in 1981 but occupied the last rank (12$^{th)}$ in 1991. Sangrur had the lowest rank during the period 1980-91. So, it is socially backward in comparison to the other districts of Punjab.

III.5. SUMMARY OF FINDINGS

Social development is a very important part of the overall development in any region. In this chapter, eight social indicators have been chosen. Through the indicators an attempt has been made to compute composite indices and locate the districts that are socially developed.

On the basis of above analysis, following conclusions can be drawn.

➢ The share of number of primary schools and middle higher schools per lakh population in social development is very important. According to available data Gurgaon and Mahendragarh had highest number of schools in Haryana; Hoshiarpur and Gurdaspur had highest figure in Punjab.

➢ In terms of pupil-teacher ratio, Punjab and Haryana had comparatively the same level. Highly urbanized districts had lower pupil teacher ratios like Ludhiana, Amritsar, Faridabad and Gurgaon.

74

> Availability of medical facilities indicates improvement in health infrastructure in life. A comparison by districts reflects that Jind and Hissar had good medical facilities. But Faridabad and Gurgaon had a low level of medical facilities because the districts headquarters had provided better health facilities. Punjab has same situation during 1981-1991.

> Surprisingly Punjab and Haryana that had lower percentage of households having safe drinking water and toilet facilities. On an average only 20.9% household having both facilities Haryana and 31.4% in Punjab at the year of 1991.

> The composite index reveals the overall picture of social development of both states. According to composite index, Rohtak, Faridabad and Karnal in Haryana; Jalandhar, Ludhiana and Hoshiarpur were highly developed and Sirsa, Mahendragarh, Firozpur and Sangrur were the backward districts in terms of social infrastructure.

END NOTES

[1] Smith, D.M. (1973); "The Geography of Social well being in the United States: An Introduction to Territorial Social Indicator." P. 54.

[2] Olson M. (1969): Social Indicators and Social accounts in socio-economic planning, p. 235-346.

[3] Wannmeli, S. (1967): Regional Planning for Social Faction. NICD, Hyderabad 1967.

[4] Chand M. Puri U.K. (1983): Regional Planning in India Allied Publication, New Delhi, p. 508.

[5] Wilson K. (1989): Education and Development in India, Bharatiya Samajik Chintan (A Quarterly Social Journal) vol. XII. Dec. 1989, p. 18-28.

[6] Haryana State District Profile 1991, Census of India - 1991

[7] Eighth Five Year Plan, 1992-97, Vol. 1 & 2, Government of India, Planning Commission, New Delhi, p. 322

[8] Eighth Five Year Plan, 1992-97, Vol. 1 & 2, Government of India, Planning Commission, New Delhi.

[9] Census Atlas of Haryana 1981, Census of India, New Delhi – 1981.

[10] State Profile of India, 1991, Census of India, New Delhi – 1991.

CHAPTER – IV

DEMOGRAPHIC DEVELOPMENT

IV. 1. INTRODUCTION

The promotion of a healthier and longer life and the assurance of people's right and ability to have the number of children they desire have been important elements in economic and social development. But when the demographic acts of individuals impinge upon the welfare of their followers, and the aggregated private preference and the public good in demographic matters diverge greatly, achievement of better accord between socio-economic development and population change become an explicit goal of public policy.

Any discussion of interrelationship of population and development requires a clarity about the concept of development itself. Welfare economists have generally regarded it as a process of raising the total domestic product of a country, or more appropriately, its per capita income. From the sociological view-point, human communities, while they grow in volume and density, experience progress in the form of development of the division of labour, the extension of personal contacts and the coordination of individual activities, the stimulation of initiative and technical innovations and the creation of other conditions which together make up social progress and the development of civilization.[1]

Most of the people who argue that population growth is a major obstacle to development assume that rapidly growing population would necessarily arrest development by lowering the man land capital and labour relation. In an other wise retrogressive economy, because such a thing invariably happens, a causal relationship is

assumed to be existing between population growth and under development and thus other factors are ignored.

While considering the relationship of population to development, the following aspects become important: literacy rate, female literacy, sex ratio, urbanization life expectancy, population growth rate and work force.

This chapter includes a detailed discussion on the level of demographic indicators and their development at two points of time, i.e. 1981 and 1991. The very purpose of these demographic aspects is to construct composite index for all districts of Haryana and Punjab to get an idea of the level of development prevailing in each district. The selected indicators for demographic development are:

1)   Percentage of literates to total population (excluding age group 0-6)

2)   Percentage of female literates to total population (excluding age group 0-6)

3)   Sex ratio (number of females per 1000 males)

4)   Urban population as percentage to total population

5)   Percentage of workers to total population

6)   Life expectancy at birth.

IV.2.1. Percentage of Literate To Total Population

Literate person is defined by the Indian census as a person who is able to read and write in any language with understanding. If a person is educated he or she is able to get the education and education is one of the instruments that speed up the modernization and the process of development and it helps a person to enhance its capabilities to the fullest extent. Literacy is one of the important indictor that determines the level of human development. To analyze the level of literary in the

HARYANA
PERCENTAGE OF LITERATES TO TOTAL POPULATION
1981-91

Bar chart: % OF LITRATES (y-axis, 0–60) vs DISTRICTS (x-axis). Legend: □ 1980-81, ■ 1990-91. Districts: AMBALA, BHIWANI, FARIDABAD, GURGOAN, HISSAR, JIND, KARNAL, KURUKSHETRA, MAHENDRAGARH, ROHTAK, SIRSA, SONIPAT.

PUNJAB
PERCENTAGE OF LITRATES TO TOTAL POPULATION
1981-91

Bar chart: % OF LITRATES (y-axis, 0–80) vs DISTRICTS (x-axis). Legend: □ 1980-81, ■ 1990-91. Districts: AMRITSAR, BATHINDA, FIRIDKOT, FIROZPUR, GURDASPUR, HOSIARPUR, JALANDHAR, KAPURTHALA, LUDHIANA, PATIALA, RUPNAGAR, SANGRUR.

FIG 4·1

present study we take the percentage of literate to the total population excluding the age group of (0-6) years.

On analysing Fig. 4.1 it is discernable that in Haryana the overall literacy is 36.41%. The districts that show highest percentages in 1981 are Ambala followed by Rohtak 44.62 and 42.55 % respectively. The reason for the higher percentage of literacy in these districts is better infrastructure, good child/teacher ratio and high per capita income, These factors lead to better literacy percentage because high per capita income provide the parent good amount of finance for the education of the child. In 1991 also Ambala and Rohtak maintained their lead with percentages growing from 41 and 42% to 52.75 and 51.62 respectively. The reasons for the higher literacy are the same as 1981, which are higher number of schools, good child enrolment rate, low dropouts.

On analysing the lowest literate population, it is seen that it is very low in Jind and Sirsa with percentages of 26.81% and 26.87% respectively. The major factors associated are related poor infrastructure, high drop out (because of high dependence on agriculture), low enrolment rates and very low level of awareness among the people. These areas are dominated by agricultural societies and low level of economic development. These two districts remained at lowest level due to above mentioned reasons in 1981 but the figures increased to 31.87 and 36.36 percent for Jind and Sirsa respectively. The growth is due to slight improvement of infrastructure, higher enrollment ratio and awareness programmes initiated by Literacy Mission.

In case of Punjab literacy level is high both in 1981 and 1991 which are 40.86% and 58.51% respectively. In Punjab the highest percentage in 1981 and 1991 are exhibited by Hoshiarpur followed by Ludhiana with values of 56.33% (1981) 70.74% (1991) respectively. The reason is good infrastructure due to economic development and high enrolment of students.

The lowest percentage is found in the districts of Bathinda and Sangrur with percentage of 27.52 percent (1981) & 43.03 percent (1991) and 29.6 percent (1981) & 46.61 percent (1991) respectively and the reason for low literacy is the low agricultural development, low infrastructure support and low per capita income. Very less school leading to less enrolment ratio and due to intervention of Literacy Mission literacy is on the rise but it will takes time to go above state average.

TABLE 4.1
DECADAL CHANGE IN PERCENTAGE OF LITERATES TO TOTAL POPULATION, 1981 – 1991

Haryana		Punjab	
Decadal change in %	Districts	Decadal change in %	Districts
>9	Mahendragarh, Rohtak Hissar	> 4.5	Sangrur
7-9	Ambala, Bhiwani, Faridabad, Gurgaon, Karnal, Sonipat	3.5-4.5	Amritsar, Bathinda, Faridkot, Firozpur Gurdaspur, Kapurthala, Patiala, Rupnagar
5-7	Jind, Hissar	2.5-3.5	Jalandhar, Ludhiana
< 5	Kurukshetra	<2.5	Hoshiarpur

Source: Haryana and Punjab state district profile 1991 census of   India – 1991

The table 4.1 indicates that the decadal change of literacy rate in Haryana and Punjab during 1981-91. Haryana has three districts where growth rate of literacy is above 9 percent. These districts are Rohtak, Hissar and Mahendragarh. According to education statistics, many colleges and schools have been established by government in these districts. Six districts lie in the category of 7 to 9 percent growth rate. Kurukshetra has below 5 percent growth rate.

Punjab's growth in literacy is low to Haryana. There are no districts which have growth rate of 5 percent and above. Only Sangrur district has 4.54 percent growth rate. Amritsar (3.53%, Bathinda (4.5%), Faridkot (3.9%), Firozpur (4.05%), Gurdaspur (3.58%), Kapurthala (3.51%) , Patiala (3.78%) and Rupnagar (3.55%) are in the category of 3.5 to 4.5 percent growth rate literacy. Hoshiarpur has below 2.5% growth rate.

IV. 2.2. Percentage of Female literate to total population

Females are the one of wheel over which the vehicle of life works. If there is deficiency in that the life will not more smoothly. Female literacy is the most important indicator for development. The process of development gets the major thrust in those areas where the female literacy is higher. The states or districts having higher human development index are where the level of female literacy are higher.

On analysing female literacy in Haryana and Punjab, It is seen that there is a large variation among them. In Haryana high female literacy is portrayed by Ambala followed by Rohtak with 34.97% and 26.82% in 1981 and in 1991. Ambala also has maintained its lead but the second position was taken by Kurukshetra. The reason behind this is higher number of s education institute for girls, high enrolment ratio, low dropout and awareness among people for education of girls. Economic development also leads to the growth of female literacy.

The districts showing low female literacy are Jind and Hissar both in 1981 with 12.24 percent and 16.71 percent respectively, and also in 1991 with only 30.12 percent and 32.12 percent. The reasons are low infrastructure, low enrolment ratio, high dropout ratio and very little awareness among the people for education of the girl child. Due to

HARYANA
FEMALE LITRATES TO TOTAL POPULATION
1981-91

% OF FEMALE LITRATES

Legend:
- ☐ 1980-81
- ☐ 1990-91

Districts: AMBALA, BHIWANI, FARIDABAD, GURGOAN, HISSAR, JIND, KARNAL, KURUKSHETRA, MAHENDRAGARH, ROHTAK, SIRSA, SONIPAT

DISTRICTS

PUNJAB
FEMALE LITRATES TO TOTAL POPULATION
1981-91

% OF FEMALE LITRATES

Legend:
- ☐ 1980-81
- ☐ 1990-91

Districts: AMRITSAR, BATHINDA, FIRIDKOT, FIROZPUR, GURDASPUR, HOSIARPUR, JALANDHAR, KAPURTHALA, LUDHIANA, PATIALA, RUPNAGAR, SANGRUR

DISTRICTS

FIG 4.2

low female literacy here the level of economic development and human development are also low.

On analysing the female literacy figures of Punjab it can be seen we see that it 33.69 percent of 1981 rose dramatically to 65.66 percent in 1991 (This is about double). The districts showing higher female literacy are Ludhiana (44.15%) and followed up by Jalandhar (42.46%)in 1981 and in 1991,the highest female literacy is found in Jalandhar (61.33%) followed up by Ludhiana (31.23%). The main reason for high female literacy is good infrastructure for education, awareness of people for education, high enrolment rate and low dropout. Due to awareness, economic development and educational infrastructure is also developed and this leads higher literacy among females.

The districts showing low literacy are Bathinda and Sangrur with only 20.29 percent and 22.68 percent of female literacy. The figure improved to for this low level of female literacy is very less economic development leading to very less availability of educational institutions, less awareness for female child education due to agricultural economy very less enrollment and high dropout cases.

TABLE 4.2.
DECADAL CHANGE IN PERCENTAGE IN FEMALE LITERATES TO TOTAL POPULATION, 1981-91

Decadal change in %	Districts in Haryana	Districts in Punjab
> 21	Ambala, Kurukshetra, Sonipat	–
18-21	Bhiwani, Faridabad, Karnal, Rohtak	Hoshiarpur, Jalandhar, Rupnagar
15-18	Hissar, Hind, Mahendragarh, Sirsa	Kapurthala, Ludhiana, Patiala, Sangrur, Amritsar
< 15	Gurgaon	Bathinda, Faridkot, Firozpur, Gurdaspur

Source: Haryana and Punjab State District Profile – 1991 Census of India –1991.

81

The overall picture of female literacy in Haryana is not better than Punjab. Punjab has 65.6 percent` of female literacy but Haryana has only 40.05 percent. But the growth rate female literacy in Haryana is more than Punjab. Maximum growth rate is above 21 percent which is lies in Ambala, Kurukshetra and Sonipat but no district of Punjab has been achieved by in this category. There is only one district (Gurgaon) whose growth rate is below 15 percent but Punjab has four districts below 15 percent growth rate of female literacy

IV. 2.3: Sex Ratio (Number Of Females Per 1000 Males)

Sex ratio is the ratio between males and females and is calculated as number of females per 1000 males. Franklin observes sex ratio as an index of economy prevailing in an area and was his tool for regional analysis.[2] The knowledge of sex ratio is essential for understanding the employment and consumption pattern, and social needs etc. of a community.

On analysing the sex ratio in Punjab and Haryana, it is noticed that both states are below the national average in 1981 as well as 1991. From Fig. 2.3, it is noticed that the highest sex ratio in Haryana in 1981 are in Mahendragarh which is 932 followed by Bhiwani 899. But in 1991 the sex ratio is highest in Mahendragarh followed by Bhiwani.

Sex ratio is lowest in Faridabad which is 811 in 1981 the reason for low sex ratio is due to large agglomeration of industry which requires large labour population which is provided by large migrant male population who leave the wives (females) behind. Another probable reason may be advanced medical technologies which give the people to have the preferential babies.

A perusal of Punjab's sex ratio reveals a similar pattern. The districts showing higher sex ratio are Gurdaspur and Hoshiarpur. They have the sex ratios of 918 and 915

HARYANA
SEX RATIO (1981-91)

