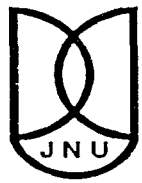
POPULATION AND DEVELOPMENT INTERFACE: A DISTRICT WISE COMPARATIVE ANALYSIS OF PUNJAB AND ANDHRA PRADESH (2001)

Dissertation submitted to the Jawaharlal Nehru University in partial fulfilment of the requirement for the award of the degree of

MASTER OF PHILOSOPHY

Submitted by

ATUL KUMAR



CENTRE FOR THE STUDY OF REGIONAL DEVELOPMENT
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CERTIFICATE

I, **ATUL KUMAR**, certify that the dissertation entitled **"POPULATION AND DEVELOPMENT INTERFACE: A DISTRICTWISE COMPARATIVE ANALYSIS OF PUNJAB AND ANDHRA PRADESH (2001)"** for the Degree of **MASTER OF PHILOSOPHY** is my bonafide work and may be placed before the examiners for evaluation

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Atul Kumar

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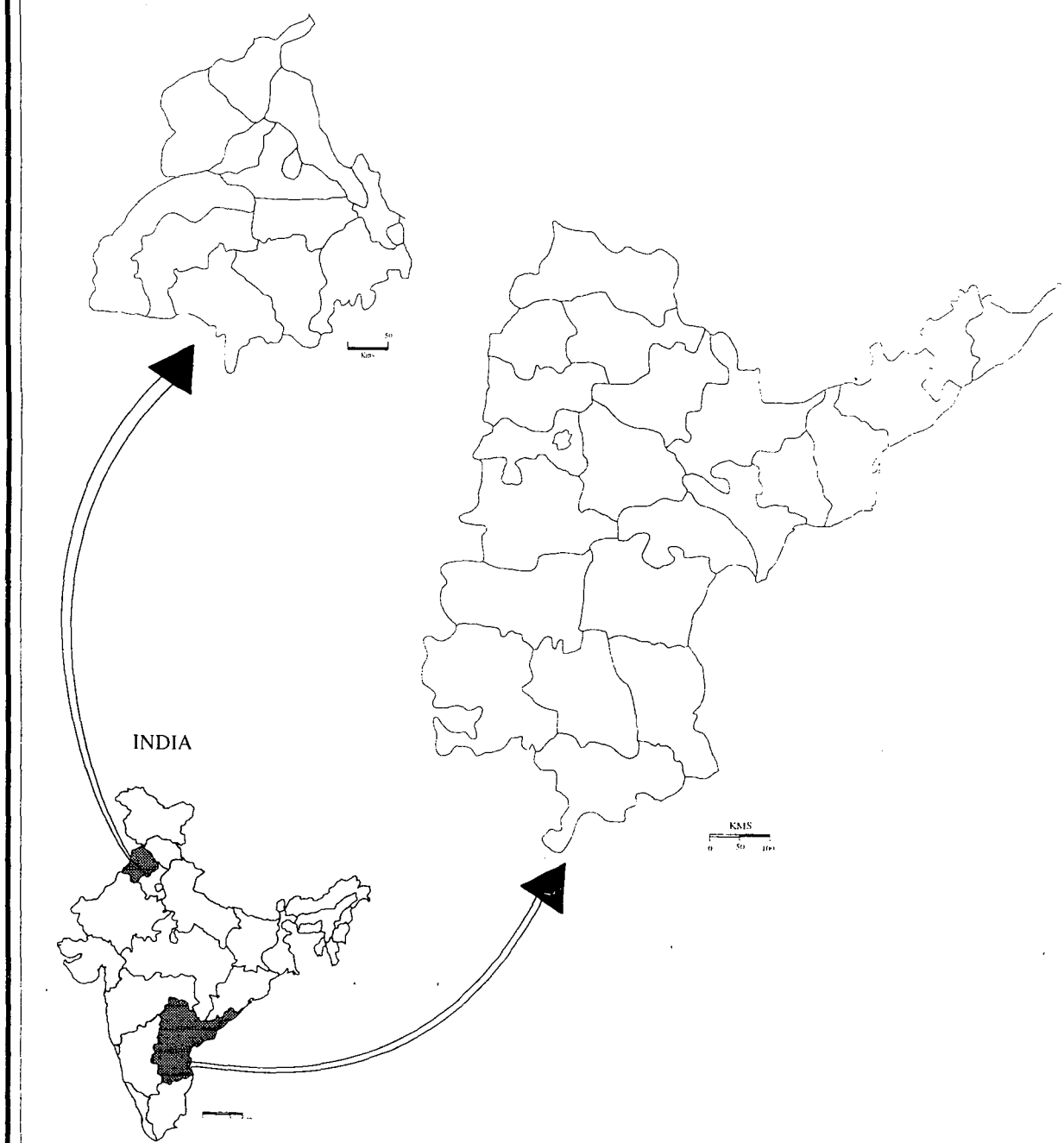

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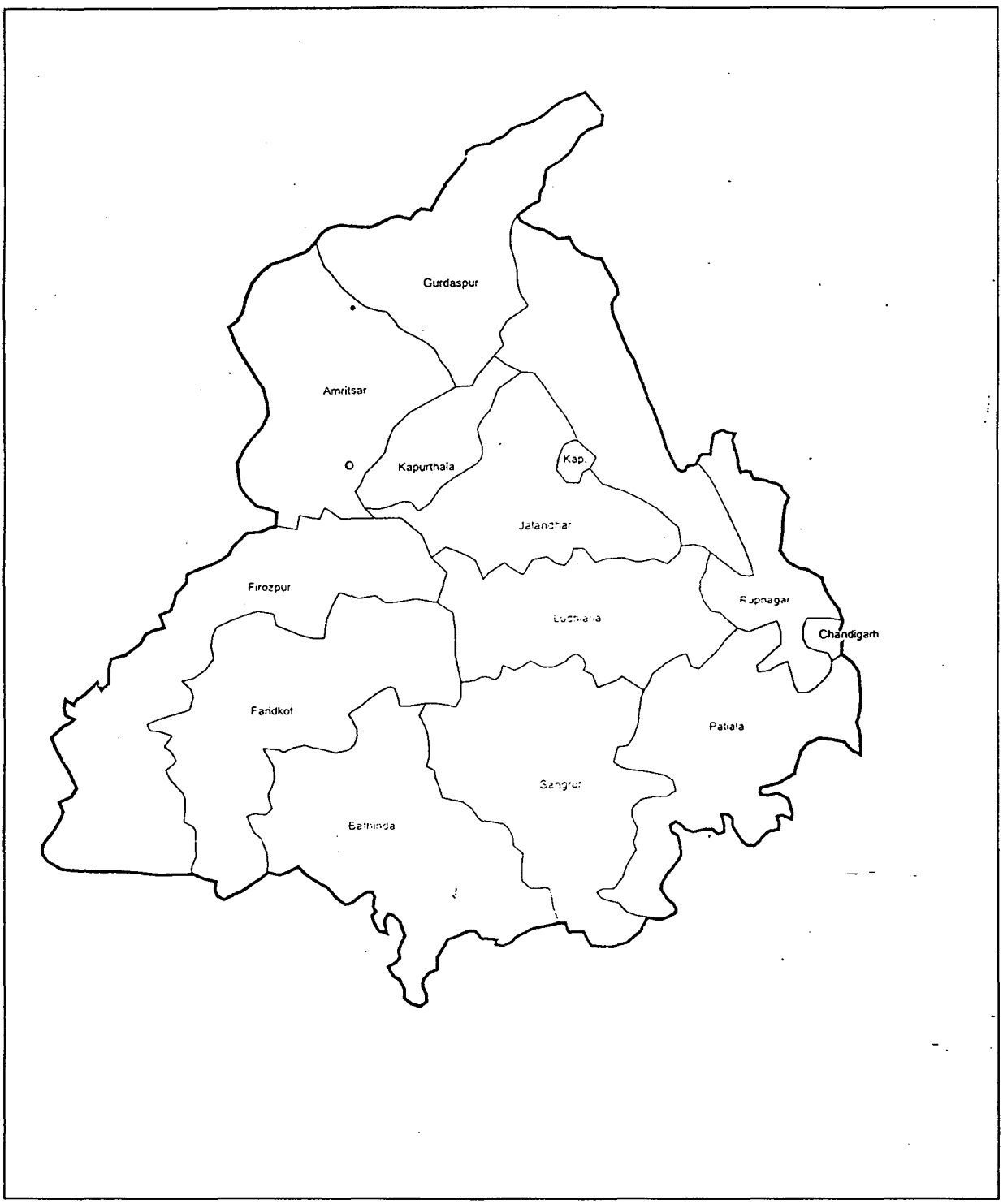
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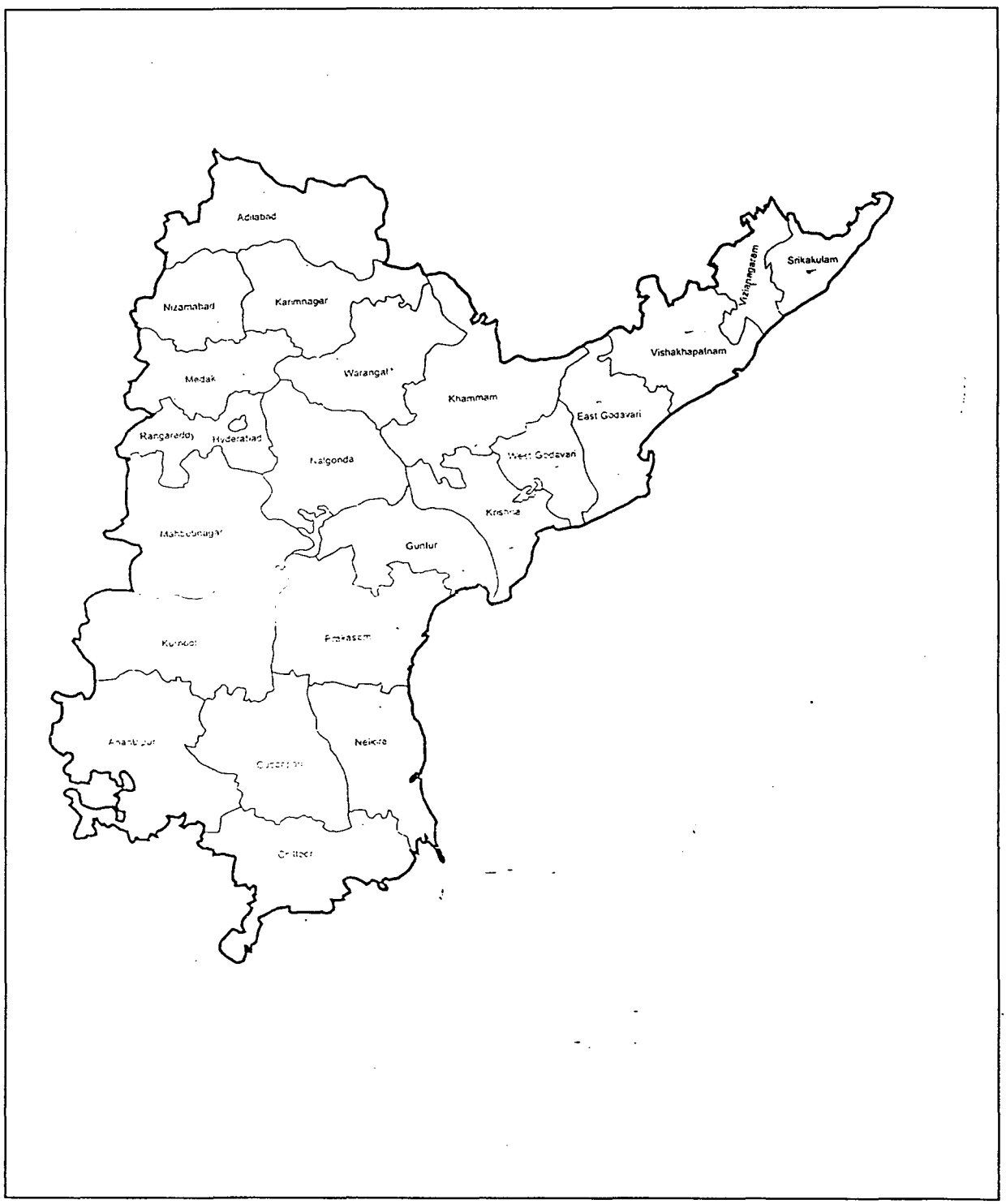