PUNJAB
SEX RATIO (1981-91)
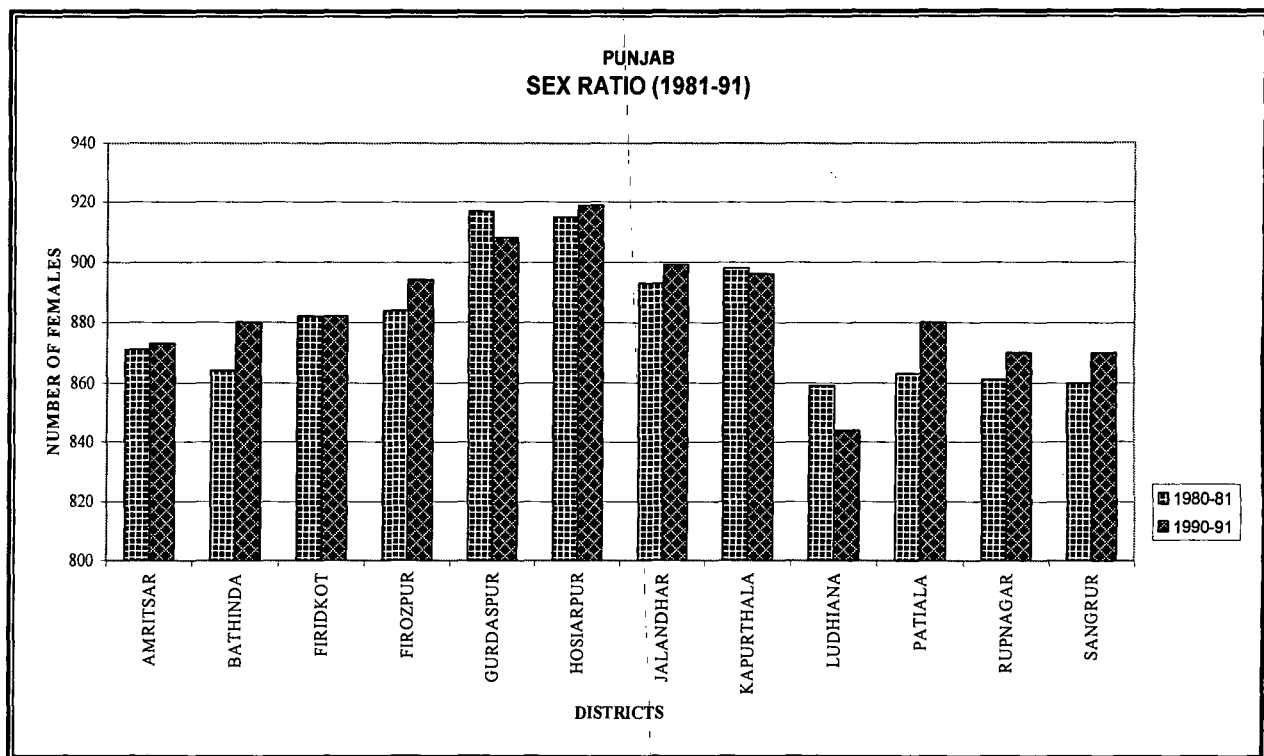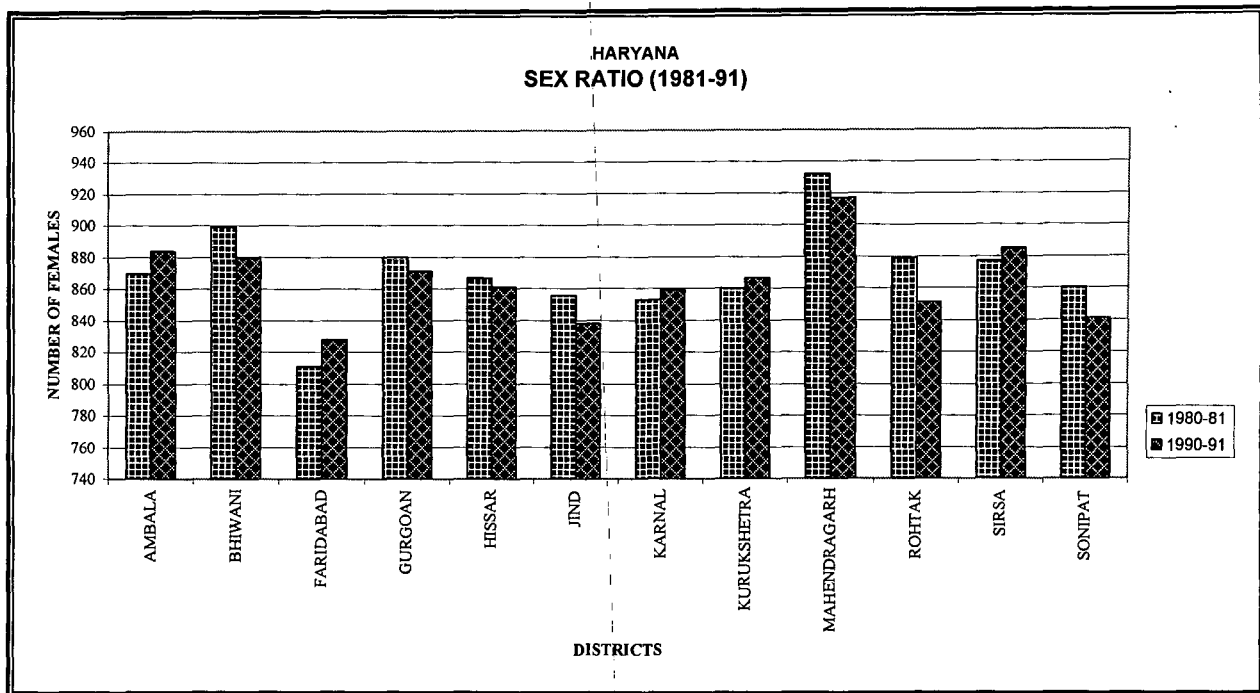
FIG 4·3

in 1981 and 1991 respectively. The reasons are low industrial growth and less medical facilities for preferential babies. They constitute part of agricultural area where natural processes dominate. In 1991 the picture is more or less the same but Hoshiarpur had a gain in female with a sex ratio of 919 and Gurdaspur lost 9 females and slipped to 908.

The lowest sex ratio is portrayed by Sangrur followed by Rupnagar with sex ratio 860 and 861 respectively. The probable reason may be that due to congestion in Chandigarh, industries are moving to these districts and they also have in migration of workers leading to low sex ratio.

TABLE – 4.3
DECADAL CHANGE IN SEX RATIO (NUMBER OF FEMALES PER 1000 MALES) 1981-91

Decadal change in Number	Districts in Haryana	Districts in Punjab
> 15	Faridabad	Bathinda, Patiala
0 – 15	Ambala, Jind, Karnal, Sirsa	Amritsar, Faridkot, Firozpur, Hoshiarpur, Rupnagar, Sangrur, Jalandhar
-15 – 0	Gurgaon, Hissar, Mahendragarh	Gurdaspur, Kapurthala, Ludhiana
> -15	Bhiwani, Jind, Rohtak, Sonipat	---

Source: Haryana and Punjab State Districts Profile – 1991, Census of India – 1991.

In respect of the decadal change in the sex ratio during 1981-91, the progress is not quite good in Haryana and Punjab. Both state have sex ratio below the national average (927females). This condition speaks against females, and in these state, there has been an earlier history of son preference also. But now advanced medical technologies are often misutilised detecting child sex. This often result in sex specific foetus termination. The agricultural dominant districts have negative decadal change. These districts are Bhiwani, Rohtak, Jind and Sonipat in Haryana; Gurdaspur and Kapurthala in

Punjab. There are four districts in Haryana and six districts in Punjab which have improved their sex ratio during 1981-91 decade.

IV. 2.4. Urban Population as Percentage to Total Population

Urbanization is the process by which the rural area transforms into urban areas. The term urbanization implies the movement of people to urban areas. Thompson defines urbanisationas "urbanization is characterized by movement of people from small communities concerned chiefly or solely with agriculture to other communities concerned chiefly or solely with agriculture to other communities generally larger, whose activities are primary centered in government, trade, manufacture, or allied interests."[3]

As we see from the Fig. 2.4. the urban percentage is only 21.88 in 1981 that rose to 24.63 in 1991 in Haryana. But Punjab has better position with 27.68 percent and 29.55 percent of urban population in 1981 and 1991 respectively. In Haryana the highest percentage is shown by Faridabad whose 41.44 percent population is urban. The reasons behind this are higher concentration of manufacturing industries, higher percentage of tertiary activities and due to expansion of industries being near to Delhi and consequently inviting large migration from the eastern U.P. and Bihar. In 1991 this percentage grew up to 48.57 percent due to the large scale industrialization and diversification of industries.

The lowest proportion of urban population is in Mahendragarh and Jind districts is 1981 and 1991, the reason being these two districts are agricultural dominated with very less concentration of industries.. Their location away from Delhi is major factor for their backwardness.

In Punjab the highest percentage is shown by Ludhiana both in 1981 and 1991. The dominance of hosiery industry and other manufacturing industries led to the

HARYANA
URBAN POPULATION AS PERCENTAGE TO TOTAL POPULATION
1981-91

Chart: URBAN POPULATION (in %) vs DISTRICTS

Legend: 1980-81, 1990-91

Districts: AMBALA, BHIWANI, FARIDABAD, GURGOAN, HISSAR, JIND, KARNAL, KURUKSHETRA, MAHENDRAGARH, ROHTAK, SIRSA, SONIPAT

PUNJAB
URBAN POPULATION AS PERCENTAGE TO TOTAL POPULATION
1981-91

Chart: URBAN POPULATION (in %) vs DISTRICTS

Legend: 1980-81, 1990-91

Districts: AMRITSAR, BATHINDA, FIRIDKOT, FIROZPUR, GURDASPUR, HOSIARPUR, JALANDHAR, KAPURTHALA, LUDHIANA, PATIALA, RUPNAGAR, SANGRUR

FIG 4·4

migration from all over the Punjab. This industrialization is the major factor for the development of higher urban population. Another major factor is the central location and fast growth in transportation. Also the infrastructure facilities and the rapid tertiary sector growth have provided the impetus for the high urban population in this area.

The district showing less urban population to total population is Hoshiarpur both in 1981 and also in 1991. The reasons are its high dependence on the agriculture and very less development of industry, transport and infrastructure. Due to low profile in terms of raw materials and other infrastructural facilities and industrial growth has not progressed much. This has led to low urban population in Hoshiarpur.

TABLE – 4.4

DECADAL CHANGE IN SEX URBAN POPULATION AS PERCENTAGE TOTOTALPOPULATION, 1981-91

Decadal change in Percentage	Districts in Haryana	Decadal change in Percentage	Districts in Punjab
> 8	Karnal, Rohtak	> 3	Ludhiana, Rupnagar
5-8	Bhiwani, Faridabad, Kurukshetra	1.5-3	Faridkot, Sangrur
2-5	Ambala, Gurgaon, Hissar, Jind, Sirsa, Sonipat	0-1.5	Amritsar, Bathinda, Firozpur, Gurdaspur, Hoshiarpur, Jalandhar, Patiala
< 2	Mahendragarh	< 0	Kapurthala

Source: Haryana and Punjab State Districts Profile – 1991 Census of India – 1991.

Table 4.4 provides an overview of the decadal change of urbanization. Punjab and Haryana have almost same percentage of urbanization in 1991 that is 25% and 29% respectively. But growth rate of urbanization in Haryana is more than Punjab. It is important to note that the Karnal, Bhiwani, Kurukshetra, Rohtak, Rupnagar, Faridkot, Sangrur districts having higher growth rate. The least urbanized districts of selected

states; Ambala, Gurgaon, Hissar, Sonipat, Mahendragarh in Haryana and Amritsar, Gurdaspur, Patiala, Jalandhar and Kapurthala districts have registered very low growth rate i.e. below 5 percent. While there is only one district i.e. Kapurthala that has registered a negative growth of 4.21 percent in urbanization during the decade.

IV. 2.5. Working Population to Total Population

According to the census of India, any person whose main activity was participation in any economically productive work either by his physical or by his mental activity was classified as worker. Thus, work involved not only actual work but also effective supervision and direction. If a person worked on any one of the day during the reference period of one week prior to the date of enumeration was considered as a worker provided his/her main activity was economically productive work.

The percentage of workers to total population of Haryana and Punjab is more or less than same. It is 48.56 percent and 46.54 percent respectively in 1981. It rises to 49.47 percent and 48.46 percent in 1991. The percentage of workers is above the national average both in 1981 and 1991.

In Haryana the highest percentage is found in Hissar, Faridabad i.e. 50.53 percent and 50.94 percent respectively closely followed by Sirsa and Jind with 50.39 percent and 50.17 percent. Large scale industrialization, large agglomeration of manufacturing industries and proximity to Delhi industrial area are the reasons behind this. Due to industrial diversification this reason attracts the migrants from all over the India but largely from eastern U.P. and Bihar. Another important reason for high percentage of workers is due to product specialization. In 1991 the percentage of workers has increased but the positions remain same. The districts showing lowest proportion of workers is Mahendragarh, which is only 41.76 percent and 43.81 percent (1981) and (1991). The reason for lowest percentage of workers is due to the dominance of the agriculture and

HARYANA
PERCENTAGE OF WORKERS TO TOTAL POPULATION
1981-91

PUNJAB
PERCENTAGE OF WORKER TO TOTAL POPULATION
1981-91
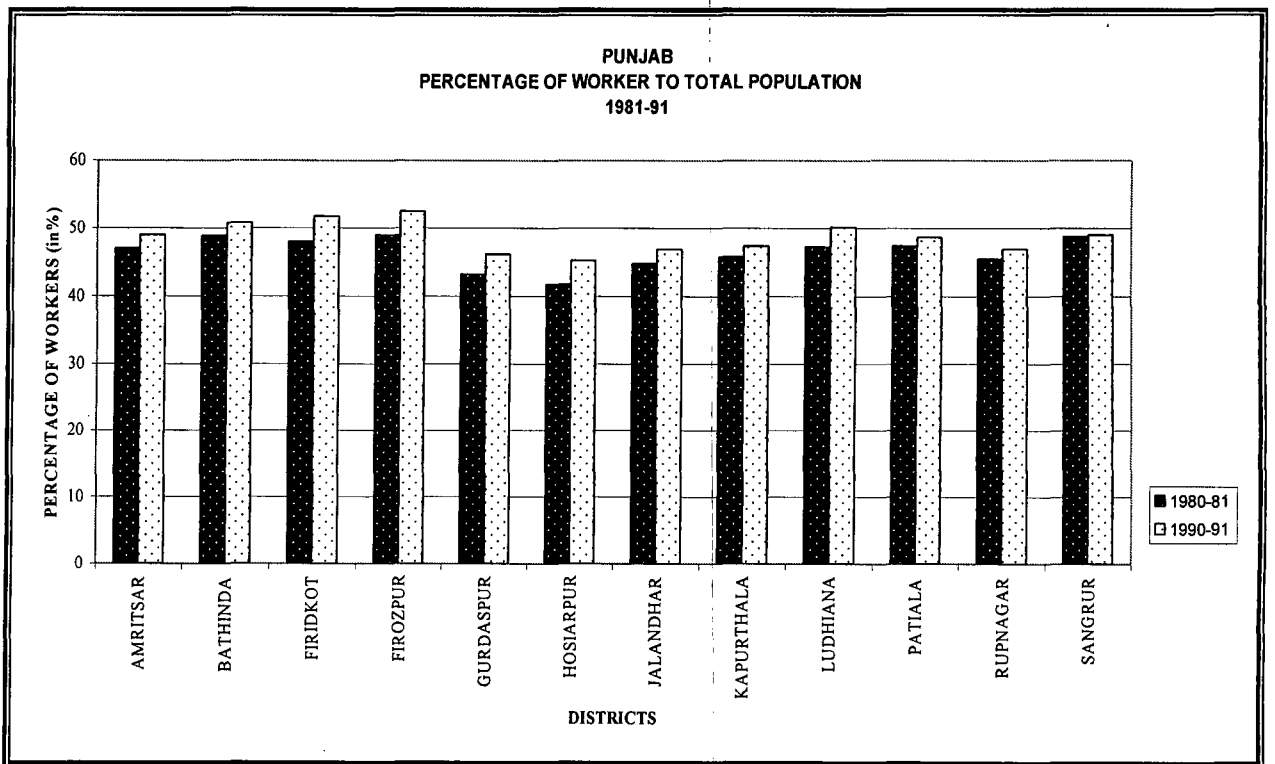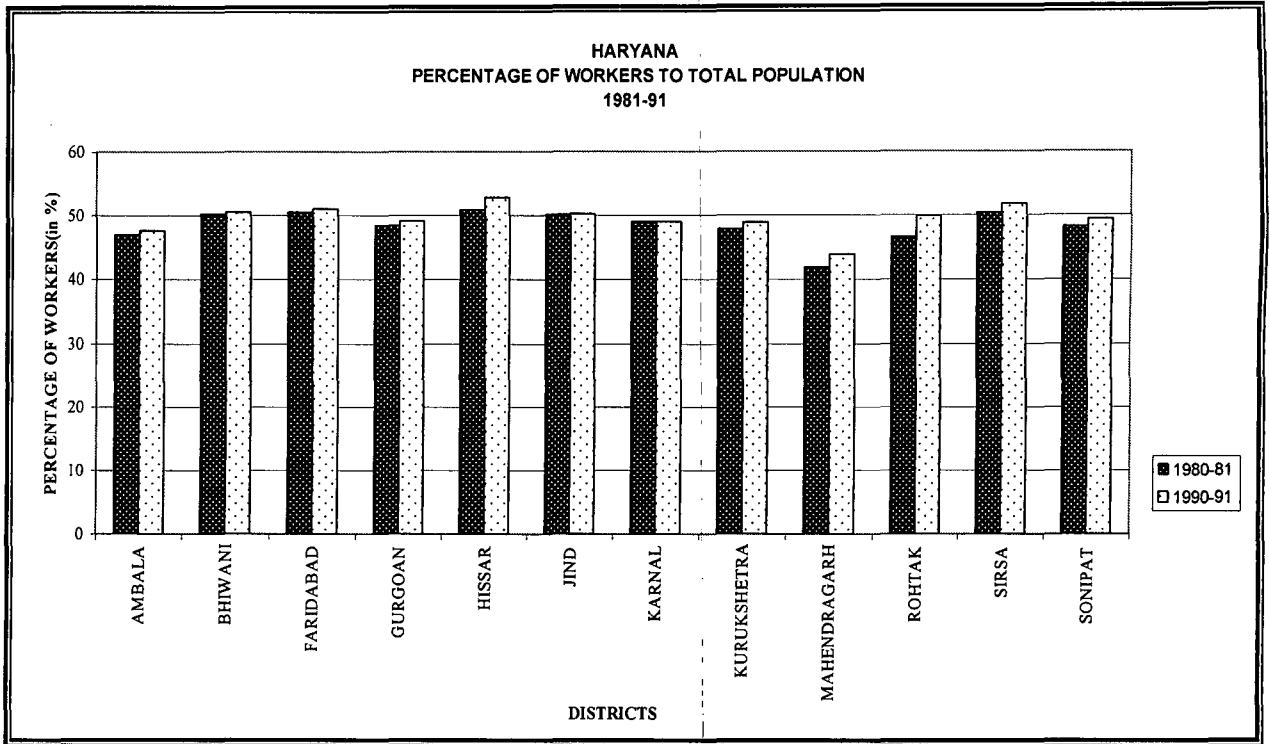
FIG 4·5

agricultural related work which may not be sufficient for high percentage. In agriculture, there is a very little demand of workers for the year. All the districts of Haryana have more than 47 percentage of workers.

The highest percentage of workers is found in Firozpur 19.01 percent and 52.47 percent in 1981 and 1991 respectively. Crop diversification and large scale development of agriculture may be the main reason. Due to double cropping and agro- industries the proportion of workers are very high. Due to large scale in-migration the proportion of workers are increasing.

Lowest concentration of workers is seen in Firozpur which has percentage of 41.79 (1981) and 45.21 (1991).This is due to slower development in agriculture, peripheral location of Lesser Himalayas and insignificant crop diversification. Here all the districts of Punjab have 41 to 49 percent in 1981 and 45 to 52 percent working population to total population is 1991. This is above national average in 1981 and 1991 also.

TABLE – 4.5.
DECADAL CHANGE IN PERCENTAGE OF WORKER OUT OF TOTAL POPULATION, 1981-91

Decadal change in Percentage	Districts in Haryana	Districts in Punjab
> 2.5	Rohtak	Faridkot, Firozpur, Gurdaspur, Hoshiarpur, Ludhiana
1.5 – 2.5	Hissar, Mahendragarh	Bathinda, Jalandhar, Kapurthala, Rupnagar, Amritsar
0.5 – 1.5	Ambala, Gurgaon, Kurukshetra, Sirsa, Sonipat	Patiala
< 0.5	Bhiwani, Faridabad, Jind, Karnal	Sangrur

Source: Provisional population total: Workers and their distribution occasional paper – 3
of 1991, series 1, census of India – 1991!

87

The above table shows the decadal change in the total main workers out of total population in the concerned states. Those districts which have maximum proportion of working population are found in the low category of growth rate i.e. below 1.5 percent. These districts are Faridabad (0.45%), Gurgaon (0.76%), Haryana and Patiala (15%), Ludhiana (2.98%) and Sangrur (0.22%) in Punjab. There are five districts in Punjab and two districts that have growth rate of 1.5 to 2.5 percent.

IV. 2.6. Life Expectancy at Birth

Life expectancy is an important variable which determine the human development of any society. It is defined as the total numbers of life expected by a person will live at birth. The developed countries which have better infrastructure in terms of medical, health and nutrition have higher life expectancy. In India it is 62 years and which is showing rising trend from the start of the century.

The life expectancy Haryana and Punjab show that both have high expectancies comparable to national average in 1981 and 1991. In 1981 the life expectancy in Haryana (52.2 years) and in Punjab is (52 years). Both rose to 69.2 years and 63.8 years in 1991. Both are showing rising trends due to tremendous increase of infrastructure of health, medicine, communication and good nutritional facilities.

In Haryana, the district showing highest life expectancy in 1981 is Sirsa (58.4 years) but replace its place to Rohtak which have 70.8 years in 1991. The reason for the higher life expectancy is due to high per capita medical facilities, good communication network, good medical infrastructure and high per capita income.

The lowest life expectancy in 1981 is shown by Jind which is 47.2 years and in 1991 the lowest is shown by Sonipat (63.5 years). The reason behind this is low infrastructure (as compare to Rohtak) in terms of health, medicine and largely low per

HARYANA
LIFE EXPECTANCY (1981-91)

LIFE EXPECTANCY (in years)

DISTRICTS: AMBALA, BHIWANI, FARIDABAD, GURGOAN, HISSAR, JIND, KARNAL, KURUKSHETRA, MAHENDRAGARH, ROHTAK, SIRSA, SONIPAT

1980-81 1990-91

PUNJAB
LIFE EXPECTANCY (1981-91)

LIFE EXPECTANCY (in years)

DISTRICTS: AMRITSAR, BATHINDA, FIRIDKOT, FIROZPUR, GURDASPUR, HOSIARPUR, JALANDHAR, KAPURTHALA, LUDHIANA, PATIALA, RUPNAGAR, SANGRUR

1980-81 1990-91

FIG 4·6

capita income. One of the remarkable feature is the its life expectancy is in between 51-59 years in 1981 to 63 to 70 years in 1991. All the districts show life expectancy above national average.

In Punjab, the highest life expectancy is shown by Patiala (59 years) in 1981 and surpassed by Ludhiana in 1991 with 71 years. Both districts have good medical facilities and higher income by which they can avail medical facilities and large scale industrialization and establishment of government medical hospitals that have boosted the medical scenario.

The districts showing, the lowest life expectancy in 1981 was Gurdaspur 44.4 years and in 1991 this position is taken by Kapurthala with 59 years. The reason behind this is agricultural dominance, low per capita income, less infrastructure support in term of medical facilities, health services and less hospitals (As compared to other districts). All districts of Punjab show high life expectancy than national average.

TABLE – 4.6
DECADAL CHANGE IN NUMBER OF YEARS IN LIFE EXPECTANCY, 1981-91

Decadal change in years	Districts in Haryana	Districts in Punjab
> 19	Jind, Kurukshetra	Amritsar, Sangrur
12-19	Ambala, Bhiwani, Faridabad, Hissar, Karnal, Rohtak	Bathinda, Faridkot, Firozpur, Gurdaspur, Hoshiarpur, Ludhiana, Rupnagar, Jalandhar
5-12	Gurgaon, Mahendragarh, Sirsa, Sonipat	Patiala
< 5	-	Kapurthala

Source: District level estimates of fertility and child mortality for 1991 and their inter relation with other variables occasional paper no. 1 of 1997, Census of India – 1991.

The table 4.6 reveals the decadal change in life expectancy in Haryana and Punjab. The average years of life of both states is almost same in 1981 but in 1991, Haryana has 69.2 year life expectancy and Punjab has 63.8 years life expectancy. District wise data shows different trends. There are districts which have decadal change of above 19 years. These districts are Jind, Kurukshetra in Haryana and Amritsar and Sangrur in Punjab. There are six districts in Haryana (Ambala, Bhiwani, Faridabad, Hissar, Karnal, Rohtak) and eight districts in Punjab (Bathinda, Faridkot, Firozpur, Gurdaspur, Ludhiana, Rupnagar and Jalandhar) that have 12 to 19 years of change in life expectancy. The above picture indicates that improvement of medical facilities and sanitation in these districts have led to better and longer life.

IV.3. LEVEL OF INTER-DISTRICTS DISPARITIES IN DEMOGRAPHIC DEVELOPMENT, 1981-91

In the following paragraph, a level of disparity in demographic indicator has been calculated for the concerned states. Co-efficient of variation of each indicators has been calculated that shows the average differences in the level of development in each state. It is noted that through the process of demographic development during 1981 to 1991 has taken place, the concerned states have experienced discouraging trend in female literacy, sex ratio, urbanization, working population and life expectancy. In the total literacy the states have shown increasing trend in terms of inter district disparities. The result of the co-efficient of variation has been provided in the following paragraphs.

TABLE – 4.7

LEVEL OF INTER-DISTRICTS DISPARITIES IN DEMOGRAPHIC DEVELOPMENT, 1981-91

(Co-efficient of variation values)

States	Haryana		Punjab	
Indicators/ Year	1981	1991	1981	1991
C_1	15.19	16.52	21.84	16.58
C_2	27.08	19.62	24.58	19.68
C_3	3.30	2.84	2.40	2.26
C_4	36.69	34.67	28.26	31.87
C_5	5.28	4.62	4.93	4.65
C_6	5.65	5.30	7.81	5.28

Note:

C_1-Percentage of literates to total population

C_2-Percentage of Female literates to total population

C_3-Sex Ratio (number of females per 1000 males)

C_4-Urban population as percentage to total population

C_5-Percentage of workers out of total population

C_6-Life expectancy at birth

The value of co-efficient of variation for Haryana in literacy has increased from 15.19 in 1981 to 16.52 in 1991 and for Punjab the value has decreased from 21.84 to 16.58 during the decade. It means Haryana's literacy rate during 1981-91 is not stable compared to Punjab.

The inter-district disparities in female literacy have become low in both states during the 1981 to 1991. The corresponding value is for Haryana 27.08 in 1981 and 19.62 in 1991; and for Punjab it is 24.58 and 19.68 respectively.

Disparities in sex ratio have shown varying trends in there two states. Haryana experienced decreasing value of 3.30 in 1981 to 2.84 in 1991 among the districts. While Punjab has experienced decreasing disparities of 2.40 in 1981 to 2.26 in 1991. C.V. value shows the less variation among the districts but the actual value of sex ratio is very less for both the states.

Disparities in the level of urbanisation in Haryana and Punjab were very high in 1981. The reason is that the most of the urban population in three states are concentrated in two or three cities. For instance Faridabad, Ludhiana, Gurgaon, Amritsar accounted more than 45 percent urban population. The value of co-efficient of variation in both concerned states is 36.69 in 1981 and 34.67 in 1991 for Haryana; 28.26 in 1981 and 31.87 in 1991 for Punjab.

Taking the working population into consideration, Punjab and Haryana have low value of coefficient of variation. They show a decreasing trend. Punjab has experienced decreasing value of 4.93 in 1981 to 4.65 in 1991; Haryana has experienced variation of 5.28 in 1981 and 4.62 in 1991 among its districts.

Disparities in the level of life expectancy in both state is very low. The reason is that the medical facilities and awareness about health have increased compared to early decade. The value of C.V. in Haryana 5.65 in 1981 and 5.30 in 1991; in Punjab 7.81 in 1981 and 5.28 in 1991.

IV.4. COMPOSITE INDEX OF LEVEL OF DEMOGRAPHIC DEVELOPMEN, 1981-91

The analysis mentioned above indicates the performance of the district in terms of each indicator separately. In order to get a synoptic view of the spatial pattern of demographic development and consequent organization of space, an attempt has been made to compute composite index of the relevant indicators. All the six indicator have been chosen for deriving a composite index. The value of composite index has been obtained by principal component analysis method, a branch of factor analysis that reduces a large number of variables into a single index.

In Haryana state, Ambala, Faridabad and Sonipat have top three ranks among the all district in 1981. Ambala and Faridabad had maintained their ranks in 1991; and Sonipat obtained the fifth rank in 1991. According to 1981 composite index Hissar, Bhiwani and Jind show lowest rank i.e. 10th, 11th and last. Hissar retained the same rank in 1991 but Jind improved its rank by one place and Bhiwani improved by two place.

A notable point is that Gurgaon has achieved ninth rank in 1981 and eighth in 1991. The main reason was that in the last decade proportion of migrant population was high. These migrants mostly came from the BIMARU state and give their contribution to growth of industrialization as workers.

In Punjab state, Hoshiarpur, Gurdaspur and Jalandhar have registered higher ranks. While Faridkot, Sangrur and Bathinda have the lowest ranks which are 10th, 11th and 12th respectively. Jalandhar, Kapurthala and Sangrur retained their ranks from 1981 to 1991. The main point of interest is that Amritsar recorded 7th Rank in 1981 and 8th rank in 1981 for level of demographic development. This district has similar condition to Faridabad district. The Rupnagar district improved its rank by one rank.

TABLE 4.8

LEVEL OF DEVELOPMENT OF DEMOGRAPHICAL INDICATORS

HARYANA

	1980-81			1990-91	
DISTRICT	FCA-1	R-FCA-1		FCA-1	R-FCA-1
AMBALA	1.8225	1		2.34543	1
BHIWANI	-0.90074	11		-1.10528	9
FARIDABAD	1.17109	2		1.52635	2
GURGOAN	-0.30709	7		-0.8218	8
HISSAR	-0.78791	10		-1.36923	10
JIND	-1.84714	12		-1.58221	11
KARNAL	0.55695	4		0.9223	4
KURUKSHETRA	-0.00124	6		1.31021	3
MAHENDRAGARH	-0.36954	8		-0.78549	7
ROHTAK	0.34652	5		0.74177	6
SIRSA	-0.45477	9		-2.08449	12
SONIPAT	0.77137	3		0.90244	5

PUNJAB

	1980-81			1990-91	
DISTRICT	FCA-1	R-FCA-1		FCA-1	R-FCA-1
AMRITSAR	0.0234	7		-0.61052	8
BATHINDA	-1.60373	12		-1.94836	12
FIRIDKOT	-0.8379	9		-1.45999	10
FIROZPUR	-0.88439	10		-1.11979	9
GURDASPUR	1.12833	2		1.7676	2
HOSIARPUR	1.32508	1		2.44206	1
JALANDHAR	1.00799	3		1.30483	3
KAPURTHALA	0.65433	4		0.89255	4
LUDHIANA	0.53004	5		-0.16321	7
PATIALA	-0.20916	8		-0.04466	6
RUPNAGAR	0.29973	6		0.74791	5
SANGRUR	-1.43373	11		-1.80841	11

C1 -PERCENTAGE OF LITERATES TO TOTAL POPULATION
                                        (excluding age group 0-6)
C2 -PERCENTAGE OF FEMALE LITERATES TO TOTAL POPULATION
                                        (excluding age group 0-6)
C3 -SEX RATIO (NUMBER OF FEMAELS PER 1000 MAELS)
C4 -URBAN POPULATION AS PERCENTAGE TO TOTAL POPULATION
C5 -PERCENTAGE OF WORKERS OUT OF TOTAL POPULATION
C6 -LIFE EXPECTANCY

Map 6

HARYANA
LEVEL OF DEMOGRAPHIC DEVELOPMENT
1981
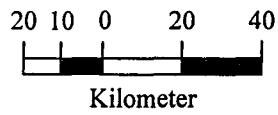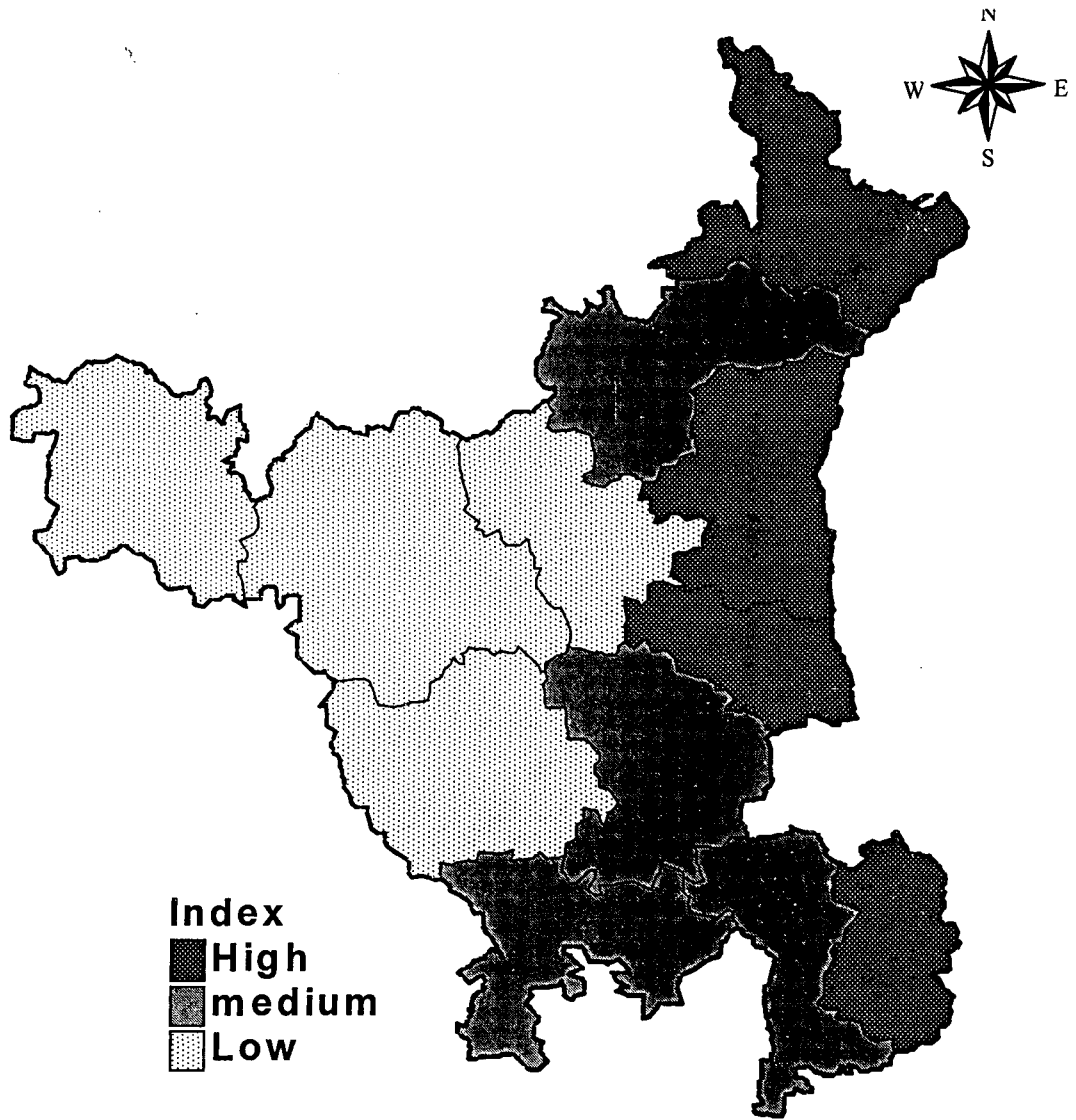
Index