CHAPTER-I

Introduction:

I.1. Statement of Problem:

Population growth is intrinsically linked and irrevocably intertwined with the developmental processes. It is an essential strand in the contemporary economic system. From the past to present time, certain development indicators have been given a different emphasis by individuals belonging to different disciplines on the basis of their professional orientation. Similarly, the concept of development has been normally conceived as a major domain of economist, because its definition hitherto has high lightened mostly the economic components at the expense of other related aspects of society.

The meaning of development has evolved through many successive stages. Earlier, development was merely conceived as economic growth. Before, second world war, the development economists, such as Rosentein-Roden, Nurkse; Lewis, Kuznets and Mahalnobis's had concentrated their work on PCI. Post 1970s, growth with equity become a major approach in making people better off.

In the current scenario of population explosion, its relationship without economic development assumes a serious dimension. It is the impact of population on development that is causing a grave concern to the human community. Most of the rapidly grown populated countries are having low standard of living; population growth and levels of development are reciprocal to each other.

In this study, an attempt has been made to identify the interrelationship between indicators of population dynamics and socio-economic development by taking distinctive data of Punjab and Andhra Pradesh.

Population influences social and economic development through its effect upon the basic factors of production such as natural resources, labor, capital and level of technology. Similarly, development affects population dynamics such as fertility, morality and migration, which affects the size, growth, age-sex composition etc. and characterizes the population, are determined by the social and economic development

As we all are concerned about the problem of Third World countries. They are intensely fighting with poverty, very high rate of population growth, low growth rates of GDP, low rate of industrial and agricultural growth. Though development accompanied with infrastructural facilities. Despite having much dependency on agriculture, also suffering with high rate of unemployment and inequitable distribution of income. The main target of these countries is to eradicate the problems of poverty and unemployment. India is a population giant as second most populous country in the world after china, with very high population growth rate and having very large population base. Despite 56 years of independence and development the desired goals to eradicate poverty and unemployment has not been achieved. Over this period, population has increased rapidly, but the goal of economic growth, social and infrastructural development had not be achieved. Since widespread famines of early 1940s, it was felt through Bhor committee report (1943) that without checking population with desirable limit based upon levels of development; it is very difficult to eradicate poverty and unemployment and so the suffering will get pace in the coming future. But since then, despite all the concentrated effects to boost the process of socio-development, the desired level of living could not be achieved. As rapidly growing population diverts the major part of national savings towards the basic amenities for the increasing population which hampered the investment and capital formation. Therefore, it seems very obvious that population growth has affected the development processes over the years directly or indirectly in India.

The interrelation between the indicators of population dynamics and social, economic and other levels of development is circular. They are interdependent to each other and formed the vicious circle, which led the mass to suffer along the country as whole.[1] The impact of indicators of population dynamics on social, economic development has been examined for the obvious reasons of the importance of population trends, in the guiding process of soc and economic development though this would no way hamper the importance of the impact of social and economic development on population growth, which not in the preview of the present study.

[1] Becker, Gary S, Population and economic growth, American economic review 89(2), 1999 (May), pp. 145-49.

I.2. Scope of the study:

Since early times, scholars, thinkers, realise the interface between population and development definitely the points of view have differed, especially when they related to the size and growth of population. A large and rapidly growing population has sometimes being considered to be desirable as a source of national wealth and strength. It is essentially and useful factor underlying economic development at different time. It has been viewed as pivotal factor; either may be political or economical or any other purpose.

Since Malthus, population factor dominates in terms of thinking about development process and have direct impact on the social and economic development. However, the nature of relationship varies from region to region. So, it is very important to analyze the interrelation between population and social, economic development of the region. Which must be highly assisting in terms of execution of demographic and economic planning of a region to uplift the standard of living at desired level.

Despite independence the third world (post second world war) remains the part of the vicious circle; facing tough struggle between population and development problems. Where population characteristics have typical reciprocal effects on its social, economic as well infrastructural developments[2]. So higher the population growth put the demographic, social, economic situation from bad to worse, led further backwardness. For any region, it must be their first goal to come out of the vicious circle. This is not possible unless their will be a complete understanding of the relationship between the indicator of development and population.

Both Punjab and Andhra Pradesh are the two important states of India in terms of population as well the economic and infrastructural development. Punjab inters its economic and infrastructural growth since 1970's but some degradation in mid 1980s. Where Andhra Pradesh entered its economic and other infrastructural levels development to contain region in mid 1990s. Both of the state is having high population growth rate where Punjab has little higher, needs more emphasis to go for research how the population and development are interlinked. Where Andhra Pradesh

[2] Cole, Ansley J. & Haider Naqui, Population Growth and Economic Development: Cole and Hoover reexamined after 25 years IASSI Quality, 15(3), Jan-Mar(97) pp. 50-60.

has more levels of demographic development without much economic and infrastructural development.

Therefore, in this study, an attempt has been made to understand the complex process of relationship between demographic dynamics and social, economic as well infrastructural development using distinctive data of both Punjab and Andhra Pradesh for the years 2001.

I.3. Objectives of the Study

In the present study, an attempt has been made to analyse the relationship between the indicators of population dynamics and social ,economic and infrastructural development. For this purpose the following set of objectives has been set:-

a. To study the spatial variations among the population variables viz., population growth rate, CBR, TFR and urban population.

b. To identify the levels of social, economic development and other civic amenities.

c. To identify the various forms of inter-relationship between the indicators of population dynamics and the indicators of social, economic and other infrastructural developments in Punjab and Andhra Pradesh.

CHAPTER-II

II.1. Research Design

II.1.i. Choice of the Study region

Punjab and Andhra Pradesh are the two very important place in terms economic as well infrastructural development. Punjab, which has significant growth since late 1960s, due to the Green Revolution, accompanied by Agro-based industries and infrastructural development. But in 1980s faced terrorism, hampered its economic and infrastructural growth in many extent in 1990s. Punjab plays a dominant role in Indian economy especially in terms of food stems production, provide India to a large extent a self-reliant nation in agricultural production. Where Andhra Pradesh facing lopsided developments, having many sub-region of it remains backward, led regional disparity significantly prevalent. Some districts have developed, where others remains backwards.

These population and other developmental aspects compelled me to select this topic and observe the relationship between the demographic variable and the variable of social and economic development. By taking Punjab and Andhra Pradesh as study area, here attempts have been made to analyze the population and its dynamic characterics with the social, economical and other infrastructural disparity as well the interrelationship among the population characteristics on the social, economic and infrastructural development of these states.

Detailed analysis at district level used here. All indicators has been attempted in order to make a meaningful study.

II.2. Selection of variables:

The most crucial step in this exercise is the selection of variable, which could catch the complex process of social and economic development. History is a flux of events and society is webs of several inter-related activities, which cannot be comprehend by single variable. There is an attempt to understand the socio-economic development of these regions. Few indicators have been chosen to measure the existing levels and potentialities of development of each sub-region. These and indicators have been classified into six sets, depicting deferent aspects of multi-

dimensional development process. Some of these are, perhaps, not the most suitable indicators articulating the concerned phenomenon; but they are possibly the most relevant ones that could equalize out of the extremely inadequate database.

The spatial unit analysis is district.

II.2. i. Choice of the variables:

There are three groups of indicators reflecting demographic, social, economical and infrastructural characteristics of the states.

For selecting the indicators for giving empirical contents to various analytical concepts, there are two types of variables, viz., demographic variables as dependent variable and social, economic and infrastructural variable as independent variable. The maximum possible variables are selected keeping in view the data constraints and the purpose of study. The variables are given below: -

II.2.i.a Dependent variables: here there are four important population variable are taken, which are as follows.