High

medium

Low

20 10 0   20   40

Kilometer

Map 7

HARYANA
LEVEL OF DEMOGRAPHIC DEVELOPMENT
1991

N
W   E
S

Index
High
medium
Low

20 10   0   20   40

Kilometer

Map - 14

PUNJAB
LEVEL OF DEMOGRAPHIC DEVELOPMENT
1981

Index
High
medium
Low

20 10 0   20   40

Kilometer

Map - 15

PUNJAB
LEVEL OF DEMOGRAPHIC DEVELOPMENT
1991

N
W E
S
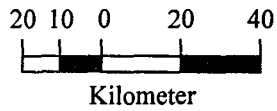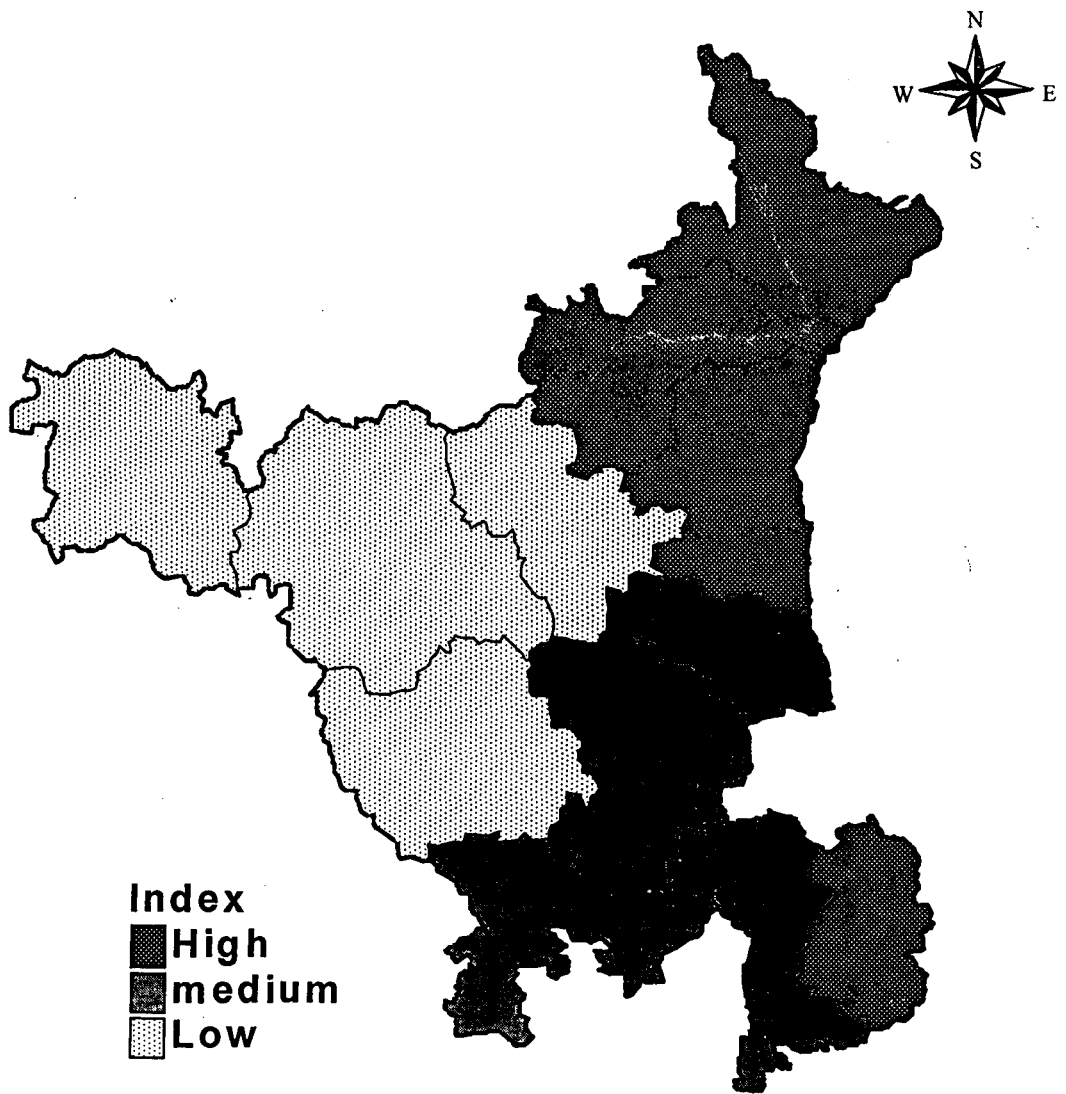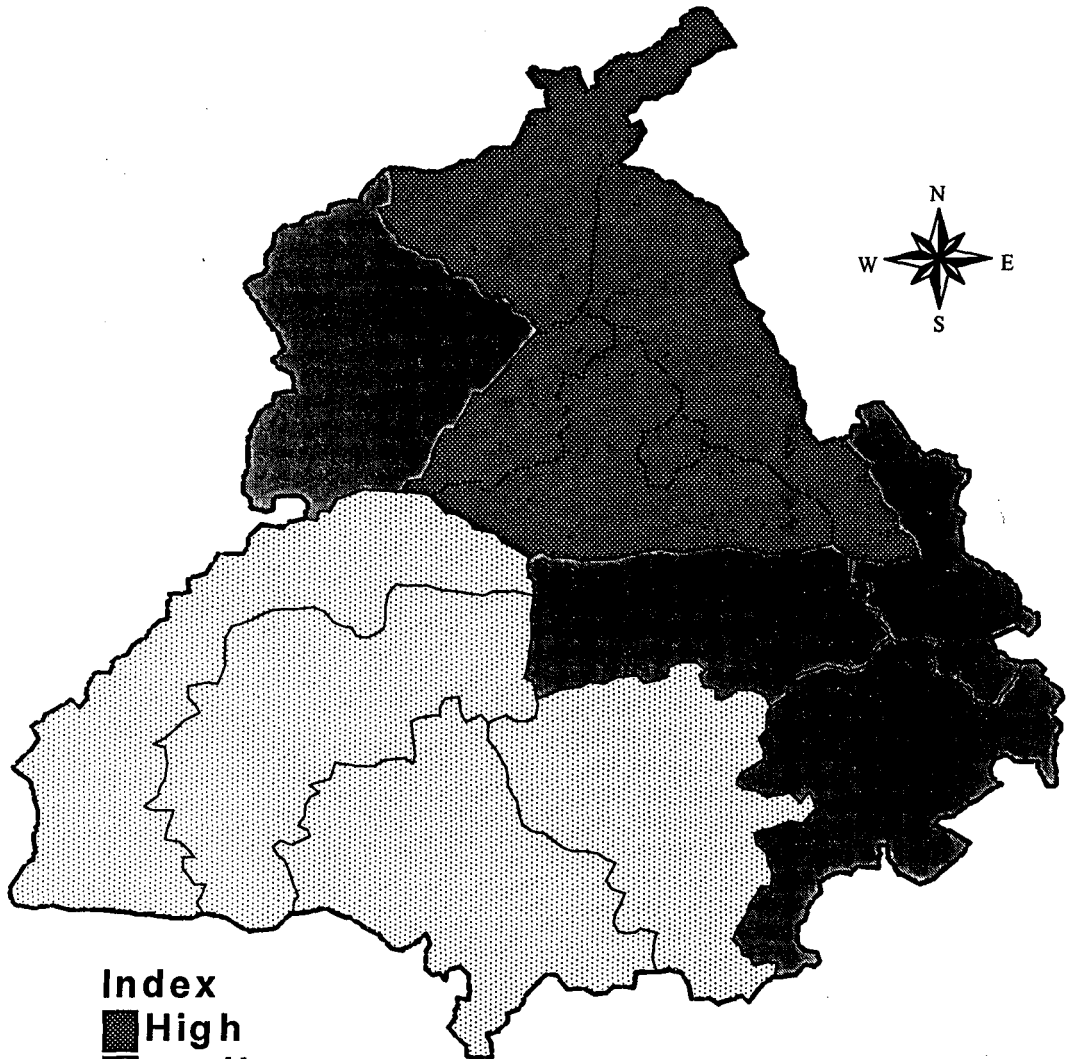
Index
High
medium
Low

20 10 0 20 40

Kilometer
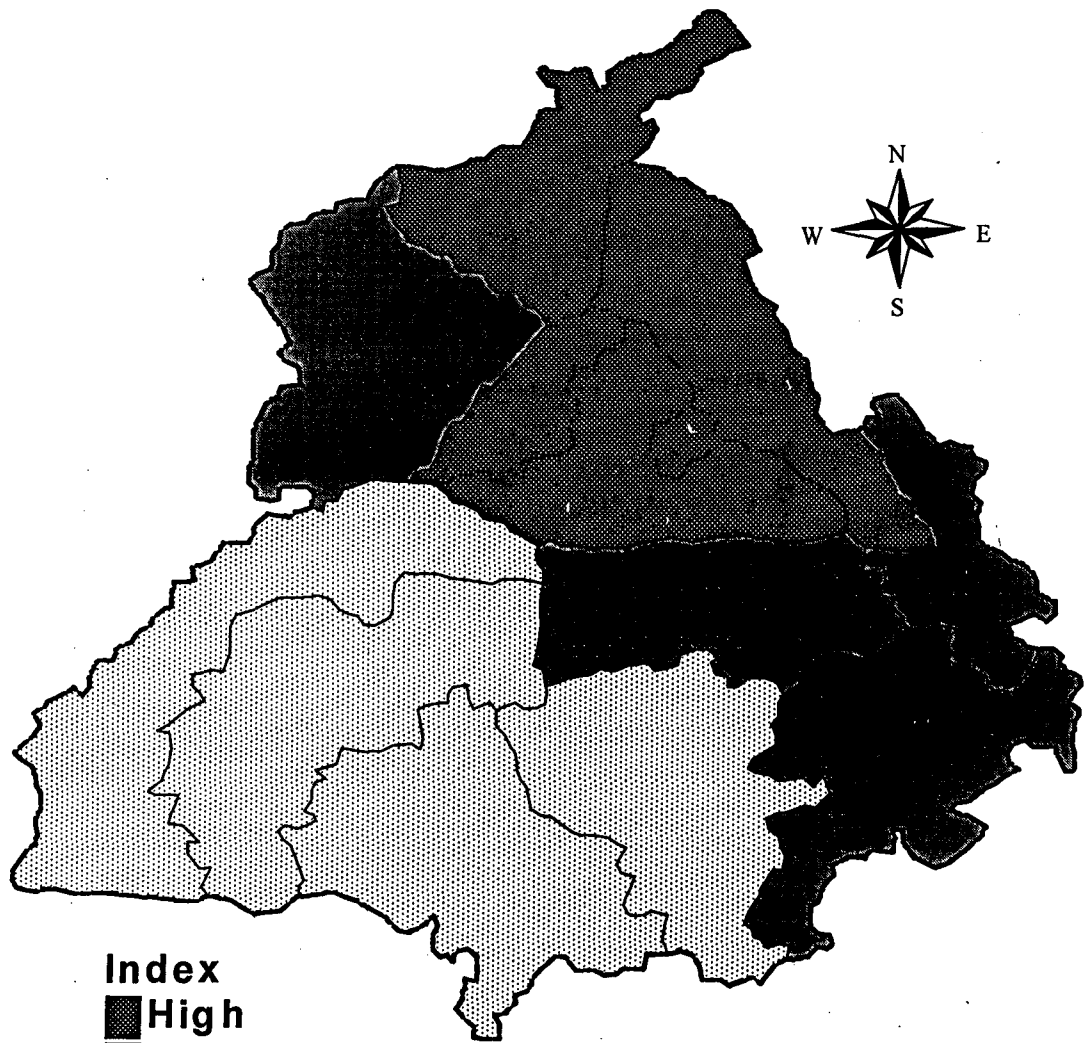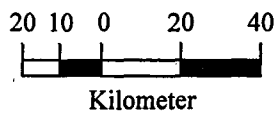
IV. 5. SUMMARY OF FINDINGS

On the basis of above analysis, following conclusions can be drawn:

➤ The share of literacy and female literacy in demographic development is more impressive. When we see the picture of these indicators among the districts of both states we find Ambala, Faridabad, Rohtak and Sonipat that have higher literacy in Haryana; In Punjab, Amritsar, Jalandhar, Ludhiana, and Kapurthala have also registered higher percentage.

➤ The picture of sex ratio reveals a different situation. All of districts has value of sex ratio less to national average and show decreasing trend continuously. The comparatively backward districts show maximum negative changes.

➤ The disparities among the districts in each indicators have not widened much except urbanization which reveals around 30 percent of co-efficient of variation.

➤ Data on life expectancy show district dominated by agricultural activities have less life expecting for instance Jind, Kurukshetra and Hissar in Haryana and Gurdaspur, Gurdaspur and Sangrur in Punjab.

The composite index reveals the overall picture of demographic development of both states. According to the composite index, Ambala, Faridabad and Sonipat in Haryana; Jalandhar, Hoshiarpur in Punjab show top ranks. Those districts which have low values of selected indicators scored lowest ranks in the composite index.

END NOTES

[1] Alagh Y.K. (1991) Indian Development Planning and Policy, An Alternative View, Vikas Publication, New Delhi.

[2] Franklin, S.H. (1956) "The Pattern of Sex Ratio in New Zealand", Economic Geography, vol. 32.

[3] Thompson, W.S. (1985) Urbanisation in Encyclopaedia of Social Sciences, Vol. XV, Machmillan, p. 189

CHAPTER – V

LEVEL OF REGIONAL DEVELOPMENT
(AN ATTEMPT TOWARDS EXPLANATION)

V.1. INTRODUCTION

The Main objective of this chapter is to examine the pattern of development and changes thereof that has occurred during 1981-91 in Haryana and Punjab. It is very difficult to measure the pattern of development and its relationship with the key sectors of economy by considering each indicator separately. In the preceding chapter composite indices of economic, social and demographic indicators has been constructed. But these individual indices are not enough to show the level by socio-economic development of different districts. It may be possible that districts that are developed in one sector may not be development in the other. Therefore, an attempt has been made here to construct a composite index of development combining by the all twenty-two indicators of economic, social and demographic aspects.

The districts have been classified into high, medium and low categories of development according to their position in the composite indexes; categories of development have been derived by classification of the districts according to their factor scores, and this is given in tables 5.1 and 5.2. These tables reveal the range of the class intervals taken for the classification.

V.2. Level of Regional Development, (1981-91):-

To measure the level of regional development, all indicators of three aspects of development have been taken simultaneously to derive a single composite index. Table 5.1 depicts the classification of district according to their respective categories in the overall development in Haryana in 1981-91 decade. It reveals that there are six districts (Faridabad, Rohtak, Kurukshetra, Hissar, Jind and Bhiwani) which have experienced improvement in their relative position in overall development index.

There are four districts characterized to have high category of development. These are Ambala, Faridabad, Rohtak and Karnal in 1981. But Karnal has slipped down by one rank and got fall in the medium development category in 1991.

Faridabad district has got elevated from 2nd rank in 1981 to 1st rank in 1991. Faridabad has retained its high development category with regard to economic, social and demographic sectors. The main region behind highest development in Faridabad district is its nearness to Delhi. Faridabad's functional linkages with Delhi are stronger because of its proximity to the Capital

TABLE NO. 5.1

HARYANA

FACTOR SCORES AND RANK OF DISTRICTS, 1981-91

YEAR	1981			1991	
DISTRICTS	FAC-1	RANK	DISTRICTS	FAC-1	RANK
AMBALA	1.4387	1	FARIDABAD	1.6095	1
FARIDABAD	1.3994	2	ROHTAK	1.4331	2
ROHTAK	0.9568	.	AMBALA	0.7983	3
KARNAL	0.7562	4	KURUKSHETRA	0.5333	4
SONIPAT	0.5087	5	KARNAL	0.3803	5
KURUKSHETRA	0.0895	6	SONIPAT	-0.024	6
GURGAON	-0.102	7	GURGAON	-0.032	7
SIRSA	-0.819	8	HISSAR	-0.136	8
HISSAR	-0.873	9	JIND	-0.97	9
MAHENDRAGARH	-0.999	10	BHIWANI	-1.109	10
BHIWANI	-1.172	11	SIRSA	-1.159	11
JIND	-1.185	12	MAHENDRAGARH	-1.324	12

TABLE 5.1 (a)
LEVEL OF REGIONAL DEVELOPMENT
HARYANA

LEVEL OF DEVELOPMENT	1981	1991
HIGH	AMBALA, FARIDABAD, ROHTAK, KARNAL	FARIDABAD, ROHTAK, AMBALA, KURUKSHETRA
MEDIUM	SONIPAT, KURUKSHETRA, GURGAON, SIRSA	KARNAL, SONIPAT, GURGAON, HISSAR
LOW	HISSAR, MAHENDRAGARH, BHIWANI, JIND	MAHENDRAGARH

This is why Faridabad has development in terms of infrastructural facilities, resulting in its top position in the overall development index. Rohtak and Ambala Districts have been able to capture second and third position with respect to overall development.

In the medium development category, there are four districts (Karnal, Sonipat, Gurgaon, and Hissar). Karnal has dropped its position from 4th to 5th and has been listed in the medium category. Karnal is located in north-eastern part of Haryana and the National Highway No.1. crosses into it. Incidentally Karnal has the 3rd rank in respect of economic development and has also witnessed agricultural development. But in social indicators, like literacy, urbanization, life expectancy etc. this district has

Map 8

HARYANA
LEVEL OF REGIONAL DEVELOPMENT
1981

Index
High
medium
Low

20 10 0   20   40

Kilometer
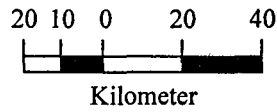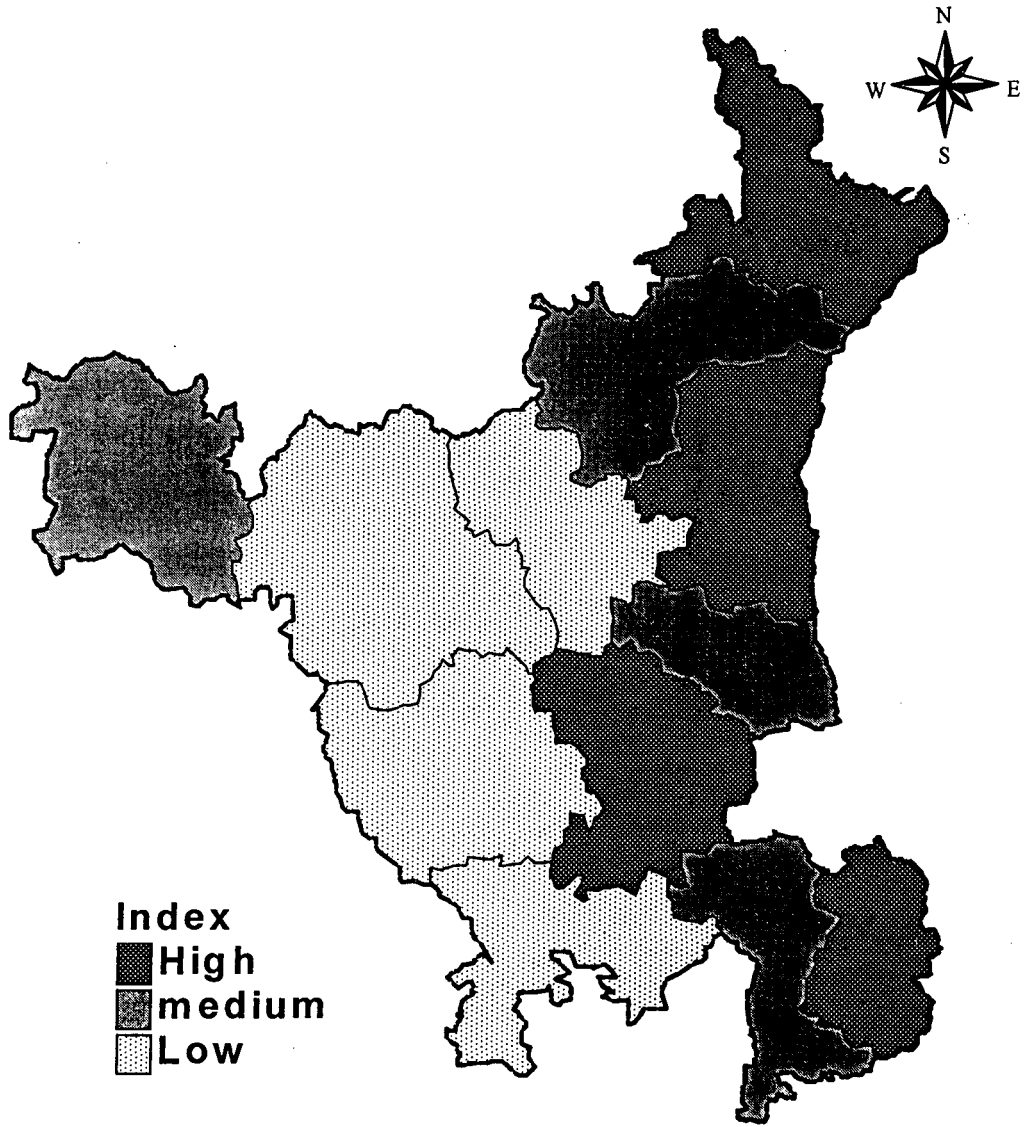
Map 9

HARYANA
LEVEL OF REGIONAL DEVELOPMENT
1991

Index
High
medium
Low

20 10 0   20   40

Kilometer
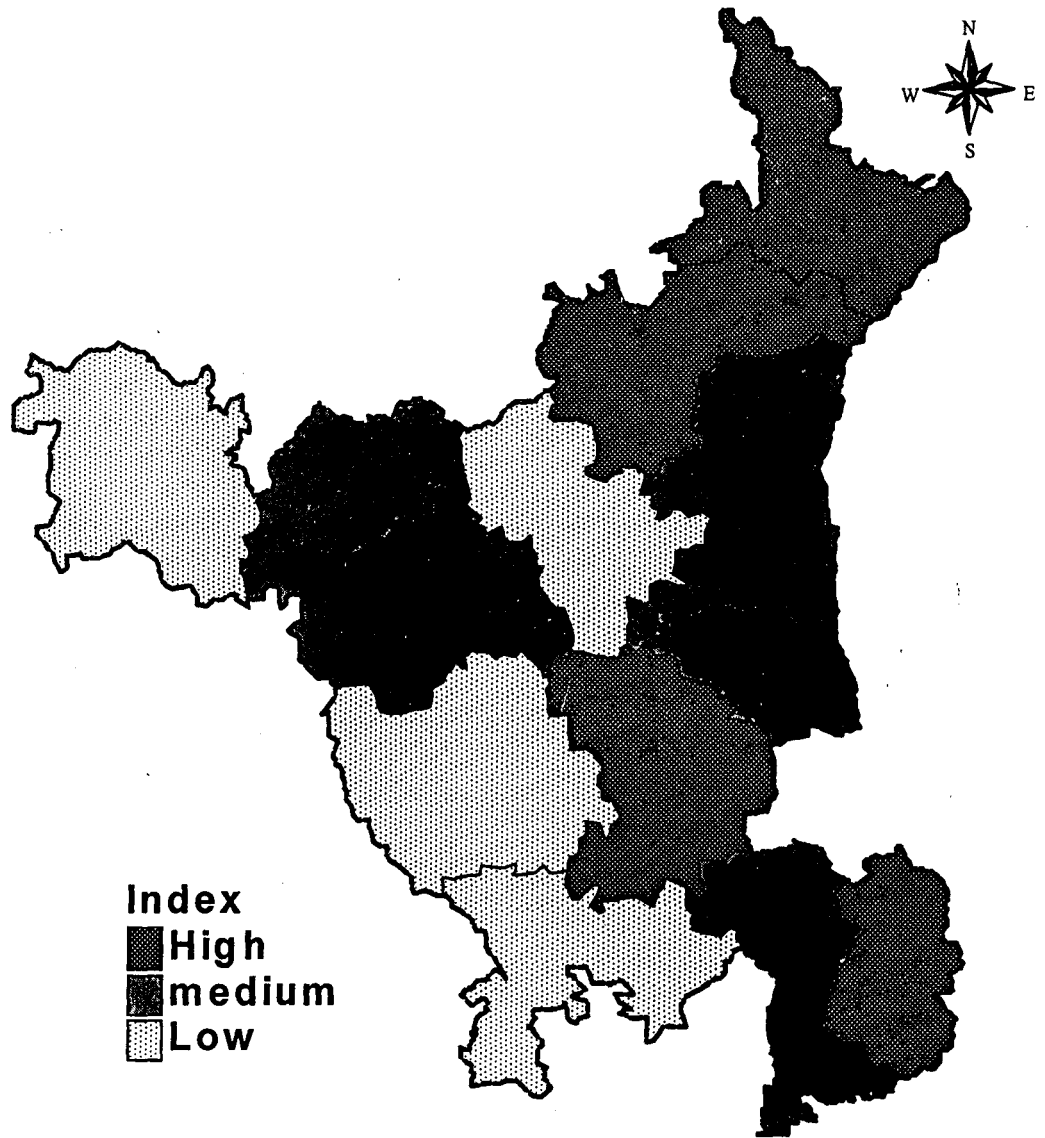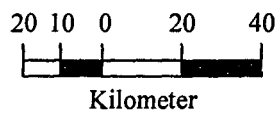
lacked behind. So, it is lies in the medium category of development. An interesting point worth mentioning is that Gurgaon district situated within medium category and has 7th position in respect to the overall development. The proportion of agricultural land to total area is very less due to lack of irrigation and presence of Aravali range which is responsible for sandy soil. But at present (2001) this district has got high development in respect of industrial, economic and social indicators (Verma. D.C. Haryana, N.B.T. Publication). Hissar has improved its position by one step from 1981 to 1991.

In the low development category, are four districts of Hissar, Mahendragarh, Bhiwani and Jind. Sirsa has lowered its position due to lack of social and demographic development. It has occupied the last position in social and demographic development among all the districts of Haryana. Jind, Bhiwani and Mahendragarh districts have retained their ranks in development index. These districts have been deprived of economic and social infrastructure.

Table 5.2(a) depicts the classification of districts according to their respective categories in the overall development of Punjab during 1981-1991 decade. There are four districts characterized as high level of development. These are Jalandhar, Gurdaspur, Amritsar and Ludhiana in 1981 and Jalandhar, Hosiarpur, Amritsar and Gurdaspur in 1991. Ludhiana has lost its high level of development and Hosiarpur improved its level of development from medium to high development during the decade. Jalandhar has retained its top position during the time period 1981-91. This district has high development with respect to economic, social and demographic indicators. Amritsar district has only portrayed a high development in economic indicators because of these are hosiery industry are situated due to implementation of

Bank Credit policy. The road facilities are also very favourable in comparison to other districts. But Amritsar has low development in social and demographic indicators. This district has 5th and 8th position for the social and demographic indicators in 1981 and 1991.

TABLE NO. 5.2
PUNJAB
FACTOR SCORES AND RANK OF DISTRICTS, 1981-91

Year	1981			1991	
DISTRICTS	FAC-1	RANK	DISTRICTS	FAC-1	RANK
JALANDHAR	1.2516	1	JALANDHAR	1.4161	1
GURDASPUR	1.0808	2	HOSIARPUR	1.335	2
AMRITSAR	0.8274	3	AMRITSAR	1.1244	3
LUDHIANA	0.6204	4	GURDASPUR	0.7458	4
HOSIARPUR	0.6009	5	LUDHIANA	0.1985	5
RUPNAGAR	0.4647	6	KAPURTHALA	0.0541	6
KAPURTHALA	0.1039	7	RUPNAGAR	-0.098	7
PATIALA	-0.12	8	PATIALA	-0.316	8
BATHINDA	-0.717	9	FARIDKOT	-0.704	9
FARIDKOT	-1.008	10	BATHINDA	-1.1	10
FIROZPUR	-1.203	11	FIROZPUR	-1.269	11
SANGRUR	-1.902	12	SANGRUR	-1.388	12

TABLE – 5.2(a)
LEVEL OF REGIONAL DEVELOPMENT

PUNJAB

LEVEL OF DEVELOPMENT	1981	1991
HIGH	JALANDHAR, GURDASPUR, AMRITSAR, LUDHIANA	JALANDHAR, HOSIARPUR, AMRITSAR, GURDASPUR
MEDIUM	HOSIARPUR, RUPNAGAR, KAPURTHALA, PATIALA	LUDHIANA, KAPURTHALA, RUPNAGAR, PATIALA
LOW	BATHINDA, FARIDKOT, FIROZPUR, SANGRUR	FARIDKOT, BATHINDA, FIROZPUR, SANGRUR

In the medium development category, there are four districts (Hosiarpur, Rupnagar, Kapurthala and Patiala in 1981 and Ludhiana, Kapurthala, Rupnagar and Patiala in 1991). Rupnagar and Kapurthala districts replace their ranks during the period of 1981-91. Patiala has maintained its position and level of development. Kapurthala has a Railway Coach Factory (RCF) at Hussainpur which provides employment to many.

There are four districts in the low level of development category. Bathinda, Faridkot, Firozpur and Sangrur have same level of development during the 1981 and 1991 decade. Firozpur and Sangrur have retained their positions both in 1981 and in
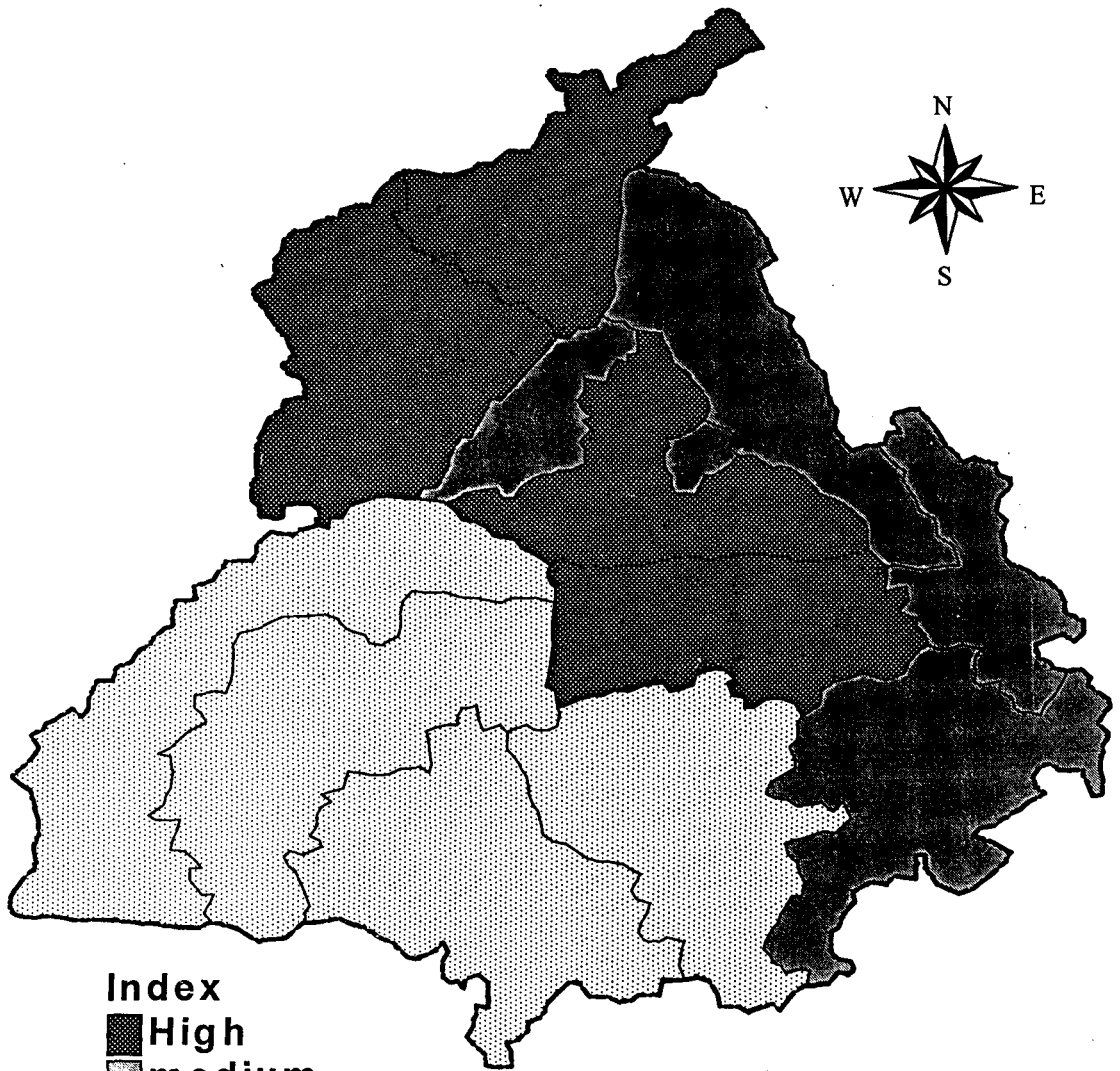
Map - 16

PUNJAB
LEVEL OF REGINAL DEVELOPMENT
1981

Index
High
medium
Low

20 10 0   20   40

Kilometer

Map - 17

PUNJAB
LEVEL OF REGINAL DEVELOPMENT
1991

N

W   E

S

Index
High
medium
Low

20 10 0   20   40

Kilometer
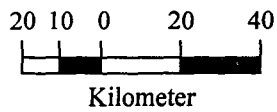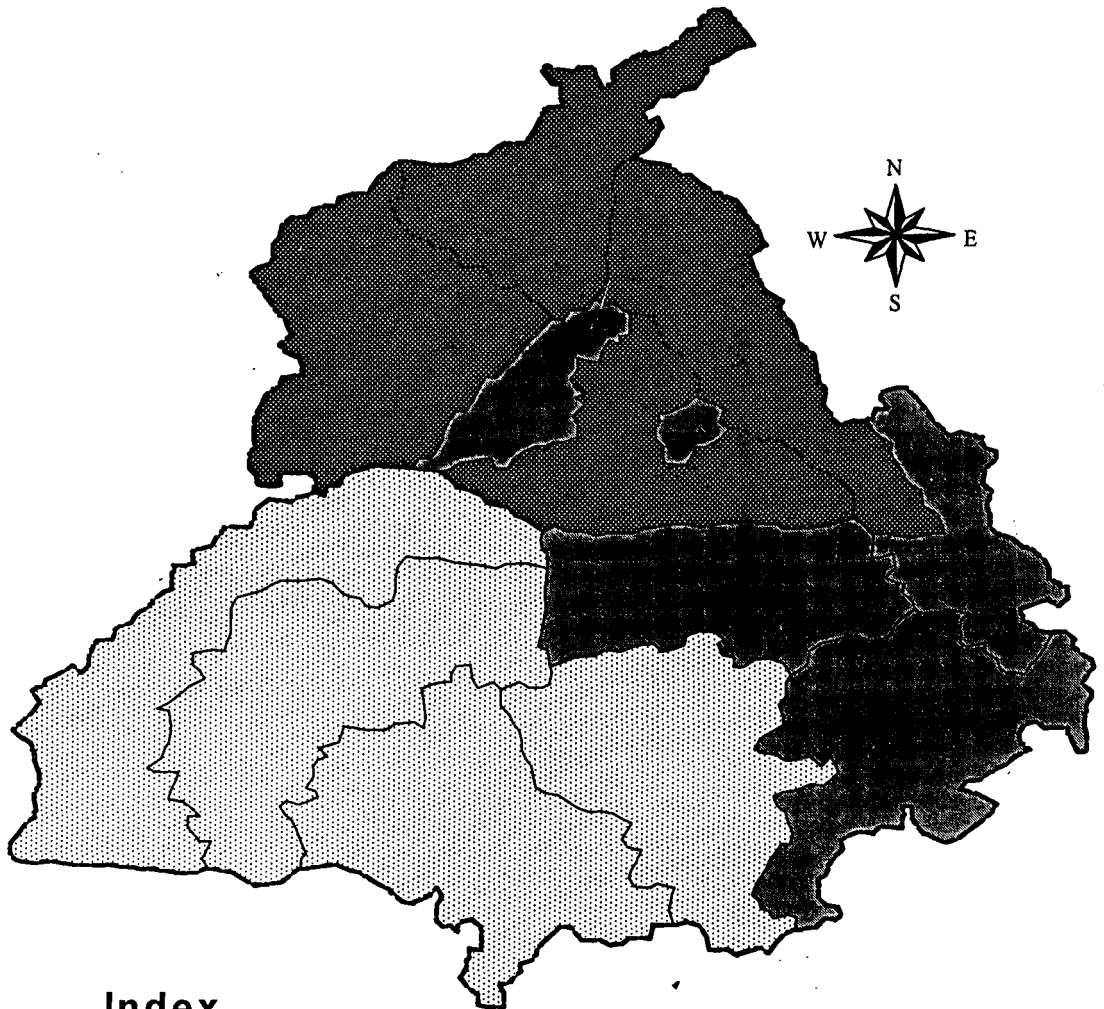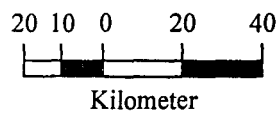
1991. But Bathinda has lost its rank during the decade. Faridkot has improved its position. These four districts are located in the southern part of Punjab. This area has characteristic of a semi-arid landscape. The over all pattern of regional development show the some districts are developed and others are undeveloped. Hence unbalanced regional development and high level of regional disparities are main problems in both States.