(i) Population growth rate:

It is argued that this variable used to describe the total increase of population i.e. percent decadal growth in the absolute population of base year. It has been taken for the internal of time 1991-2001. The population size of the region has been found to have a position correlation with availability of general infrastructural and of human resource. It reflects the carrying capacity of the land. The previous hypo is that higher the growth late population reflects a higher capacity of land therein.

(ii) Crude Birth rates –(2001) atio of the total registered live birth in same specified year, in a particular area to the total mid-year population X 1000.

It is an important measures of fertility, for it, directly points to the contribution of fertility to the growth rate of population more importantly to indicate the fertility levels of society.

(iii). Total Fertility Rate: it indicates the total no. of children a women conceive of age 15-49 years. It is directly linked to the no. of family member. There is very high negative relationship between higher family members and development

of family or the region. Here the TFR data has been taken district wise could indicate the levels of development and family size or no of children.

(iv) Urban population:

It may be argued that this indicator conventionally used to describe the level of urbanization i.e. % of Urban-population to the total population. It is not the levels of urban growth, which distinguishes urbanization from accretion, but differing nature of economic variability in the regional and intra- regional context.[3] The conceptual frame, within which the urban accretion is to be measured, being quantitative different, the indicator that would reflect the complexity of phenomenon are based to be different to. It indicates the change in its of economic leads generally, to weakening of its agrarian base, the expansion of urban centers is contingent upon the exploitation of the hinterland, which becomes increasingly paraphrased through powerful 'backwash effect', on evaluating the urban process, their impact on the rural base of the region, which supports the superstructure must be taken into consideration with growing cone of population in a few urban centers, leads the problem of overcrowding, having a dysfunctional character; it becomes difficult to provide proper housing amenities, educational and medical attention and above all, an acceptable urban environment.

II.2.ii. Independant variables -

II.2.ii.i. Indicators of Social development:-

a) Sex ratio (0-6 years age group).

b) Literacy Rate.

c) Change in female literacy rates.

d) Female literacy Rate.

e) Change in female workforce participation (1991-2001).

These indicators reflect indirectly the status of women. In this context, female literacy may be taken as rough measure of the degree to which the women folk are

[3] Kundu, A. and Gupta, S. (1996): Migration, urbanization and regional inequality, EPW, Dec.28, Vol. XXXI, No. 2 pp. 3391-3398.

bound by tradition and superstition.[4] Where as indicator (c), (d) and (e) indicates the increase in female literacy rates, i.e., how many of female joined to this group. This is more important than the previous two, reflects increase of economic value of women in the society, degree of masculine bias in the last decade and providing the autonomy to women. It is the major indicator showing the development of society.

(ii) Indicators of infrastructural development:

An economy committed to the objective of a "Socialist pattern of society", inter-district comparison remain incomplete without due consideration of the distribution of social and economic overheads like medical, postal, educational, transport and communications facilities in the geographical space[5]. For development, it can be argued, needed to an increase "availability of a wide range of services and alternatives in terms of types of work, housing, food, clothing, educational facilities, medical facilities, modes of travel, voluntary organization, types of people, an attempt has been made to construct the relevant indicator.

The following indicators has been chosen to describe the social and economic amenities:-

a) Road length per 100 sq. km. - This provide the rationale for the using area in denominator; as has been argued. This sets of indicators deals with the connectivity and accessibilities to each district. Communication system is both an index and an agent of change in total social systems.[6] The variable of this set, therefore, helps us to understand the levels of development of a transparent network, which is prerequisite for development. The improvement of internal accessibility through expansion of transportation network is a critical factor for the socio-economic development of under development areas.

(b) Number of Post offices per lakh population:-

(c) Telephone connections per 100 persons:-

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[4] Boserup, E.1970."Women's Role in Economic Development ".London, Allen and Unwin.

[5] Ehlers, Eskart, Population growth; Resource management and well adapted landuse in the Bagrot/Karakoram, Applied Geography and Development,(48), 1996, pp. 7-28.

[6] Kundu,A. (1985), Analysis of structural change in the Indian economy – Certain Avoidable Anomalies in Usages of the population Census Data , Population Geography ,Vol. 7 No. 1 and 2, June-dec ,pp. 66-82.

Constructing these variables for the post and telecommunications facilities, the focus will be more unto the backward districts rather than developed areas, in the view of the relative deprivation of the former. The more developed areas, by and large, tend to have these facilities. So, these indicators are directly linked with the development process and with the capacity to radiate impulse of growth to the surrounding territories. Pressure of these services, made the service centers for the surrounding villages and may lead to development of the region as a whole.

Health infrastructure: The following two indicators have been chosen to describe the availability of medical facilities in the districts:-

(d) Number of primary Health centers per lakh population

(e) Number of Hospitals and dispensary bed per lakh population

The indicators has been adopted to examine the extent to which medical facilities has been extended to the districts. The number of beds per lakh population gives a rough measure of indoor medical facilities.

Educational infrastructure: As regards educational development in the region, the following two indicators have been thought to be appropriate in terms of qualitative and quantitative analysis as well to constrain of data :-

(f) Number of primary schools per lakh population

(g) Number of Middle and higher schools per lakh population

On constructing these indicators, the emphasis is laid upon the availability of the infrastructure to the general population to their respective districts in general. For the attainment of education up to high school level, generally associated with the least distance travel as so, no of primary, middle high school does provide the availability of infrastructure to the population

(iii) Levels of banking assistance:

The rationale for selecting the indicator is to examine the extent of banking facilities extended how much the high pace of development has generated enormous demand for capital formation, especially in developed areas, for construction urban

infrastructure including public amenities and housing. [7] It is directly associated with large scale investments, supply of improved inputs, creation of socio-economic imports and rapid change in the institutional frame especially to backward regions. Number of branches, deposits and the credit facility having direct positive relation with the development process.

The following indicators have been chosen to indicate facilities of banking.

(a) Amount of deposits in Rs. Per capita.

(b) Credit in Rs. Per capita.

(c) Credit to agriculture in Rs. Per capita.

(iv) Aspects of Agricultural development:

This set of indicators pertains to the levels and potentialities of agriculture growth. There were substantial displacements of workforce in the traditional agriculture sectors, who are forced to seek re-absorption either in non-traditional sectors in the rural economy or to migrate to the urban-centers.[8] There may be the urban growth in relation to the structural changes within the agriculture technology input-output relation with the size of land holding as a major variable with the existing economic infrastructure and the institutional frame. The following indicators pertaining to the agriculture development has been examined.

(a) Gross sown Area (% of R.A.)- It is the index of agriculture development Sen (1962) and Rudra (1968), studies the interdependent between productivity and size of holding, used the figure for gross area. It is appropriate since the alternative formation tends to eliminate the effects of higher inputs (including labor), irrigation and cropping pattern multi collinear with the multiple cropping.

(b) Gross irrigated area (% of Gross cropped area)- The process of modernization generated though urban and economic development generally leads to break through in agriculture. Large-scale investment, supply of improved inputs creation of socio-economic imports and change in institutional frame. It indicates the market orientation of agriculture in the region.

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[7] Kundu, A. (1980): Measurement of urban processes: A Study in Regionalization, popular publication, Bombay, p.30.

[8] Ghosh, Buddha (1998): Economic Growth and Regional Divergence in India, 1960-1995. EPW, Weekly, May 21, pp.1300-1308.

(c) Fertilizer consumption (in k.g./ha)- The economic development accompanied by technical advancement as well financial upliftment directly or indirectly provide the good base for developing agriculture system and output.

(v) Levels of workforce participation:-

The phenomenal growth of population is an unhealthy symptom for the economic system. shift of people from the lower productive agriculture employment to yet another sector marked by low productivity of employment.[9] In the light of such development in the economic, it is needed to study the impact of urban accretion on the structure and growth of the modern industrial sectors in the conjunction with the process of vertical and horizontal adjustment of labor force. The concept of economic variability, with reference to the industrial sector shows its significance through following indicators.

(a) Percentage of female workforce participation to the total population-

Development of urban sectors result in strong background effects in the rural hinterland, both in terms of income and employment multiples.[10] In the present study, male participation rate bas been taken as proxy variable for employment. The female participation rate may not be considered relevant for this purpose, as it influenced to a great extent, by definitional, institutional and several non-economic factors.

(b) Percentage of workers engaged in household industries: - Development leads to a shift of workers from the primary sectors to non-primary sectors of the economy. The growth of secondary and territory activities in the economy indicates development. Secondary sector is the most important sector of the economy. The percentage of workers in the non-primary sectors and that in the secondary sectors these are directly linked with the development Despite manufacturing activities are predominant in both Punjab and Andhra Pradesh but also their proportion has been taken consideration to lay the proper emphasis on the importance of secondary sector in the economy.

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[9] Kundu, A. (1980): Measurement of urban processes: A Study in Regionalization, popular publication, Bombay, p.30.

[10] Kundu, A. (1980): Measurement of urban processes: A Study in Regionalization, popular publication, Bombay, p.30.

(c) Percent of workers engaged in Household Industries- In the concept of economic viability, in present Indian conditions, must relate in a large way to the employment situation. In this context, it would be interesting to examine the thesis that the development of urban sectors results in a strong backwash effects in the rural hinterland, in terms of employment multiplier in HHI. The manufacturing and registered industrial units, in general provide the life blood to the economic system because of their leading role in transmitting growth impulses through backward and forward linkages.

II.3 Source of Data:-

The present study is entirely based on secondary source of data obtained from census of India, Census of Punjab, Census of Andhra Pradesh, and various official agencies. For all variables of population characteristics, data has been collected for the march 2001. For some economic and civic amenities, the data for 2001 is not available, as, it has been collected of for Oct-2000.