It is observed in the present study that Haryana and Punjab reflect almost positive common factors between them that some districts (like Amritsar, Jalandhar, Faridabad, Kurukshetra, and Rohtak) have historical importance and inherent advantage which had been helpful towards the process of development. In spite of such a bright prospects of development, it has been found that economic activities are concentrated in only a few districts of both States. This is attributed mainly to the factor of biased political decisions, mistaken policy formulation and carelessness in policy implication.

In Haryana for example (map no. 15) all development activities revolve around the four districts, i.e., Faridabad, Rohtak, Ambala and Kurukshetra, all other districts of the State reflect medium and low level of regional development. Jind, Mahendragarh and Sirsa districts shows the low level of development in economic, social and demographic indicators. It reveals that regional development plans have not been effective in uplifting less development districts.

In Punjab the situation is similar to Haryana. The region suffers from concentration of all economic activities in few districts and other districts have not received the benefits of the programmes that have been started by government for development purpose. Water crisis is a major problem in particular in those districts

that have a low level regional development. Incidentally these districts also have characteristics of semi-arid physiography.

V.3. Conclusion

The over all index of development reflect that some districts in both the states have undergone a change during the span of a decade. In Haryana, Kurukshetra and Hissar have shown positive changes in 1991, whereas Karnal and Sirsa have gone down in the ladder of overall development.

In Punjab, Hoshiarpur has shown a position change in level of development, whereas Ludhiana has gone down in the overall development index. It deserves to be mentioned that, it requires further study to analyze the factors responsible for stagnation, deterioration or elevation in the position of districts.

CHAPTER – VI

SUMMARY AND CONCLUSIONS

The present study draws its conclusion on the basis of inter-linkages between twenty two development indicators in the economic, social and demographic indicators. The main objective of the study is to analyse the inter district patters of development in Haryana and Punjab in the context of spatio-temporal variations as well as to portray the overall level of development. An attempt has been also made to analyse the changes in the level of development which may have taken place during 1981-91.

The need of the present study stems from the fact that identification of backward districts and disparities in economic and social development help formulating and suggesting some policies for their development. It may also help in identifying the bottlenecks standing against socio-economic development of the region. A wide variation has been noticed between the different districts of Punjab and Haryana regarding economic, social and demographic development.

The principal component analysis has been use to see level as well as the pattern of development in various districts in the light of above mentioned indicators. Simple co-efficient of variation has been calculated to examine the extent of intra-state disparities in economic, social and demographic indicators. In the light of the finding of the earlier chapters the following summary has been presented.

The first chapter has been discussed statement of problem, objectives, study area, data base, methodology, and organization of study and an overview of literature in detail.

In the second chapter or economic development in terms of economic indicators, the levels of development in these states have changed significantly during 1981-91. In 1981 only four districts were highly developed and two districts of Haryana were still maintaining the high level of development. Faridabad and Rohtak in Haryana, Amritsar and Jalandhar in Punjab had maintained their high level of development in economic indicators. Those districts which had registered low levels of development in the 1981 had also listed in same category in 1991. These districts are Mahendragarh, Jind and Bhiwani in Haryana; Sangrur, Firozpur and Patiala in Punjab. This indicates that no changes or improvement lies during the 1981-91 decade.

The third chapter on "social development" has been discussed the level of development in social indicators showed some changes during the 1981-91 decade among the districts of Haryana and Punjab. Karnal district had high level of social development in 1981 but lost its category in 1991. Therefore Faridabad, Rohtak and Kurukshetra had maintained their high level of social development. Gurgaon district had improved its position from medium to high social development Mahendragarh, Bhiwani and Sirsa had also as socially backward.

Jalandhar, Ludhiana, Hosiarpur and Gurdaspur had listed in the high level of social development and also maintained their position during 1981-91 decade. In medium level; Amritsar, Patiala and Kapurthala had registered in both year of 1981 and 1991. But Rupnagar had lowered its position and had been included in the low

level. Sangrur, Firozpur, Faridkot and Bathinda have been listed in low level of social development. These districts are located in southern part of Punjab which has characteristics of semi-arid area.

The chapter forth deals with the demographic development. The level of demographic has been different in both the states. The Sonipat district had been placed in the high level of demographic development in 1981. But it last its position to the medium level in 1991. The Kurukshetra district had improved their demographic profile and got the third rank in demographic development. Ambala, Faridabad districts were also developed demographically. In medium level of demographic development there were Rohtak, Gurgaon and Mahendragarh districts. Sirsa, Bhiwani and Jind showed backwardness in the demographic indicators.

Hosiarpur district of Punjab, had occupied top position in demographic development but level of economic and social development was medium in the district. Kapurthala had registered high level of demographic development in comparison to Sangrur, Firozpur, Faridkot and Bathinda that had a low level of demographic development.

Chapter five "Regional development (An attempt towards explanation)"presents the overall level of development in Haryana and Punjab. All the indicators have been taken into consideration to finding the aggregate position of all the districts of Haryana and Punjab. Ambala, Faridabad and Rohtak districts had the high level of regional development. Ambala that had the top rank in 1981 and had come to 3rd rank in 1991. Faridabad had reached at the top position in 1991. The development process in this district had shown best performance during this decade. Karnal, Sonipat, Gurgaon and Hissar had medium level development. Good

agricultural infrastructure, road network and government programmes in these districts had helped in the process of development. Bhiwani, Mahendragarh, Jind and Sirsa were the backward districts according to the overall development index.

In Punjab; Jalandhar, Hosiarpur, Amritsar and Gurdaspur was in the high level of regional development. In these districts the non-agricultural sectors together played significant role in their development. Ludhiana, Kapurthala, Rupnagar and Patiala had medium level development. Rupnagar and Patiala districts had shown moderate level of development owing to its short distance from Chandigarh which had given political and financial is edge in comparison to other districts of the states. In Bathinda, Sangrur, Faridkot and Firozpur, a low level of development in economic, social and regional development was noticed. Inter-district disparities in terms of economic and demographic aspects were highest in Haryana as compared to Punjab. Where as, in social indicators Punjab had the high level of disparities as compared to Haryana. This indicates that social development in Haryana has stabilised. These were the main findings which observed in present study.

On the basics of above findings following policies and programmes can suggested to alleviate regional disparities and improve the all round level of the districts that are backward.

➤ The first step should take in identification backward districts in both states and implementation of effective policies and programmes. The basic approach should be integrated with economic, social and demographic development to generate the overall development.

- Credit facilities should be provided to industries by banks and corporate societies viz. to the sugar industry, rice milling etc. to create employment for local workers.

- Multiple cropping and cultivation of cash crops should be promoted to increase the income of the farmers.

- Rural roads are essential for achieving the objective of integrated rural development. The priority should be given to the development of roads in both states in the village level.

- The formal school education through system should be expanded and improved

- The well-defined open learning system should be developed by government with a network of educational opportunities relevant to the needs and circumstances of learners, especially girls, women, SC's/ST's and the poor, and the under privileged section of society.

- Effective mechanism of provision of health services responsive to the needs of rural masses should be developed and these should be accountable to the community. Panchayati Raj system would become an effective instrument for enhancing community participation in the health programmes and providing supervision and support to primary health care infrastructure.

- Education among women is more important in decreasing the social as well as economic backwardness. So, there should be emphasis on female education and female empowerment through awareness generation.

➢ Responsibility of people about the development of their area is very crucial. So, people should be made aware of their fundamental duties, and awareness should be generate regarding social problems including population and environmental problem An integrated step is required based on people participation i.e. working hand in hand with the government and community to eliminate the existing problems.

Thus the above mention suggestions would support and improve the level of regional development in both the states Haryana and Punjab, especially in the backward districts. In the study an earnest effort has been made to understand the development process in general, involving economic, social and demographic indicators, and finally taking into account the regional development perspective.

BIBLIOGRAPHY

BOOKS

❖ Ahmed, A. (2000): *Social Geography*, Rawat Publication, Jaipur.

❖ Alagh, Y.K. (1991): *Indian Development Planning and Policy, an Alternative View*, Vikas Publication, New Delhi.

❖ Bernstien, H. (1973): *Underdevelopment and Development*, Penguin, Harmondsworth.

❖ Chand, M. and Puri V.K. (1983): *Regional Planning in India*, Allied Publication Limited, New Delhi.

❖ Chopra, P. (ed.) (1978), *"Gazetteer of Haryana"*, Published by Haryana Administration, Chandigarh.

❖ Chopra, P.W. (ed) (1992), *"Encyclopaedia of India vol. 1, Haryana,"* Published by Rima Publishing House, Inderpuri, Delhi

❖ Davis, Kingsley, (1978), *"Social Demographic Aspects of Economic Development in India,"* in Simon Kunjnets (ed),Economic Growth of Brazil, India, Tapan Duke University Press.

❖ Encyclopaedia of India (2001): *Student's Britanica* Vol. 2, 2001.

❖ Fridemen and William, Alonso (ed. 1964(: *"Regional Development and Planning: A Reader*, Cambridge Mass: The MIT Press.

❖ Ganguli, B.N. and Gupta D.B. (1976): *Level of Living in India*, S. Chand and Co.; New Delhi.

❖ Gomti Arora, (1990): *Social Structure and Fertility (A Study of Population Dynamics in Haryana)* National Book Organisation.

❖ Grover, V. (1998): *Encyclopaedia of India and her States*, vol 4&5, and 2nd Edition.

❖ Hovi, H.S. and Tiwana, D.S. (1994): *Geography of Punjab India – The Land and People*, N.B.T. India.

❖ Jhingan, M.L. (1986), *"The Economics of Development and Planning,"* Kohark Publication, Trivananpuram.

❖ Johnston, R.J. (ed 2000): *The Dictionary of Human Geography*, Fourth Edition, Oxford; Blackwell Publication Ltd.

❖ Kaur, M. (1994): *Punjab Encyclopaedia of India*, Vol XVIII.

❖ Kunda, Amitabh (1980), *"Measurement of Urban Process – A Study in Regionalisation,"* Bombay; Popular Publication.

❖ Mishra, G.P. and Joshi A. (1985): *Regional Structure of Development and Growth in India*, Ashish Publication, New Delhi.

❖ Mishra, R.P. (1984), *Regional Development Planning in India: A New Strategy*, Delhi, Vikas Publication.

❖ Misra, S.K. and Puri V.K. (1990): *Indian Economy-Its Development Experience*; Himalaya Publishing House, Delhi.

❖ Mitra, A. (1961), *"Level of Regional Development in India,"* Census of India, Vol. I, Part I (i)

❖ Mitra, A. (1978): *India's Population: Aspects of Quality and Control*; New Delhi: Abhinav Publication.

❖ Parlov, V., Rastyamnikov, V. Shirokov, G. (1985) India: *Social and Economic Development, 18th – 20th Centuries*, Progress Publication, Moscow.

❖ Pepelasis, A (1967): *Economic Development, Universal Book Stall*, New Delhi.

❖ Premi, M.K. (1988), *"An Introduction to Social Demography,"* Vikas Publishing House, Delhi.

❖ Rao, H. (1984): *Regional Disparities and Development in India*, Ashish Publication, New Delhi.

❖ Ray R. and Srivastava R.K. (1986): *Dialogues on Development: The Individuals, Society and Political order*; Saga Publication, New Delhi.

❖ Raza M. and Kundu, a. (1982): *Indian Economic: The Regional Dimension, Spectrum Publication*, New Delhi.

❖ Sharma, S.L. (1986): *Development Socio-cultural Dimension*, Rawat Publication, Jaipur.

❖ Singh, R.L. (192): *India; A Regional Geography*, NGSI, Varanasi, U.P.

❖ Smith, D.M. (1987): *Geography, Inequality and Society*; Cambridge University Press, London.

❖ Sundaram, K.P. and Dutta R. (1999): *Indian Economy S. Chand and Company Limited*, New Delhi.

❖ Thornstone, C.L. (1974): *Multiple Factor Analysis*, Chicago University Press, Chicago.

❖ Verma, D.C. and Singh S. (2001): *Haryana-India – The Land and the People.*, National Book Trust, India.

ARTICLES

❖ Arora, s., (1973): *Social Backwardnes of Fifth Lok Sabha*: Economic and Political Weekly, Vol VIII, no. 31, pp. 1433-44.

❖ Banarjee, S. and Roy S. (1998): *On Construction of District Development Index in Best Bengal*; Economic and Political Weekly November 21, 1998, p. 3019-3026.

❖ Bawa, R.S. and Sharma, M.K. (1983): *Soruce of Variations Industrial Development in Punjab*; Indian Journal of Regional Science, vol. XX, no. 2, pp. 46-56.

❖ Behera, M. and Mitra, A.K. (1996): *The standard of living in India: An attempt towards inter regional study*; Indian Jurnal of Regional Science, vol, 28, no. 2, p. 1-7.

❖ Bhalla, S. (1995): *Development, Poverty and Policy: the Haryana Experience*: Economic and Political Weekly, Oct., 14-21, 1995; p. 2619-2634.

❖ Bhat, L.S. (1994): *Spatial Perspectives in socio-economic development from national and Regional Analysis*, Geography and Regional Planning, vol. IX, No. 4, p. 252-259.

❖ Dasgupta, B (1971) *Socio-Economic Classification of Districts : A statistical approach*; Economic and Political Weekly August 1971.

❖ Datta, R. (1966): *Indqualities in Educational Development, Journal of Education Planning and Administration*, vol X, no. 3, July, pp. 255-261.

❖ Dubey, V.P.S. and Kaur, R. (1998): *Urbanization: Problems and Prospects (A Casc Study of Punjab);* Man and Development 1998, p. 116-128.

❖ E.P.W. Research Foundation (1994): *Social indicactors of Development for India – II, Inter State Disparities*, Economic and Political Weekly, May 21, pp. 1300-1308.

❖ *Focus on Haryana: prohibition: The Factual position*; Mass Mainstream no. 6, 1996, p. 31-41.

❖ Ghosh, B and De, P. (1998): *Role of Infrastructure in Regional Development (A study over plan period), Economic and Political Weekly, November 21*, 1998, p. 3039-3048.

❖ Harpal Singh (1985): *Non agricultural working force in Rural Haryana* : 1981; National Geographical Journal of India, December 1995, p. 294-301.

❖ Kaur, D. and Ghuman B.S. (1995): *Inter-district disparities in Punjab: Implication for Planning, Indian Journal of Regional Science*, vol. XXVII, no. 1&2, 1995, p. 183-194.

❖ Kaur, I. (1998): *Structural Changes in Punjab and Haryana – A comparisional*; Indian Journal of Regional Science, vol. 30, no. 1.

❖ Krishna, G. and Chandra, R.L. (1974): *"Haryana work force and its occupational structured*, 1971"* Manpower Journal, vol. X, no. 2, 1974.

❖ Majumdar P. (2000): *Some aspects of development in Punjab, India*, Geographical Review of India. Vol. 62, no. 2, June 2000, p. 161-176.

❖ Mangat, H.S. (1993): *Agricultural Development in Haryana : A Regional Survey*; Man and Development, March 1993, p. 76-85.

❖ Nath, V. (1970): *Regional Development, India Planning*; Economic and Political Weekly, August 5, pp. 2831-2838.

❖ Pattanik, S. and Chhatopadhya K.N. (1975: *"Spatial variation in Level of Development in Orissa"* Indian Journal of Regional Science, Vol. VIII, no. 1 July 1975.

❖ Paul, H.S. (1998): *Education and literacy in Punjab*; The Sikh Review, p. 44-47.

❖ Paul, M. (1983): *Technology and Agriculture in Haryana*, Haryana Review, November 1983, p. 32-38.

❖ Prakash, S. (1977): *Regional inequalities and Economic development with special reference to India, facilities in India*, Indian Journal of Regional Science, vol. 9, no. 2, p. 172-178.

❖ Rani, P.G. (1999): *Human Development Index in India: A District Profile*, Artha Vijana, vol XLI, no. 1, March pp. 1930-1939.

❖ Sharma, J.N.: *"Balanced Regional Development – is it possible?* Economic and Political Weekly, December 1996, vol. I, No. 8.

❖ Sharma, S.C. and Sharma R. (1993): *Spatial Planning for Socio-Economic Development at Micro level*, Geographical Review of India vol. (55), no. 1, 1993.

❖ Sharma, S.L. (1980): *Criteria of Social Development :* Social Action, vol. 30, January-March 1980, pp. 62-82.

❖ Singh, H.S. (1978): *Rich Resoruce Poor People; Eastern Annual Number*; pp. 1430-1439.

❖ Singh, J.P. (1991): *Productivity Based indicactors of Development*; Social Change, vol. 21, no. 4, December pp. 7-14.

❖ Singh, N. and Sangwan, B. (1995): *Urbanization in Haryana: The Emerging Scenario*: Geographical Review of India, vol. 63, p. 153-160.

❖ Sridharan (1991): *District Planing : Some Basic Issues*, Indian Journal of Regional Sciene, vol. XXIII, no. 2, pp. 32-42.

❖ Srinivasan, G. (1998): *Towards Better Infrastructural Facilitis*; Yojana, Jan 1998, p. 9-12.

❖ Verma, S.S., and Puri S.K. (1988): *Spatial Pattern of Infrastructure facilities and Regional Development: A study of Rehilkh and Plain , U.P.:* Indian Journal of Regional Science, Vol. 20, no. 2, p. 35-42.

❖ Visaria, P. (1996): *Population Growth and Development in India: A Perspective of Eight Plan*, Yojna, Special vol. XX, no. 2, pp. 35-42.

❖ Yadav, B. (2000): *Haryana's rising 'critical insider(s)*; Economic and Political Weekly, December 9, 2000, p. 4383-4385.

GOVERNMENTS DOCUMENTS

❖ Census of India (1981 and 1991): *Availability of Infrastructure facilities in rural India*, 1991.

❖ Census of India (1991): *Haryana State District Profile 1991; Census of India,* 1991.

❖ Census of India (1991): *Provisional Population total: workers an their distribution*; occasional paper – 3 of 1991, series–1.

❖ Census of India (1991): *Punjab State District Profile 1991*, Census of India 1991.

❖ Census of India (1991): *State profile 1991 – India*, New Delhi.

❖ Centre for Monitoring of Indian Economic (1997 and October 2000): *Profiles of Districts*, CMIF, Bombay.

❖ Economic and statistical Organisation (1981 and 1991): *Statistical Abstract of Haryana government of Haryana*, Chandigarh.

❖ Economic and Statistical Organisation (1981 and 1991): *Statistical Abstract of Punjab; Government of Punjab*, Chandigarh.

❖ Fertilizer association of India (1981 and 1991): *Fertilizer statistics of 1981 and 1991*, New Delhi.

❖ Government of India (1997): *Eight Five Year Plan* vol. 1 and 2, 1992-97, Government of India, planning commissionm New Delhi.

❖ Government of Karnataka (1999): *Human Development in Karnataka*; Bangalore.

❖ Mitra, A. (1961): *Level of Regional Development in India; Census of India*, vol. 1, Occasional Paper no. 1 a(1).

Appendix-I

ECONOMIC INDICATORS

FERTILIZER CONSUMPTION IN KG./ha.

HARYANA

DISTRICT	1980-81	1990-91	COMPOUND GROWTH RATE
AMBALA	67.5	140.54	7.61
BHIWANI	4.12	17.13	15.32
FARIDABAD	28.86	61.28	7.82
GURGOAN	20.31	27.13	2.94
HISSAR	27.81	93.27	12.86
JIND	28.62	68.47	9.11
KARNAL	98.97	189.56	6.71
KURUKSHETRA	87.11	205.36	8.95
MAHENDRAGARH	24.36	75.08	11.91
ROHTAK	18.1	56.62	12.08
SIRSA	47.76	116.6	9.34
SONIPAT	43.73	137.81	12.16
TOTAL	41.04	93.77	8.61

PUNJAB

DISTRICT	1980-81	1990-91	COMPOUND GROWTH RATE
AMRITSAR	97.19	98.65	0.15
BATHINDA	64.17	115.27	6.03
FARIDKOT	111.87	152.03	3.11
FIROZPUR	98.24	139.3	3.55
GURDASPUR	108.35	189.68	5.76
HOSIARPUR	69.07	102.29	4.01
JALANDHAR	127.48	157.43	2.13
KAPURTHALA	152.43	188.28	2.13
LUDHIANA	137.3	232.98	5.43
PATIALA	110.01	171.47	4.54
RUPNAGAR	67.95	164.57	9.25
SANGRUR	81.92	141.31	5.60
TOTAL	101.83	156.17	4.37

GROSS IRRIGATED AREA AS % OF GROSS SOWN AREA

HARYANA

DISTRICT	1980-81	1990-91	COMPOUND
			GROWTH RATE
AMBALA	43.65	63.41	3.80
BHIWANI	25.17	33.94	3.03
FARIDABAD	55.89	57.85	0.35
GURGOAN	40.89	51.65	2.36
HISSAR	73	80.85	1.03
JIND	69.24	83.9	1.94
KARNAL	85.95	97.33	1.25
KURUKSHETRA	85.95	96.18	1.13
MAHENDRAGARH	32.54	47.24	3.80
ROHTAK	54.15	66.97	2.15
SIRSA	64.08	76.81	1.83
SONIPAT	71.02	91.11	2.52
TOTAL	59.44	71.46	1.86

PUNJAB

DISTRICT	1980-81	1990-91	COMPOUND
			GROWTH RATE
AMRITSAR	97.19	98.65	0.15
BATHINDA	84.09	92.91	1.00
FARIDKOT	90.65	96.55	0.63
FIROZPUR	91.24	98.38	0.76
GURDASPUR	70.37	78.89	1.15
HOSIARPUR	45.35	62.83	3.31
JALANDHAR	92.68	98.98	0.66
KAPURTHALA	91.09	99.37	0.87
LUDHIANA	92.89	99.76	0.72
PATIALA	83.13	94.41	1.28
RUPNAGAR	46.64	61.88	2.87
SANGRUR	92.64	99.4	0.71
TOTAL	85.24	93.35	0.91

PER CAPITA BANK CREDIT TO AGRICULATURE IN RS.

HARYANA

DISTRICT	1980-81	1990-91	COMPOUND
			GROWTH RATE
AMBALA	80	355	16.07
BHIWANI	70	309	16.01
FARIDABAD	95	246	9.98
GURGOAN	155	303	6.93
HISSAR	73	565	22.71
JIND	148	676	16.40
KARNAL	135	501	14.01
KURUKSHETRA	114	570	17.46
MAHENDRAGARH	89	380	15.62
ROHTAK	60	354	19.42
SIRSA	149	586	14.68
SONIPAT	81	514	20.30
TOTAL	105	448	15.61

PUNJAB

DISTRICT	1980-81	1990-91	COMPOUND
			GROWTH RATE
AMRITSAR	76	331	15.85
BATHINDA	137	700	17.72
FARIDKOT	181	644	13.53
FIROZPUR	230	720	12.09
GURDASPUR	35	328	25.08
HOSIARPUR	183	314	5.55
JALANDHAR	88	365	15.29
KAPURTHALA	95	446	16.72
LUDHIANA	119	454	14.33
PATIALA	148	615	15.31
RUPNAGAR	53	443	23.66
SANGRUR	126	807	20.41
TOTAL	122	507	15.31

PER CAPITA BANK CREDIT TO INDUSTRY IN RS.

HARYANA

DISTRICT	1980-81	1990-91	COMPOUND GROWTH RATE
AMBALA	267	946	13.48
BHIWANI	138	291	7.75
FARIDABAD	1541	2852	6.35
GURGOAN	1787	1192	-3.97
HISSAR	80	441	18.61
JIND	42	105	9.60
KARNAL	162	1114	21.27
KURUKSHETRA	135	197	3.85
MAHENDRAGARH	48	318	20.81
ROHTAK	167	361	8.01
SIRSA	58	157	10.47
SONIPAT	184	1512	23.44
TOTAL	234	787	12.90

PUNJAB

DISTRICT	1980-81	1990-91	COMPOUND GROWTH RATE
AMRITSAR	285	951	12.81
BATHINDA	36	320	24.42
FARIDKOT	116	190	5.06
FIROZPUR	197	297	4.19
GURDASPUR	99	289	11.31
HOSIARPUR	118	633	18.29
JALANDHAR	247	1007	15.09
KAPURTHALA	390	903	8.76
LUDHIANA	503	2785	18.67
PATIALA	212	1054	17.40
RUPNAGAR	156	1893	28.35
SANGRUR	66	306	16.58
TOTAL	136	924	21.12

PER CAPITA VALUE OF AGRICULTURE PRODUCTION IN RS.

HARYANA

DISTRICT	1980-81	1990-91	COMPOUND GROWTH RATE
AMBALA	468	984	7.71
BHIWANI	288	2087	21.90
FARIDABAD	412	937	8.56
GURGOAN	475	1061	8.37
HISSAR	1005	2894	11.16
JIND	723	2339	12.46
KARNAL	903	1592	5.83
KURUKSHETRA	1285	1696	2.81
MAHENDRAGARH	375	1301	13.25
ROHTAK	516	1217	8.96
SIRSA	1022	1859	6.17
SONIPAT	582	1179	7.31
TOTAL	677	2049	11.71

PUNJAB

DISTRICT	1980-81	1990-91	COMPOUND GROWTH RATE
AMRITSAR	353	2194	20.05
BATHINDA	308	3553	27.70
FARIDKOT	505	3770	22.27
FIROZPUR	606	3955	20.63
GURDASPUR	396	1718	15.81
HOSIARPUR	680	1764	10.00
JALANDHAR	381	2244	19.40
KAPURTHALA	673	3094	16.48
LUDHIANA	435	2206	17.63
PATIALA	620	3194	17.81
RUPNAGAR	350	1518	15.80
SANGRUR	569	4308	22.44
TOTAL	1091	2725	9.59

LENGTH OF METALLED SURFACE ROAD PER 100 Sq. KM.

HARYANA

DISTRICT	1980-81	1990-91	COMPOUND GROWTH RATE
AMBALA	49.63	60.6	2.02
BHIWANI	35.99	38.17	0.59
FARIDABAD	44.74	49.43	1.00
GURGOAN	50.22	79.67	4.72
HISSAR	33.29	45.28	3.12
JIND	32.37	40.68	2.31
KARNAL	41.98	56.12	2.95
KURUKSHETRA	46.28	61.6	2.90
MAHENDRAGARH	47.34	58.38	2.12
ROHTAK	38.3	44.21	1.45
SIRSA	29.77	37.21	2.26
SONIPAT	42.88	54.3	2.39
TOTAL	39.92	49.3	2.13

PUNJAB

DISTRICT	1980-81	1990-91	COMPOUND GROWTH RATE
AMRITSAR	57.35	78.36	3.17
BATHINDA	39.29	59.51	4.24
FARIDKOT	46.4	76.24	5.09
FIROZPUR	49.54	67.58	3.15
GURDASPUR	77.35	92.15	1.77
HOSIARPUR	64.48	93.12	3.74
JALANDHAR	79.41	118.48	4.08
KAPURTHALA	65.67	96.25	3.90
LUDHIANA	66.01	155.94	8.98
PATIALA	71.65	112.32	4.60
RUPNAGAR	82.53	157.59	6.68
SANGRUR	52.92	70.12	2.85
TOTAL	90.33	107.25	1.73

PERCENTAGE OF INHABITED VILLAGE HAVING P & T FACILITY

HARYANA

DISTRICT	1980-81	1990-91	DECADAL
			CHANGE IN %
AMBALA	14.5	28.83	14.33
BHIWANI	21.23	48.27	27.04
FARIDABAD	15.41	24.4	8.99
GURGOAN	15.5	18.6	3.10
HISSAR	37.87	60.32	22.45
JIND	33.33	49.5	16.17
KARNAL	24.89	43.42	18.53
KURUKSHETRA	21.81	37.5	15.69
MAHENDRAGARH	26.75	32.6	5.85
ROHTAK	45.73	64.27	18.54
SIRSA	23.41	47.02	23.61
SONIPAT	20.59	42.34	21.75
TOTAL	25.91	37.93	12.02

PUNJAB

DISTRICT	1980-81	1990-91	DECADAL
			CHANGE IN %
AMRITSAR	35.14	40.23	5.09
BATHINDA	40.2	42.23	2.03
FARIDKOT	35.42	56.29	20.87
FIROZPUR	27.44	27.64	0.20
GURDASPUR	15.2	13.87	-1.33
HOSIARPUR	22.57	25	2.43
JALANDHAR	33	37.53	4.53
KAPURTHALA	15.65	18.8	3.15
LUDHIANA	30.24	30.91	0.67
PATIALA	13.04	18.39	5.35
RUPNAGAR	17.08	17.21	0.13
SANGRUR	30.47	33.29	2.82
TOTAL	24.73	27.52	2.79

PERCENTAGE OF INHABITED VILLAGE HAVING TELEPHONE CONNECTIO

HARYANA

DISTRICT	1980-81	1990-91	DECADAL
			CHANGE IN %
AMBALA	2.56	18.42	15.86
BHIWANI	1.91	15.47	13.56
FARIDABAD	1.21	11.35	10.14
GURGOAN	0.93	6.98	6.05
HISSAR	1.37	30.36	28.99
JIND	1.58	19.6	18.02
KARNAL	1.39	18.85	17.46
KURUKSHETRA	1.88	22.88	21.00
MAHENDRAGARH	0.99	8.1	7.11
ROHTAK	3.13	27.91	24.78
SIRSA	2.89	24.76	21.87
SONIPAT	1.97	18.55	16.58
TOTAL	1.9	17.58	15.68

PUNJAB

DISTRICT	1980-81	1990-91	DECADAL
			CHANGE IN %
AMRITSAR	1.91	9.78	7.87
BATHINDA	1.75	11.85	10.10
FARIDKOT	2.13	20.63	18.50
FIROZPUR	1.15	12.61	11.46
GURDASPUR	0.39	3.89	3.50
HOSIARPUR	0.57	3.33	2.76
JALANDHAR	1.9	12.99	11.09
KAPURTHALA	0.74	3.63	2.89
LUDHIANA	0.52	9.37	8.85
PATIALA	0.77	6.94	6.17
RUPNAGAR	0.58	4.13	3.55
SANGRUR	0.56	15.8	15.24
TOTAL	0.9	8.62	7.72

Appendix -II
SOCIAL INDICATORS

NUMBER OF PRIMARY SCHOOLS PER LAKH POPULATION

HARYANA

DISTRICT	1980-81	1990-91	CAMPOUND
			GROWTH RATE
AMBALA	55.74	25.72	-7.44
BHIWANI	36.87	32.9	-1.13
FARIDABAD	36.16	27.3	-2.77
GURGOAN	54.7	47.38	-1.43
HISSAR	24.5	19.82	-2.10
JIND	30.14	25.82	-1.54
KARNAL	37.63	16.69	-7.81
KURUKSHETRA	49.41	22.76	-7.46
MAHENDRAGARH	61.64	53.01	-1.50
ROHTAK	23.2	16.24	-3.50
SIRSA	42.18	33.69	-2.22
SONIPAT	24.05	26.45	0.96
TOTAL	40.57	32.19	-2.29

PUNJAB

DISTRICT	1980-81	1990-91	CAMPOUND
			GROWTH RATE
AMRITSAR	68.92	58.76	-1.58
BATHINDA	49.01	44.05	-1.06
FARIDKOT	52.49	44.68	-1.60
FIROZPUR	88.21	72.95	-1.88
GURDASPUR	89	78.93	-1.19
HOSHIARPUR	290.53	101.82	-9.95
JALANDHAR	68.92	63.7	-0.78
KAPURTHALA	90.67	76.45	-1.69
LUDHIANA	57.31	41.76	-3.12
PATIALA	82.63	70.46	-1.58
RUPNAGAR	112.98	107.91	-1.07
SANGRUR	59.93	49.12	-1.97
TOTAL	75.21	62.62	-1.82

NUMBER OF PUPIL PER TEACHERS IN PRIMARY SCHOOLS

HARYANA

DISTRICT	1980-81	1990-91	CAMPOUND GROWTH RATE
AMBALA	40	48	1.84
BHIWANI	44	48	0.87
FARIDABAD	36	47	2.70
GURGOAN	41	48	1.59
HISSAR	43	46	0.68
JIND	39	47	1.88
KARNAL	42	43	0.24
KURUKSHETRA	48	51	0.61
MAHENDRAGARH	45	46	0.22
ROHTAK	38	44	1.48
SIRSA	44	45	0.22
SONIPAT	40	46	1.41
TOTAL	41	44	0.71

PUNJAB

DISTRICT	1980-81	1990-91	CAMPOUND GROWTH RATE
AMRITSAR	37	39	0.53
BATHINDA	60	47	-2.41
FARIDKOT	38	45	1.71
FIROZPUR	46	42	-0.91
GURDASPUR	40	33	-1.91
HOSHIARPUR	63	33	-6.26
JALANDHAR	37	37	0.00
KAPURTHALA	42	33	-2.38
LUDHIANA	36	37	0.27
PATIALA	50	39	-2.45
RUPNAGAR	34	33	-0.30
SANGRUR	48	44	-0.87
TOTAL	42	39	-0.74