The publication that is being referred in this study, listed as follows:-

i) Provisional population that is (paper-1, paper-2, paper-3) 2001, census of India, series-3, Punjab.

ii) Provisional population tables, (paper-1, paper-2, paper-3) 2001, census pf India series 28, Andhra Pradesh.

i) Publication of population census, census of India, 2001.

ii) Publication of central statistical organization.

iii) Statistical Abstracts of Punjab, 2000.

iv) Statistical Abstracts of Andhra Pradesh, 2000.

v) C. M. I. E. Report, Oct 2000.

vi) S. R. S data complied from various reports of sample Registrations systems.

II.4. Methodology:

Keeping in view the objective of the study, various statistical techniques and methods are analysis here in greater details:

(A) **Cartographic techniques**:- This includes maps and diagrams to show the variation.

On estimating distribution of variation in the states, districts have been divided in four categories through standard deviation method (very high, high, moderate and low category). Further the estimation of coefficient of variation, to show the diversity with respect to indicators among the districts of Punjab and Andhra Pradesh.

(B) **Statistical techniques-**

(i) For constructing the Composite index, MODPCA Software has been used.

In order to acknowledge the cumulative impact of these variables the composite index has been constructed to analyse the levels of development among the districts in their respective states.

(ii) To analyse the interrelationships regarding the indicators of population dynamics and development, the following techniques has been applied.

The Simple Correlation method has been taken for analyzing the interrelationship between indicators of demographic development with the other levels of development.

In which – Karl Pearson's co-efficient of Correlation is applied, using SPSS Software.Further the inter-relationship between the indicators of population dynamics and the indicators of development has been analysed. It is in between

(a) Indicators of population dynamics and the indicators other levels of development.

(b) Indicators of population dynamic and the factors of other levels of development.

(c) The factors of population dynamics and the factors of other levels of development.

CHAPTER III

Background of the Study

III. 1. Role of Population in the Social and Economic Development:

Increasing realization and the expanding scope of the meaning of development, new parameters have been slowly added, leading to diversification of dimensions of the development. In this context, classification of levels of development at various aspects needed to be covering all the essential facts. Under these circumstances, an effort has been made to rationalize the meaning of development. The importance of the study of interrelationship between population and social and economic problems lies in three-basis consideration. First, the development effects of all steps of economic development and with different ideological as well socio-economic structure, tends to produce systemic effects of national and even global tends that have cumulative impact on the productive process and attainment of long term development objective. Second, these systematic effect results from strong interaction between demographic, social and economic factor, but the casual linkages are not clear. Third, facing those casual lines as given, these are uncertainly as regards the likely long-term impact of such systematic effects (Ghosh, 1984).[1]

The demographic dynamics following the birth rates in a area, the migration of people from one area to other area as well the movement of people out of that area to other regions. Corresponding to these events, these are three aspects of population change, namely, fertility, mortality and migration. Which determines the size, growth, structure and character of population. The demographic process of fertility, mortality and migration effects size, growth, structure and character. Of population and in tern, have an impact on economic.

The most comprehensive definition of economic development by taking into consideration its major determinants.[2] According to Simmon Kuznets, the capacity to

[1] Ghosh, Buddha (1994): Economic Growth and Regional Divergence in India, 1960-1995. EPW, Weekly, May 21, pp.1300-1308.
[2] Kurian, N.J. (2000): Widening Regional Disparities in India: Some Indicators, EPW, Feb .12, pp. 538-550.

sustain rapidly increasing population at the same or only slightly down levels of living, can be viewed as economic development. But the distinction character of economic development is the combination of high rates of population growth With high rates of growth Of the per capita product, which implies economies increase in the total product. Further, kuznets mentions that higher development of per capita product leading to better state of living, requires to spiral change of economic, like change in occupational or transfer of employment from a growth To non-growth Activities, change in spatial distribution of population between rural and urban areas, change in employment status and finally, changes in employment status and finally, changes in the distribution of product among household for consumption and among capital formation.

The goal of economic, social and infrastructural development in to improve the quality of life But there is no uniform view amongst the economists and leaders of political, social and cultural systems as regards the way of attain these goals. Among all the strategies treated on better than the other, considering the specific country or regional, economic, social or political situation. This led to different development strategies have solved all around the world. of inequality, between classes through the improvement of social, economic overall living condition of the poorer status of the population In other countries, the major concern of the govt. is to reduce the regional and sectoral disparities.[3] So that the balance social and economic development can be possible with equal accessibilities to available opportunities for all sections and regimes of population

In the way of analyzing the population development interface, one requires a concrete approach. Which covers up to some level the views of economists, sociologists, geographer and demographer .In which societal and economical life should cover the health, education ,banking assistance and other civic amenities for a social well being, includes all section of society to see the overall development of as region. These objects depend to an extent on the demographic factors the agriculture. Is experiencing like birth of death rates and migration. So, the demographic factor emerges as important elements for the formulation of developmental strategies and economic policies. As a result any strategy for development should be in accordance with the needs and demand imposed on the economic by the change in population and its structure. More over, attention

[3] UNDP, 2001: Human Development Report, Oxford University Press.

should be given to the demo. Change, So that they may not distort a more equitable distribution of the benefits of economic development

III.2 Population and Development Interface

The general view emerging in recent times is that continued population increase will give immense pressure on the social, economic and infrastructural development in the future. In other words, it is held that enlargement of population size led decline in the standard of living. This view is held that growth of population means a decline in the standard of living. This view is held at the highest levels of our country without much reservation.(Bose, Mitra; population in India Dev. – 1947-2000;1974).

The interface between population and development can be compared among different regions of the world, particularly the developed and developing ones. Despite of ups and down, the developed countries have maintained the high level of employment, due to high rates of capital formation, investment and the availability of most sophisticated tech. So, the total output can be paid related to the size of population as directly as to the total available stock of capital in these developed countries considering the agriculture-structure and consequently, workforce participation. But in the developing countries like India, no such direct relationship can be assumed between the size of population and total output because of fact that like substantial part of labor forces does not participate effectively in the production processes due to very poor rate of savings, capital formation, and consequent low level of investment with backward technology (Leontief, wascity- 1979)

The analytical approaches to the relationship in population growth and Development–1977, (Birdstall Nancy), stated that a growing population had been accepted as a contributor to economic development because of its stimulating effects on improvement of the labor force with better trained workers, its encouragement for technological innovations, particularly in the field of growth. Further its permission of economies of scale in production for large markets.

A number of economists in theorizing about the relationship between population and economic development have sought a positive effect of the former on the latter.

Independence of many under developed countries led incresse in population severely also in the developed countries with baby boom in the post second world war period, saw immense population growth throughout the world. The observe result of the situation with birth rates remains same, which the death rates declining sharply led to population explosion, so, population growth seemed negatively related to economic prospects of India.

In India, the post-independence era marked by doubled its population, between 1951-81.It is much faster than Europe in the post industrial revolution. As a result of this high growth, the age composition of the developing countries with half of population in nonproductive age group is certainly unfavorable to production and more burdensome with respect to consumption and social overhead investments.

III.3 Major effect of population to regional level:

The impact of population or capital formation in India has been based on the beliefs that high rates of population growth slows down saving rate, which has a negative effect in investment and overall economic development this is because an increased dependency ration lowers per capita income and also increases consumption at the cost of savings. So, investment is automatically shifted from production sectors to demographic investments which are relatively unproductive interns of economic growth effects.

On the discussion of limits to growth, the economists especially from Club of Rome, took serious notice in the unprecedented population growth, which directly influenced the economic and infrastructural growth of a region. The arguments that rapid population growth has adverse economic development is based on the promises of facile resources, particularly land and that it diverts its saving required for economic development into consumption and unproductive demographic investment.

Rural to urban migration led rapid growth of urban population led to very high increase of population and followed by very high pressure on the agricultural system, is no more considered as an optimistic situation for economic development it has aggravated the employment situation in the third world countries, due to the fact that urban job creating capacity us much less than the demand for it. Growth in density of u-population imposes heavy burden on the capital formation fro education, health, housing,

transportation and public utilities and may create unemployment problem and other social distribution. Besides, concentrated urban growth creates problems of congestion and environment pollution, which have detrimental effect on the quality of life in urban areas. Also misappropriate urban is common now in all the developing countries, creates further inequalities, between rural and urban area as a result of which balance regional development becomes a distant possibilities[4]

III. 4. Literature Survey:

Though interface between population and development is the major part of recent theoretical works on population, can be found in ancient writings. But in true sense, no systematic theory of population was emerged till the work of Malthus in the 18th c. The views of the ancient and early thinkers were motivated towards religious, Social and political aspects of life. The community interests were more important than any serious economic consideration. The historical development of theories related to population can be analyzed in the following stages:-

Population threshold was firstly understood by Plato and Aristotle considered the question of optimum size of population in their discussion of ideal conditions of a city-state in which man's potentialities could be fully developed and highest goods realized. According to them population should be large enough to be economically self sufficient and capable of defending itself but not too large. However neither Plato Aristotle inquired explicitly into the relationship between population densities and per capita output.

The point of view on population question was continued even to the great empires of China and Rome. The population questions in the perspective of a great empire. They were less conscious that the Greeks of possible limits to population growth and more alert to its advantages for military and related purposes. Perhaps partly because of this difference in lout-look, Roman writers paid less attention than the Greeks to population theory, but were much concerned with the problem of stimulating population increase.

Fourteenth century onwards the interrelationship between the population size with the economic growth proceed through the Arab scholar Ibn Khaldun's idea. In which population density led to high degree of diversification of labour and thus a low per

[4] Mathur, A. (1983): Regional development and Income Disparities in India: A sectoral Analysis: economic Development and cultural Change, University of Chicago, Chicago, Vol. 31, No.3 (April), pp. 175-176.

capita income. According to him, densely population was conducive for better standard of living for it prompted greater division of labour and effective utilization or resources, and also ensured political stability. He was of the opinion that favorable economic conditions and political stability brought about population growth while economic progress encouraging luxurious living, led to higher taxation and consequently political instability which in turn, led to economic depression and depopulation.

Pre- Malthusian Thought:-

This period is known for the rapid changes which took place in several aspects of human life, the most striking of which were due to Renaissance or the revival of arts and letters under the influence of classical models[5]. Mercantilist and other writers of his time were concerned with the means and ways of increasing the wealth and power of the state and in particular its supplies of precious metals. Their aim was not to raise the per capita income but to increase the aggregate national income. He paid special attention to the relationship between population and foreign trade. Centillon suggested that, if the agriculture of a country could not be expanded in proportion to population, or if such an extensions would involve diminishing returns, additional agricultural products could be obtained from abroad in exchange for manufactured goods. Stuart put it that 'work' should be exported and 'matter' should be imported so long as satisfactory terms of trade could be obtained.

The Physiocratic School evolved in France at a time when there was acute agricultural distress and misery among ht people following the dominance of mercantile policy that led to the growth of industry at the cost of agriculture. This was perhaps due to public resentment and reaction against the mercantile ideas and policies. So towards the middle of the eighteenth century, prominent thinkers like Quesney and Mirabeaue established a new idea that land was the source of all wealth and thus it was necessary that proper importance be assigned to agriculture.

According to the physiocratic school a growing and large population was not always beneficial if it could not raise agricultural production. Because population is directly dependent on agriculture for food supply, any effort to suppress agriculture could

[5] Marshall,A." Alfred Marshall on population growth"PDR,25 (3):779-789(Dec.1999).

be done only at the cost of reducing standard of living. Thus they could see the relationship between population and the means of subsistence which in turn, evolved the idea that the agriculture should be encouraged.

Malthusian and the Classical Thought:

As the first edition of the Essay was intended to contradict the views of Godwin and Condorest, it is only appropriate the refer to the Utopian views of these two authors for a better understanding of the views of the Malthus. Condorcet was an ardent French revolutionary, who was tried in absentia and was sentence to death. He wrote his famous treatise on the history of human progress from the beginning to its imminent culmination in human perfection. Malthus argument rested upon the supposition that man's capacity to increase his means of subsistence was much less than his capacity to multiply. He asserted that man could increase his subsistence only in arithmetical progression, where as his numbers tended towards the limit set by subsistence and was contained within that limit by the operation of positive and preventive checks.

Though, the causes and consequences of population changes in their efforts to discover the laws governing the levels and trends of production, wages, interests, rents and profits, was the major concern of the theorists from the classical school[6]. It was generally believed that the cost of production of agricultural commodities tended to rise as a result of increase in population and consequent increase in demand and output, while the cost of producing manufactured goods tended to fall. Decreasing costs (increasing returns) in manufacturing presumably occurred because of possibilities of increasing division of labor and continuing technical improvements.

Economics of this period varied, the emphasis placed on diminishing returns in agriculture, also some did not agree that manufacturing was characterized by increasing returns. Mill held that tendency of returns in agriculture to fall as population increased could not be indefinitely offsets by capital accumulation or by extension of division of labour and the introduction of technological improvements in non-agricultural industries. Classical economist of this period also held that the level of wages depended largely on the ratio of population to capital was a commonly held view, the inference being that

[16] Marshall,A." Alfred Marshall on population growth"PDR,25 (3):779-789(Dec.1999).

wages would rise if capital increased more rapidly than population. The relation of size and growth of population to unemployment was also

given some consideration during this period. Various views regarding the need for controlling population growth were held during this period. Mill believed that population growth must be effectively controlled, since there were limits in the extent to which the flows of goods and services in any particular trade and emigration could afford little relief from pressure.

Marxian and the Socialist Thought:-

Socialist writers in general have traced all human miseries to defects in the capitalist social order and have claimed that if the reforms suggested by then are implemented, the productive capacity if the people would increase, and unemployment and overpopulation would be checked. Although all socialist writers were against the Malthsian theory their ideas regarding population issues have varied to a great extent. Early socialist writers were concerned with population questions, but there views were not clearly stated. They have attributed human misery, not to excessive population growth, but it the maldistribution of income and other supposed defects in the existing social order. Moreover, they regarded the Malthusian interpretation of the relation between population and the economy as pessimistic and as a tool of capitalist exploitations. But they did not formulate any consistent approach to the population problem.

The credit often goes to Karl Marx for formulating a more general and rational approach to population consistent with the socialist thought. But Marx differed from other socialist thinkers so far as his views of the effect of limiting population growth were concerned.[7] Some socialist writers believed that wages could be increased by limiting the population growth, while Marx has complete contrast with this view. According to Marx, population could be reduced only at the cost of under-consumption and so the falling rate of profit which would see the ultimate breakdown of capitalism.

The capitalists system also need a surplus production, criticized severely by Marx. Similarly, Engels also believed that surplus population was associated with surplus

[7] Marshall, A, Growth of population and development, PDR, 25(4), 1999 (Dec),pp .779-786.

capital which would have been overcome only by social transformation. In the opinion of these socialist writers the prevailing vicious circle of poverty in the developing countries can not be traced back to higher reproduction and consequent pressure of population but to faulty social system, which can be cured some fundamental changes in the social and economic organizations.

Modern Thought:

The controversy regarding the relationship between population and economic developments in recent years, sustained economic growth in the industrial countries in the second half of the nineteenth and first quarter of twentieth century showed the obvious inconsistency of the theoretical construction of the classical economists, which prevented the analysis of population question in economic literature for a long time.[8] It is only in the post war period that a new generation of demographic models appeared when the importance assigned in the past to land and natural resources was replaced by emphasis on capital formation and investment as strategic factors determining economic growth. Obviously, the demographic economic models developed during this period laid great stress on the relationship between population and capital formation.

The concern among the scholars of different disciplines was optimum population. It means the size of population which results in the highest per capita income, the highest productivity as measured in different manners, or the highest level of other less well-defined economic indicators, such as economic welfare, level of living, real income and in some cases employment.

In a region, the interrelationship between population, production and natural resource was studied by E. Canan. With an increase in population, production goes on increasing up to a maximum point after which it starts declining with any more increase in population.

However, the theory of optimum population has been criticized by many scholars. This is because the theory does not explain how population size is determined and also does not include the process of demographic and economic changes.

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[8] Harper ,G.C." Changing food production and Quality of Diet in India1947-98, PDR.25(3): 43-447.

A general and complete theory of the inter-relations of the basic demographic process, including the determination of the age structure and other functioning of the population, was developed by Lotka. In his analytical theory Lotka began by discussing the relationships in a closed population between the basic demographic variables, such as population growth, births, deaths and their respective rates, age-specific survival ratios and the age distribution. Taking fertility into account, he distinguished a population, commonly refers to as stable, in which both age-specific fertility and morality schedules are constant. On the basis of these assumption he analyzed the relationships between the different demographic phenomena and derived certain properties of the populations concerned demonstrating that under these conditions the crude birth and death rates and the rates of natural increase, among others, would be constant.

Coale and Hoover studied the industrialized countries in relation to the process of demographic transition with respect to the economic development. The agrarian low income economy is characterized by high birth and fluctuating in response to varying fortunes. Then, as the economy progresses to become more interdependent specialized and market dominated, the average death rate begins a continuing decline under the impact of better organization and improved medical knowledge and care. Somewhat later birth rate begins to fall. The birth and death rates pursue a more or less parallel downward course with the decline of the birth rate lagging behind. Finally, as further, reductions in the death rate become harder to obtain, the birth rate again approaches equality with the death rate and a more gradual rate of growth is re-established, with, however, low risks of morality and small families as the typical pattern. Morality rates then become relatively stable from year to year and birth rates responds to voluntary decisions rather than deeply embedded costumes and may fluctuate from year to year.

While, the idea of a demographic transition has been widely adopted and is frequently used as a generalized description of the evolutionary process, a number of writers have emphasized its limitations as a theory. It has experience of western countries, whose historical demographic trends were by themselves far from uniform, it is unlikely that it provides more that vague suggestions about factors which my determine growth in other countries.

Demand functions and the investment function to analyse the impact of a rapid growing population on economic growth developed by Alvin Hensen, in his model of 'Frontier Spirit', in which he took his two functions-. According to this model, a rapid growing population will have a positive effect on the economy because of its stimulating effect on demand and its risk-reducing incentive to investment.[9] This model again does not apply to the developing countries situation because of its assumption that investment will be higher order a situation of rapid growing population simply because it creates more demand. But the model does not care of the fact that increasing consumption in the third world countries reduces the rate of savings, capital formation and investment which have a very depressing effect on the productivity and technical progress and finally on economic growth.

The classical school in which the major concern was the demand for which labour governs the supply, developed by Coontz, in his theory of population growth.. He assumed morally to be directly related to fertility, while taking the generally observed relation between fertility and economic status or income as the point of departure for explaining fertility. Considering the wealthy, he argued that the reasons for high fertility among them had disappeared even at an early stage of development since the labour of children and wives was relatively little important.[10] Among the poorer classes as long as there existed a demand for child labour, parents acted rationally in having a large number of children. The birth rates of the poor would decline only when the demand for this type of labour declined and the average quality of the labour demand increased.

. Population growth, through the relations which exist between its basic determinants and income, is regarded as a function of levels of living. Harrey Leibenstein in his model of economic development assigns great importance to population as endogenous variable Mortality is thought to be negatively related to income, the reasoning, medical care etc, associated with an increase in income and development", Princeton University Press, Princeton, 1954. Lower mortality or Fertility is determined by a great number of factors, but up to a certain motivations for larger families will

[9] Marshall,A." Alfred Marshall on population growth"PDR,25 (3):779-789(Dcc.1999).
[10] Mlia, J.R.,Ngoleka, Population growth and national Development in Malawi, Malasian Journal of Tropical Geography, 15, June(87), pp. 39-48.

predominate. After that, fertility is likely to decline with further gains in income in explaining the factors which create the motivations for smaller rather that for larger families. Leibenstein holds that both in the less developed and in the developed economies, parents are rational in their decision and will desire an extra child only when the costs are smaller than the satisfactions.