NUMBER OF MIDDLE / HIGHER SCHOOLS PER LAKH POPULATION

HARYANA

DISTRICT	1980-81	1990-91	CAMPOUND
			GROWTH RATE
AMBALA	5.71	6.12	0.70
BHIWANI	8.66	11.12	2.53
FARIDABAD	4.78	6.05	2.38
GURGOAN	5.7	8.54	4.13
HISSAR	9.55	9.98	0.44
JIND	6.41	9.58	4.10
KARNAL	5.35	6.87	2.53
KURUKSHETRA	5.18	6.56	2.39
MAHENDRAGARH	9.99	10.52	0.52
ROHTAK	6.07	6.24	0.28
SIRSA	7.68	11.68	4.28
SONIPAT	8.17	11.79	3.74
TOTAL	6.98	8.48	1.97

PUNJAB

DISTRICT	1980-81	1990-91	CAMPOUND
			GROWTH RATE
AMRITSAR	7.5	8.46	1.21
BATHINDA	8.04	9.85	2.05
FARIDKOT	7.86	17.01	8.03
FIROZPUR	10.23	11.37	1.06
GURDASPUR	8.72	10.75	2.11
HOSHIARPUR	9.71	11.75	1.93
JALANDHAR	9.6	10.92	1.30
KAPURTHALA	11.75	13.69	1.54
LUDHIANA	6.97	7.72	1.03
PATIALA	8.38	9.42	1.18
RUPNAGAR	9.87	13.77	3.39
SANGRUR	7.45	8.05	0.78
TOTAL	8.62	13.89	4.89

NUMBER OF PUPIL PER TEACHERS IN MIDDLE / HIGHER SCHOOLS

HARYANA

DISTRICT	1980-81	1990-91	CAMPOUND
			GROWTH RATE
AMBALA	24	31	2.59
BHIWANI	24	32	2.92
FARIDABAD	23	26	1.23
GURGOAN	25	27	0.77
HISSAR	22	24	0.87
JIND	25	25	0.00
KARNAL	26	31	1.77
KURUKSHETRA	24	30	2.26
MAHENDRAGARH	25	29	1.50
ROHTAK	26	29	1.10
SIRSA	23	24	0.43
SONIPAT	23	36	4.58
TOTAL	25	28	1.14

PUNJAB

DISTRICT	1980-81	1990-91	CAMPOUND
			GROWTH RATE
AMRITSAR	29	29	0.00
BATHINDA	32	27	-1.68
FARIDKOT	33	25	-2.74
FIROZPUR	31	24	-2.53
GURDASPUR	32	33	0.31
HOSHIARPUR	28	25	-1.13
JALANDHAR	31	39	2.32
KAPURTHALA	27	24	-1.17
LUDHIANA	29	26	-1.09
PATIALA	28	29	0.35
RUPNAGAR	26	24	-0.80
SANGRUR	31	25	-2.13
TOTAL	30	27	-1.05

PERCENTAGE OF INHABITED VILLAGES HAVING MEDICAL FACILITY

HARYANA

DISTRICT	1980-81	1990-91	DECADIAL
			CHANGE IN %
AMBALA	15.97	33.33	17.36
BHIWANI	14.17	48.04	33.87
FARIDABAD	17.12	35.27	18.15
GURGOAN	14.68	26.6	11.92
HISSAR	37.39	65.48	28.09
JIND	36	76.74	40.74
KARNAL	28.48	55.89	27.41
KURUKSHETRA	15.39	46.75	31.36
MAHENDRAGARH	23.25	40.44	17.19
ROHTAK	36.53	69.13	32.60
SIRSA	21.51	42.32	20.81
SONIPAT	39.41	60.48	21.07
TOTAL	25.49	45.78	20.29

PUNJAB

DISTRICT	1980-81	1990-91	DECADIAL
			CHANGE IN %
AMRITSAR	11.94	29.51	17.57
BATHINDA	12.43	57.74	45.31
FARIDKOT	10.81	50.7	39.89
FIROZPUR	8.23	23.97	15.74
GURDASPUR	7.27	21.78	14.51
HOSHIARPUR	7.4	29.29	21.89
JALANDHAR	10.92	34.71	23.79
KAPURTHALA	10.61	29.49	18.88
LUDHIANA	13.62	32.26	18.64
PATIALA	6.97	25.26	18.29
RUPNAGAR	9.54	30.39	20.85
SANGRUR	10.72	43.86	33.14
TOTAL	9.26	31.05	21.79

NUMBER OF PRIMARY HEALTH CENTRES PER LAKH POPULATION

HARYANA

DISTRICT	1980-81	1990-91	CAMPOUND
			GROWTH RATE
AMBALA	0.57	1.85	12.49
BHIWANI	0.65	2.42	14.05
FARIDABAD	0.6	1.55	9.96
GURGOAN	0.82	2.25	10.62
HISSAR	0.74	2.99	14.99
JIND	0.75	2.71	13.71
KARNAL	0.68	1.52	8.38
KURUKSHETRA	0.53	1.57	11.47
MAHENDRAGARH	0.94	1.76	6.47
ROHTAK	0.75	2.16	11.16
SIRSA	0.57	2.61	16.43
SONIPAT	0.71	3.64	17.76
TOTAL	0.69	2.28	12.70

PUNJAB

DISTRICT	1980-81	1990-91	CAMPOUND
			GROWTH RATE
AMRITSAR	0.78	2.23	11.08
BATHINDA	0.69	1.76	9.82
FARIDKOT	0.77	3	14.57
FIROZPUR	0.69	2.41	13.32
GURDASPUR	0.86	2.72	12.20
HOSHIARPUR	0.96	3.11	12.47
JALANDHAR	0.69	2.46	13.56
KAPURTHALA	1.1	2.99	10.52
LUDHIANA	0.6	1.75	11.30
PATIALA	0.7	2.36	12.92
RUPNAGAR	0.98	3.02	11.91
SANGRUR	0.78	2.62	12.88
TOTAL	3.63	9.41	9.99

NUMBER OF HOSPITAL AND DISPENSARY BEDS PER LAKH POPULATION

HARYANA

DISTRICT	1980-81	1990-91	CAMPOUND
			GROWTH RATE
AMBALA	73	54	-2.97
BHIWANI	190	127	-3.95
FARIDABAD	72	50	-3.58
GURGOAN	35	37	0.56
HISSAR	87	87	0.00
JIND	52	76	3.87
KARNAL	37	34	-0.84
KURUKSHETRA	21	26	2.16
MAHENDRAGARH	37	30	-2.08
ROHTAK	135	109	-2.12
SIRSA	35	44	2.31
SONIPAT	27	40	4.01
TOTAL	71	68	-0.43

PUNJAB

DISTRICT	1980-81	1990-91	CAMPOUND
			GROWTH RATE
AMRITSAR	86	186	8.02
BATHINDA	98	102	0.40
FARIDKOT	96	112	1.55
FIROZPUR	108	112	0.36
GURDASPUR	86	102	1.72
HOSHIARPUR	100	105	0.49
JALANDHAR	121	133	0.95
KAPURTHALA	109	123	1.22
LUDHIANA	156	165	0.56
PATIALA	158	160	0.13
RUPNAGAR	101	109	0.77
SANGRUR	86	98	1.31
TOTAL	125	122	-0.24

PERCENTAGE OF HOUSEHOLD HAVING SAFE DRINKING WATER AND TOILAT FACILITY

HARYANA

DISTRICT	1980-81	1990-91	DECADIAL
			CHANGE IN %
AMBALA	26.03	32.16	6.13
BHIWANI	7.14	11.97	4.83
FARIDABAD	18.31	33.23	14.92
GURGOAN	11.07	17.22	6.15
HISSAR	10.84	19.04	8.20
JIND	7.25	10.05	2.80
KARNAL	16.89	24.97	8.08
KURUKSHETRA	17.11	22.67	5.56
MAHENDRAGARH	14.17	15.25	1.08
ROHTAK	10.78	14.01	3.23
SIRSA	28.19	44.57	16.38
SONIPAT	12.75	17.7	4.95
TOTAL	13.53	20.96	7.43

PUNJAB

DISTRICT	1980-81	1990-91	DECADIAL
			CHANGE IN %
AMRITSAR	19.38	27.06	7.68
BATHINDA	27.42	43.85	16.43
FARIDKOT	26.29	42.21	15.92
FIROZPUR	18.51	26.41	7.90
GURDASPUR	10.81	16.79	5.98
HOSHIARPUR	10.32	15.78	5.46
JALANDHAR	23.49	34.41	10.92
KAPURTHALA	17.78	25.46	7.68
LUDHIANA	36.57	51.67	15.10
PATIALA	16.28	29.54	13.26
RUPNAGAR	17.05	29.09	12.04
SANGRUR	15.37	23.15	7.78
TOTAL	19.89	31.37	11.48

Appendix - III

DEMOGRAPHIC INDICATORS

PERCENTAGE OF LITERATES TO TOTAL POPULATION
(excluding age group 0-6)
HARYANA

DISTRICT	1980-81	1990-91	DECADAL
			CHANGE IN %
AMBALA	44.62	52.75	8.13
BHIWANI	33.07	41.18	8.11
FARIDABAD	39.19	47.49	8.30
GURGOAN	35.23	42.91	7.68
HISSAR	29.97	36.37	6.40
JIND	26.18	31.87	5.69
KARNAL	36.77	44.62	7.85
KURUKSHETRA	38.4	39.18	0.78
MAHENDRAGAR	38.61	47.66	9.05
ROHTAK	42.55	51.62	9.07
SIRSA	26.87	36.36	9.49
SONIPAT	40.85	49.07	8.22
TOTAL	**36.14**	**43.89**	**7.75**

PUNJAB

DISTRICT	1980-81	1990-91	DECADAL
			CHANGE IN %
AMRITSAR	41.05	58.09	3.53
BATHINDA	27.72	43.03	4.50
FARIDKOT	33.58	49.42	3.94
FIROZPUR	32.29	48.01	4.05
GURDASPUR	43.49	61.84	3.58
HOSIARPUR	56.33	70.74	2.30
JALANDHAR	49.18	68.45	3.36
KAPURTHALA	44.85	63.31	3.51
LUDHIANA	50.6	67.35	2.90
PATIALA	40.45	58.62	3.78
RUPNAGAR	48.08	68.14	3.55
SANGRUR	29.6	46.16	4.54
TOTAL	**40.86**	**58.51**	**3.66**

PERCENTAGE OF FEMALE LITERATES TO TOTAL POPULATION
(excluding age group 0-6)
HARYANA

DISTRICT	1980-81	1990-91	DECADAL
			CHANGE IN %
AMBALA	34.97	56.62	21.65
BHIWANI	16.3	35.1	18.80
FARIDABAD	22.93	42.12	19.19
GURGOAN	20.02	34.94	14.92
HISSAR	16.71	32.12	15.41
JIND	12.24	30.12	17.88
KARNAL	24.49	43.54	19.05
KURUKSHETRA	21.56	46.94	25.38
MAHENDRAGAR	20.44	36.75	16.31
ROHTAK	26.82	45.74	18.92
SIRSA	18.88	34.02	15.14
SONIPAT	25.32	48.27	22.95
TOTAL	22.27	40.47	18.20

PUNJAB

DISTRICT	1980-81	1990-91	DECADAL
			CHANGE IN %
AMRITSAR	34.4	50.1	15.70
BATHINDA	20.29	34.51	14.22
FARIDKOT	26.87	41.5	14.63
FIROZPUR	24.17	38.11	13.94
GURDASPUR	38.99	53.33	14.34
HOSIARPUR	41.54	60.1	18.56
JALANDHAR	42.46	61.33	18.87
KAPURTHALA	38.27	55.83	17.56
LUDHIANA	44.15	61.23	17.08
PATIALA	33.7	50.33	16.63
RUPNAGAR	38.94	58.54	19.60
SANGRUR	22.68	37.86	15.18
TOTAL	33.69	65.66	31.97

SEX RATIO (NUMBER OF FEMAELS PER 1000 MAELS)

HARYANA

DISTRICT	1980-81	1990-91	DECADAL CHANGE IN YEARS
AMBALA	870	884	14.00
BHIWANI	899	880	-19.00
FARIDABAD	811	828	17.00
GURGOAN	880	871	-9.00
HISSAR	867	861	-6.00
JIND	856	838	-18.00
KARNAL	853	859	6.00
KURUKSHETRA	860	867	7.00
MAHENDRAGAR	932	917	-15.00
ROHTAK	879	851	-28.00
SIRSA	877	885	8.00
SONIPAT	860	841	-19.00
TOTAL	870	885	15.00

PUNJAB

DISTRICT	1980-81	1990-91	DECADAL CHANGE IN YEARS
AMRITSAR	871	873	
BATHINDA	864	880	16.00
FARIDKOT	882	882	0.00
FIROZPUR	884	894	10.00
GURDASPUR	917	908	-9.00
HOSIARPUR	915	919	4.00
JALANDHAR	893	899	6.00
KAPURTHALA	898	896	-2.00
LUDHIANA	859	844	-15.00
PATIALA	863	880	17.00
RUPNAGAR	861	870	9.00
SANGRUR	860	870	10.00
TOTAL	879	882	3.00

URBAN POPULATION AS PERCENTAGE TO TOTAL POPULATION

HARYANA

DISTRICT	1980-81	1990-91	DECADAL CHANGE IN %
AMBALA	32.79	35.54	2.75
BHIWANI	15.89	22.91	7.02
FARIDABAD	41.44	48.57	7.13
GURGOAN	19.58	23.91	4.33
HISSAR	19.38	22	2.62
JIND	15.14	17.19	2.05
KARNAL	26.16	35.96	9.80
KURUKSHETRA	20.72	25.76	5.04
MAHENDRAGAR	12.16	13.41	1.25
ROHTAK	19.28	29.9	10.62
SIRSA	20.44	25.37	4.93
SONIPAT	21.2	24.44	3.24
TOTAL	21.88	24.63	2.75

PUNJAB

DISTRICT	1980-81	1990-91	DECADAL CHANGE IN %
AMRITSAR	32.97	34.09	1.12
BATHINDA	22.68	22.91	0.23
FARIDKOT	23.87	25.41	1.54
FIROZPUR	22.85	23.91	1.06
GURDASPUR	21.69	22	0.31
HOSIARPUR	14.42	15.27	0.85
JALANDHAR	35.32	35.96	0.64
KAPURTHALA	29.97	25.76	-4.21
LUDHIANA	42.04	50.28	8.24
PATIALA	29.59	29.9	0.31
RUPNAGAR	21.59	25.37	3.78
SANGRUR	22.81	24.44	1.63
TOTAL	27.68	29.55	1.87

PERCENTAGE OF WORKERS OUT OF TOTAL POPULATION

HARYANA

DISTRICT	1980-81	1990-91	DECADAL CHANGE IN %
AMBALA	46.87	47.49	0.62
BHIWANI	50.2	50.51	0.31
FARIDABAD	50.53	50.98	0.45
GURGOAN	48.37	49.13	0.76
HISSAR	50.94	52.8	1.86
JIND	50.17	50.27	0.10
KARNAL	48.9	49.01	0.11
KURUKSHETRA	47.81	48.76	0.95
MAHENDRAGAR	41.76	43.81	2.05
ROHTAK	46.54	49.8	3.26
SIRSA	50.39	51.79	1.40
SONIPAT	48.24	49.31	1.07
TOTAL	48.36	49.47	1.11

PUNJAB

DISTRICT	1980-81	1990-91	DECADAL CHANGE IN %
AMRITSAR	47.06	48.96	1.90
BATHINDA	48.86	50.71	1.85
FARIDKOT	48.06	51.71	3.65
FIROZPUR	49.01	52.47	3.46
GURDASPUR	43.31	46.16	2.85
HOSIARPUR	41.79	45.21	3.42
JALANDHAR	44.79	46.93	2.14
KAPURTHALA	45.78	47.38	1.60
LUDHIANA	47.19	50.17	2.98
PATIALA	47.34	48.58	1.24
RUPNAGAR	45.47	46.91	1.44
SANGRUR	48.75	48.97	0.22
TOTAL	46.54	48.68	2.14

LIFE EXPECTANCY

HARYANA

DISTRICT	1980-81	1990-91	DECADAL
			CHANGE IN YEARS
AMBALA	53.2	68.6	15.40
BHIWANI	56.4	69.4	13.00
FARIDABAD	53.6	68.4	14.80
GURGOAN	49.6	61.2	11.60
HISSAR	53.6	68.8	15.20
JIND	47.8	70.4	22.60
KARNAL	53	70.6	17.60
KURUKSHETRA	49.2	74	24.80
MAHENDRAGAR	54.8	64.8	10.00
ROHTAK	54	70.8	16.80
SIRSA	58.4	66	7.60
SONIPAT	53.3	63.2	9.90
TOTAL	52.2	69.2	17.00

PUNJAB

DISTRICT	1980-81	1990-91	DECADAL
			CHANGE IN YEARS
AMRITSAR	51.4	70.6	19.20
BATHINDA	49	64.2	15.20
FARIDKOT	56.8	69	12.20
FIROZPUR	51	67	16.00
GURDASPUR	44.4	63.4	19.00
HOSIARPUR	48.2	63.6	15.40
JALANDHAR	53.2	69	15.80
KAPURTHALA	56	59	3.00
LUDHIANA	53	71	18.00
PATIALA	59	66.2	7.20
RUPNAGAR	52.4	66.8	14.40
SANGRUR	49.2	69	19.80
TOTAL	52	63.8	11.80