On analyzing the levels of equilibrium Nelson stated that many of the under-developed countries are caught in the low level equilibrium trap characterized by a stable equilibrium level of per capita income at or close to subsistence requirements. Capital formation is low and if the capital stock is accumulating, population is raising equally fast, capital per worker. Nelson's model is built around three basic variables: income, investment and population growth can results only from mortality. Mortality is supposed to be determined by the level of per capita income until the latter reaches a certain level beyond which it has little effect on mortality. Assuming production to be a function of capital stock, including land and population, Nelson shows that average income per head can increase only if the rate capital formation exceeds that of population growth.

The development of economic, modern and manufacturing sector in backward, traditional or agricultural regions with different production functions, developed by Jorgenson in his two sector model. He assumes diminishing returns in agriculture; constant returns in industry and constant neutral technological change in both sectors. Capital formation is determined by the growth of manufacturing labour force, by the terms of trade between two sectors and by Malthusian law of population. More specifically population growth depends on the supply of food per capita and force of morality. The birth rate depends on the supply of food per capita, but may attain a biological or social maximum provided the supply of food is sufficient. When output per head is increasing, however, an agricultural surplus is generated and the development of manufacturing sector becomes possible. This process is accompanied by a continuous change in production and by a transfer of population towards the manufacturing. Population will grow at its maximum rate and in the absence of technological change; capital and output will grow at the same rate.

On developing a demographic policy with respect to economic situation Coale and Hoover applied the Harrod-Domar model in the developing countries. This is a

simple simulation model based on three functions, such as, production function, savings function and function of capita productivity.[11] In this model savings are defined as the product of population size growth. So far as the function of capital investment is concern, a board and direct effect on production, while investments on social welfare have weak and delayed impact on the productive efficiency of the economy. The birth and death rates in the model are specifically analyzed in the Indian context having references to a typical developing country and are taken as exogenous variables but depend upon a demographic policy, which has also been taken as an exogenous variable in the model. As a result of this, the model concluded the economic costs of a high birth rate and it seems the model was designed to illustrate the negative impact of a high birth rate and rapid population growth on the economy. However, the conclusions of the Coale and Hoover model that demographic policy aimed at reducing the birth rate is essentially necessary for the developing countries and the assumption of its success are for from satisfactory. Because in the first instance, in the absence of any demographic policy, social and economic upliftment of the poorer strata of population, female education and employment, urbanization etc., can reduce birth rate to a great extent. A birth rate reducing demographic policy has obviously failed in case of India fro which the model was specially developed. Because thirty five years of family planning program in India has not been able to reduce the population growth rate by any considerable margin.

An optimistic relationship between population and economy was produced by E. Boserup. It was quite different from Malthus. According to pessimists like Malthus, the population Pressure" George trolled by food production and hence the population has been taken as dependent variable. According to Ester Boserup population growth is a major factor determining agricultural development. So, her model is based on the idea that agricultural development is influenced by population changes and hence the population has been taken as independent variable.

It is concluded that "as the population increase, agricultural production also increase to keep peace with the need of the people. This improvement in agricultural production is carried out through the improvement technology, multiple cropping,

[11] EPW Research Foundation (1994) : Social Indicators of development for India – II, Inter State Disparities, EPW , Weekly May 21, pp. 1300- 1308 .

division of labor and other like factors. Higher growth of population causes the rapid growth of agricultural production. But if was take her model in Indian context, it does not hold good. Because most populous states with rapid growth rate of population have been failed to keep pace with the agricultural production."

On analyzing through cost-benefit planning Stephen Enke produced a mode in which he proposed two alternative investment policies, the first one to step up urbanization and industrialization which would be reduce birth rates and the other on land reclamation which would be reduce birth rates and the other on land reclamation using his model in a developing countries situation, he came to the conclusion that consumption per head is initially higher in case of the former policy and the gap continues to rise.[12] According to Enke, the differences in per capita consumption trends created by these two investment policies can be solely entrusted to the differences in the rates of population growth.

Another model of population dynamics was developed by Colin Clark in which he pointed out that economic development is the results of population growth as the latter increase the supply of savings. Taking population in the developing countries, he came to the conclusion that the population growth promotes economies of large scale production for it creates a larger market than a stationary population. But the views of Clark are self-contradictory on the ground that in the developing countries the large scale consumption which he considers as benefit, in the real situation reduces the rate of savings, when rate of saving reduces, capital formation and consequent capital labour ratio comes down as a result of which productivity per worker automatically reduces. Hence the model of Colin Clark does not apply to a developing country situation, particularly in the long run.

A model developed Jullian Simon about the overall relationship between population and economic growth, by which he meant growth of productivity per worker. This model is based on two functions-productions function and the technical progress function[13]. He concluded that the population positive effects upon the rate of economic growth, this is growth of productivity per worker through their positive effects on the rate

[12] Enke Stephen, Population growth and agriculture in poor countries: A review of theoretical issues and empirical evidences, World Development, 25(7), July (97), pp. 1151-63.
[13] Anuradha, A. Rao, A.V.V.S.K. (1995) : An analysis of inter state industrial disparities in India 970-71 to 1985-86 , EPW, Vol. XXVII, No. 1 pp. 27-35.

of technical progress. However, when we apply this model to a developing countries situation. Like that of India, we are unlikely to get the same conclusion as that of Simon because of the fact that the assumption of constant capital labor ratio does not apply to the developing world. This is because the growth of workers is much faster than the growth of capital in the developing countries.

In the India's contemporary economic and social problems from the point of view of population, according to Cassen population growth has contributed to the lack of material progress for the bulk of population. His major findings one that, India's population growth rates has passed it's maximum, the key development problem is the utilization of labor at the village level, and the process of changes required to alleviate poverty should be in accordance to the Indian socio-economic conditions.

Another eminent economist analyses the relationship between population growth and various socio-economic factors in Rajasthan and finds that population growth has negative impact on economic development.

Michel Todaro defines development as a " process of improving quality of all human lives", that entails "rising people's living standard, ... creating condition conducive to the establishment of social, political and economic system and institutions that promote human dignity and respect; and increasingly people's freedom to choose by enlarging the range of choice variables.

Streeten Paul Patrick ('Thinking about Development'), deals with the dynamic concept of development. Evolution from economic growth via employment, jobs and justice, redistribution with growth to basic needs and human development represents a genuine evolution of thinking, also says economic growth has never been objective of development, but the development could be tested by economic growth; poverty reduction has been major concern of development, but poverty is the relative concept largely measured by consumption level. Therefore, poverty reduction and higher level of consumption can not be main objective4 of development.

V.V Bhanoji Rao (1991) states, development must include nutrition, health, shelter, employment, physical environment, the socio-cultural environment (quality of life), participation of decision making, human dignity, sense of belonging etc.[14]

Douglas A. Hick (1991) proposed a method to incorporate a concern of distribution inequalities of income, education and longitivity in to the development. He studied 20 developing countries and applied Gini's-coefficient in his study, in measuring inequalities an annual income, educational attainment and life span attainment.

Alfred Marshall in 'Growth of population and Development' explaining the 'Doctrine of population in modern form' says that as the natural increase is the output of n umber of live births out of deaths ; where birth rates are determined by habits relating to marriage , age at marriage and climate, it directly reflects the man's income .....In - out migration are also direct reflectance of poverty; enforced to go to the feudal landlords...become hired agricultural laborers[15].

On supply of laborers, he says "whatever be trend to the depopulating the country tends to impoverish it ...development asks for development".

Sir James Steuart pointed out "tendency of population to increase up to the margins of subsistence....a physiocratic doctrine....wage of the laborers are limited to that which is necessary to procure his subsistence".

Adam Smith, on the Second law of physiocratic doctrine, change in methods of industry, is injudicious poor law to bring the working classes into great misery they have ever suffered.

On law of diminishing return, Marshall says that as the volume of labor increases, the efficiency of labor increases...but when the population increases it led unhealthy, enervating habits unto the overcrowd cities, ...initially the facilities , skills, material resources, income ,production etc. increases...but ultimately diminishes the benefits that she drives from the action of law of diminishing return.

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[14] Rao, S. k. (1978): A Note On measuring Economic Distances between Regions in India, EPW, April.
[15] Marshall,A." Alfred Marshall on population growth"PDR,25 (3):779-789(Dec.1999).

Coale and Naqvi on comparing India and Mexico stressed over the population growth and its impact on the levels of development through PCI, rate of economic growth; economic growth to fertility rate, mortality rate , life expectancy ,; population projection to population growth .....later it is being stressed that there is no reason to take natural resources(land , water , and others)as neo-classical analysis of economy depends upon three factors (land , labor and capital)the first two remains constant , but the capital determines the economy ;how much national input could be withheld from consumption and added to investment ; investment in education especially to primary level will ultimately led to increase in overall productivity[16] .

Harrod - Domar model emphasis that growth in economy led to increase in the national income and further to the social sector , demography (decline in fertility, mortality and migration rates).....growth of economy is also the reflectance of population projection and it reflects change in fertility , mortality and migration, GNP growth rate , life-expectancy , students educating in primary schools etc.

Prof. Moonis Raja in "Is India over- populated" , stressed that standard of living of a people basically depends upon the stage of development of the faces of production , the size of population playing a secondary role .[17] The size of population and the standard of living are not directly related concepts -the former determining the latter.....many as are the reasons in the whole social structure in India for this arrested economic development , the main reason lies in the Imperialist system itself, whose working is necessarily hostile to an independent industrial mineral resource...unless the whole potential to be utilized would be able to shield to the poverty.

Population is an active factor that influences the nature and pattern of developmental processes and economic activities . Population as an indicator of regional development, manifests demographic backwardness and socio-economic disparities in the levels of development.

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[16] Gaikwad , S.B. and Mishra 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. IX, No. 1 , pp.25-35.

[17] Raza, M.,"Is India over-populated", The Geographer, vol.-13,no.1, 1969.

A better understanding of population as indicator of development requires an explicit recognition of the complex and interrelated nature of the developmental processes, in which population is an integral and crucial factor.

The growth of population is interplay among fertility, mortality and migration, which play a profound role in shaping the structure of population.

The distribution within the population of one or more individually carried traits and attributes.

Analysis of occupational structure of population constitutes an important base for socio- economic stratification of society, especially that of a modern, industrial and urbanized region. As region develops, large proportion of its workforce gets engaged in the secondary and tertiary activity .it led to decline in the proportion of worker in the primary activities. So, occupational structure is an effective indicator of levels of economic development.

Literacy, is an instrument of social change ,higher the level of literacy , higher the socio-cultural development of an area. The difference in the male and female literacy reveals the social bias and prejudices in male dominated society .So, there must be an investigation on female literacy , on analyzing the development of a region.

Urbanization is an indicator of development manifests the complex network of demographic association and interaction with the developmental processes, is single index involves socio- economic and technological transformation of society from agro-based rural economy to industrial economy. It induces out-migration of the people from rural to urban area, and that lead to high sex ratio and dependency ratio. the processes of urbanization leads to the disparities in the levels of development of 'Spread -effect' , does not take place .If higher the fertility rate there will be higher dependency ratio,and so the burden will increase and will affect the quality of life adversely. If lower the mortality rate, the senile population will increase and so the burden on working population will have to bear extra, will affect the levels of development.

CHAPTER-IV

Demographic, Economic, Social and Infrastructural profile of the states

IV.1. Demographic profile of the states:

In order to understand the dynamics of population for Punjab and Andhra Pradesh, there are four indicators have been chosen. There district wise analysis has been formulated by taking each of the indicators separately.

IV.1.i. Population growth

The districts wise population growth shows the spatial pattern of change of population. It also shows the concentration of population in different districts as well as in the regions. The population concentration process appears in those region which are geographically favourable, commercial, industrially, developed and due to this, people from countryside start migrating to those region for employment, which further accelerate the population growth[28].

The comparative picture of the recent trends of population growth in Andhra Pradesh and Punjab shown in the table. Evidently Punjab recorded the much faster growth rate as compare to Andhra Pradesh in last decade. Hence, for a better understanding the passes of population growth, at district level analysis is essential. The level of population of growth during 1991-2001 among the districts are given in the table (*). The figure given in the table shows that there were four districts, namely Ludhiana (24.79%), Rupnagar (23.89%), Amritsar (22.72%) and Faridkot (21.42%) which had very growth rate of population than the state level (19.76%). Where Moga (13.93%), Hosiarapur 13.81% having low population growth with Nawasahar (10.43%) with the lowest. Gurdaspur, Jalandhar, Fatehgarh Sahib, Firozpur, Muktsar, Bathinda, Mansa, Sangrur, Patiala having high population growth ranging between 17.62% to 21.2% and Kapurthala (16.34%) having moderate population growth rate. But, it is important to note that fifteen districts of Punjab have registered lower population growth than the national average.

[28] Smith, D.M. (1987): Geography, Inequality and Society, Cambridge University Press, London, p.8.

(*) – in Appendix.

The high population growth in Ludhiana ,Rupnagar and Amritsar, during 1991-01 could be manly the due to the natural increase of population; where in migration plays the main role as these districts having low birth rates as well as death rate. The districts Nawasahar, Moga Hosiarapur are relatively backward having comparatively higher death rate led more increase of population, despite low birth rate even than the national average.

Andhra Pradesh at present as one of the list population growth rate state. In last few decades the family planning programme has been highly introduced, led very low growth rate (13.86%) of population as compared to national average. As far as districts level of population growth rate is concerned, table () shows that during 1991-2001, Rangareddy (37.41%) has highest population growth rate and is much higher than the state as well as national level; where as Vizinagnaram (6.35%), East Godavari (7.3%), Guntur (7.27%), Srikakulam (8.93%) having even less than 10% of growth. Mehbubnagar, Nalagonda, Prakasam, Nellore, Cuddapah, having low population growth rate ranging between 6.35% to 14.11%; much below the national average. The out migration may be the major cause along with the introduction of family planning programme as well as the health care facilities. Which subsequently have social impact and act as dominant factor in reducing the population growth. Besides to it rest of the districts having moderate population growth and is between 14.12% to 21.88%, even below the national level. So, except Rangareddy, rest of the districts of Andhra Pradesh having low population growth than the national average.

The coefficient of variation of the population growth is very high in Andhra Pradesh, it is 42.6% whereas in Punjab it is 18.14%, it indicates that the population growth has been taken very unevenly in the districts, does need a planning to check other districts for a low population growth.

IV.1.ii. Crude Birth Rate:

The growth of population depends largely on human fertility. In population dynamics, fertility is a positive force, through which population expands, counteracting the force of attrition caused by mortality.[29] A large number of countries experienced substantial fertility declines in the recent years. These fertility reductions

[29] Dyson, Tim and Mick Moore, 1983."On Kinship Structure, Female Behavior autonomy and demographic Behavior in India" PDR 9(1):35-60.

are becoming the rule rather than an exception. In 2001 census, the crude birth rate of Punjab was 20.1% much below than the national level (25.9%). Among districts, Firozpur, having highest crude birth rate (23.30%), but even less than the national average. Jalandhar (17.8%) having the lowest crude birth rate followed by Kapurthala (18.9%), Hosiarapur (18.3%) and Moga, Muktsar, Faridkot, Bathinda, Patiala having low crude birth rate, between 17.8% to 19.77%. It is mainly due to some economic factor accompanied by social factors, e.g., industrialization, urbanization, family functions and structures, relationship between mortality and fertility, led the dominant role in reducing the crude birth rate as well the level of implementation of family planning programme along with them. Districts like Gurdaspur, Amritsar, Mansa, and Sangrur having little high crude birth rate than the state level.

In case of Andhra Pradesh the crude birth rate for the 2001 census is 20.4%, much below than the national level. Mehbubnagar (24.8%) having slightly higher crude birth rate than state level but even less than the national level, has highest crude birth rate in the state followed by Kurnool (24.5%) and Adilabad (23.5%) having very high crude birth rate. Where as Prakasam (17.2%) with the lowest along with Nellore (18.5%), West Godavari and Krishna (18.0%), East Godavari (18.6%) Hydrabad (18.6%) having low level of crude birth rate. The kind of motivational factor especially attitude of the couple towards reproduction, which played an important role about a change from high fertility to low fertility along with the implementation of family planning program at higher level. Hydrabad, Nellore, due to high level of urbanization and industrialization accompanied with factor but incase of Guntur, Krishna Prakasam, despite having high proportion of rural population the low crude birth rate indicates the social upliftment and spread of family planning programs in these regions. Rest of the districts having crude birth rate ranging 19.48% to 23.02%.

The coefficient of variation of the crude birth rate is low in both the states. It is 9.9% and 6.34% in case of Andhra Pradesh respectively. It indicates that implication of family planning program is evenly distributed among the districts of these states. It is also necessary to investigate the other reasons for the even distribution of other amenities which provide an improvement over CDR.

IV.1.iii. Total fertility rate:-

It is largely determined by the social, cultural and economic conditions prevalent in a region. Number of children per women (15-49 years) is one of the major indicators of social structure, children with a great economic, social cultural as well as religious value. This also indicates the status of women.

The total fertility rate is 2001 census revels, Punjab having low total fertility i.e. 2.4 children per women. (15-49 years) is much less than the national average having 3.2 children per women. At districts level Firozpur (2.8) registered the highest total fertility in Punjab, but even less than the national level. It along with Amritsar and Mansa (2.7) having very high total fertility rate at state level. When as Jalandhar (2.1) having the lowest along with Kapurthala and Nawasahar (2.2) registered low total fertility in the state. Gurdaspur, Hosiarapur, Rupnagar, Fatehgarh Sahib, Moga, Patiala, Faridkot, Bathinda and Sangrur were the districts having moderate total fertility rate ranging between 2.28-2.45 total fertility rate.

The low number of children in low total fertility rate category state is mainly due to the level of awareness towards factors of fertility as well as the motivational factors and factors relating to family structure and functions.

In case of Andhra Pradesh having total fertility rate 2.3, much below than the national level. Mehbubnagar registered the highest (3.1) along with Medak (2.9). These two states having very total fertility rate at state level but still below national level. Which indicates that the states of women and less motivational factor as well family structure and functions may be the major cause. Though, these districts are less developed, so, impact of urbanization and industrialization is quite low. As Hydrabad, Krishna, Guntur, having the lowest total fertility rate with 1.9, and Karim nagar, Vishakhapatanam, East-Godavari, West-Godavari, Nellore and Chitoor having low total fertility rate ranging between 1.9 to 2.2 total fertility rate. It clearly indicates that large number of districts having very low total fertility rate shows great impact of motivational factor for low family size and the awareness of people towards family structure and functions. Besides to attitude towards women, high level of education, awareness of self-expression led the low total fertility rate in those regions. Nizamabad, Warangal, Khammam, Srikakulam, Vizinagnaram, Prakasam and

Cuddapah were the districts having moderates level of total fertility ranging between 2.3 to 2.5.

The coefficient of variation is low in case of Andhra Pradesh with 14.18% in case of Andhra Pradesh but it is very low in Punjab with 7.52%. It indicates that the level of total fertility rate is almost similar in Punjab, among the districts where there is little more variation in Andhra Pradesh.

IV.1.iv. Urban population:-

The district wise urban population shows the spatial pattern of urbanization. In general urban population concentration processes appear in those region, which are geographical favorable, commercially and industrially developed.[30] It is the major indicator of nature of workforce participation in non-primary activities as well as the high density as well as the population size of the region.

The level of urbanization of Punjab was 33.95% little higher than the national level 27.51% on districts wise, Ludhiana (55.8%) and Jalandhar (47.45%) having the highest urban population. Where as Amritsar (40%) having moderately high must higher than the national level. The high level of industrialization accompanied by infrastructure development assist in the people's engagement in secondary and tertiary activities as pull the people form outside to these regions for employment.

Nawasahar recorded the lowest urban population (13.8%) along with urban population. These districts dominated by the agricultural and other primary activities having least industrialization. Rate of the districts having moderate urban population ranging between 24.4% to 34.8% in Gurdaspur, Kapurthala, Rupnagar, Fatehgarh Sahib, Firozpur, Muktsar, Faridkot, Bathinda, Sangrur.

In case of Andhra Pradesh having urban population is 27.08%, little below than the national level. The capital city Hydrabad records the maximum level 100% of urban population. It is mainly due to being administration along with high level of industrialization and inn associated led engagement of people in secondary tertiary, quaternary activities. Next to it Rangareddy (53.27%), Vishakhapatanam, (39.89%), having very high urban population due to being a people town and the Iron & Steel

[30] Kundu, A. (1980): Measurement of urban processes: A Study in Regionalization, popular publication, Bombay, p.30.

industries led Vishakhapatanam to be more urbanized where as Rangareddy due to small and medium scale industries.

Adilabad, Krishna and Guntur having moderate (24.69% -38.79%) level of urban of urban population. Where rest of the districts less than 24.68% of urban population, among which Mehbubnagar (10.59%) having the lowest followed by Srikakulam etc. Most of these districts are agricultural dominated region led least participation of people in secondary and tertiary activities.

The Composite Index for the Levels of Demographic Development: (ANALYSIS)

Change in the population affects the human welfare. It was the theme of demographers since decades that followed the Malthusian Essay. It is necessary to revise the optimistic doctrine of population components, which could provide a policy of conservation of natural resources and retarding the increase of population.

Changes in total fertility rate transformed the 'average 'life course. These major changes in demographic regimes also have long-lasting effects on population size, growth and structure that have been extensively studied and debating during the last 50 years.[31]

Among the components of population there are three indicators have been chosen. They are,

(i) Growth rate of population (1991-2001),

(ii) Crude birth rate, and

(iii) Total fertility rate.

Due to the data constraint, other indicators of death rate has not been taken. But the low CBR and TFR along with population growth project the low death rates. So, by selecting the three indicators can give a good picture of the population characteristics. The urban population has been omitted from this study as it has opposite direction in terms of quantitative analysis.

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[31] Bouge, Donald J. and Amy Ong Tsui.1978"Dclining world Fertility: Trends, Causes and Implications" Population Bullatin33 (4).Washington D.C.: Population Reference Bureau.

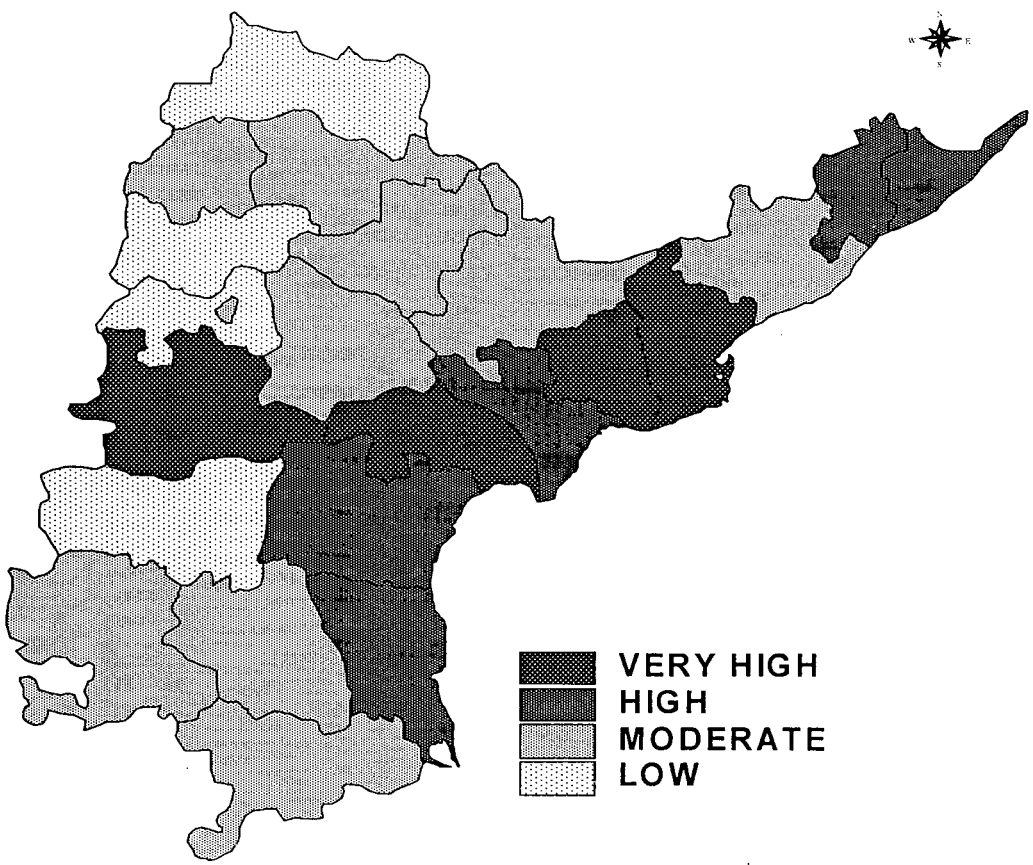
COMPOSITE INDEX FOR THE LEVELS OF DEMOGRAPHIC DEVELOPMENT:

PUNJAB			ANDHRA PRADESH		
Districts	Factor score	Rank	Districts	Factor score	Rank
Muktsar	1.97	1	Rangareddy	2.812	1
Kapurthala	1.959	2	Kurnool	2.152	2
Sangrur	1.887	3	Adilabad	2.091	3
Fatehgarh sahib	1.871	4	Medak	2.059	4
Moga	1.864	5	Mehbubnagar	2.009	5
Bathinda	1.796	6	Nizamabad	1.828	6
Faridkot	1.782	7	Warangal	1.808	7
Amritsar	1.763	8	Khammam	1.789	8
Gurdaspur	1.762	9	Nalagonda	1.786	9
Mansa	1.751	10	Anantpur	1.74	10
Patiala	1.739	11	Vishakhapatanam	1.709	11
Ludhiana	1.678	12	Hydrabad	1.687	12
Hosiarapur	1.582	13	Karim nagar	1.68	13
Jalandhar	1.574	14	Chitoor	1.675	14
Firozpur	1.565	15	Cuddapah	1.66	15
Nawasahar	1.528	16	Krishna	1.539	16
Rupnagar	1.374	17	Prakasam	1.527	17
			Srikakulam	1.514	18
			Nellore	1.456	19
			Vizinagnaram	1.432	20
			E-Godavari	1.319	21
			W- Godavari	1.305	22
			Guntur	1.245	23

(*) Low Ranking indicates the High level of Demographic Development.

LEVELS OF DEMOGRAPHIC DEVELOPMENT, PUNJAB

LEVELS OF DEMOGRAPHIC DEVELOPMENT, ANDHRA PRADESH



Studying individually to these indicators cannot provide an overall picture of the cumulative impact of population dynamics. For this purpose the composite index has been constructed to show the combined impact of these component of population in Punjab and Andhra Pradesh.

In Punjab, Kapurthala, Muktsar, Sangrur, Fatehgarh Sahib and Moga shows the very high level of demographic development. In comparison to other districts of Punjab they have are near to achieve the last level of demographic transition. Where as Patiala, Gurdaspur, Bathinda, Moga and Amritsar shows moderate level of demographic development. Hosiarapur, Nawasahar, and Rupnagar having the low level of demographic development.

In Andhra Pradesh, East Godavari, West Godavari and Guntur shows very high level of demographic development .As these districts having very high level of social and agricultural development, which reflects in reducing the population growth along with the TFR and CBR. Where the capital city, Hydrabad along with the other coastal districts, e.g., Srikakulam, Vizinagnaram, Krishna, Nellore and Prakasam shows high level of demographic development .It is due to the level of social and infrastructural facilities in these districts, associated with agricultural development in bringing down the CBR and TFR led the low population growth. Where rest of the districts shows low levels f demographic development.

In Andhra Pradesh, the coastal districts shows very high or high levels of demographic development, where the hilly and interior regions having moderate or low level of development in these demographic characteristics. Where in case of Punjab, the developed districts in terms of infrastructure and industrial activities shows the low level of demographic development. It shows that development in the infrastructure has not made a significant impact on the population. The reason is to be look in the next chapter.

IV.2. Social Profile of the states:

IV.2.i. Sex ratio (0-6 yrs): The sex ratio of the population indicates the number of females per thousand males, which is generally do not give the real picture of the male female ratio as manywhere migration distorts this ratio especially in the urban

areas[32]. On estimating sex ratio (0-6 yrs) indicates the real picture of male-female ratio as migration has least impact over this indicator. For analyzing in the study region it is important to see the level of social prejudices against/favour of women.

In Punjab the sex ratio (0-6) is very less. It is 793 female baby per one 1000 male baby which indicates very high biasness with the female. Among the districts, Hoshiarpur, Nawasahar, Muktsar and Faridkot having high sex ratio, between 797-810. whereas, in Patiala, Sangrur, Gurdaspur, Amritsar and Kapurthala having low sex ratio of less than 790 female baby per 1000 male baby. It indicates that these districts having social prejudices against the women is very high. In Andhra Pradesh the sex ratio is 963 at state level it is little lower than the required (1000). Among the districts Kurnool, Prakasham, Vizinagarm, Khammam and West Godavari having very high proportion of sex ratio (above 970) whereas Adilabad, Nizamabad, Karimnagar, Medak, Hydrabad, Guntoor and Nellore having low level of sex ratio (938-960).

It shows that in all the districts of Andhra Pradesh having much higher sex ratio (0-6) than the average district of Punjab this indicates that the social biasness is much more in Punjab than Andhra Pradesh. Even few districts of Andhra Pradesh having more than 1000 sex ratio in this age group.

The coefficient of variation is very low in the Punjab (2.3%) indicates that there is very even composition of society, but the low sex ratio implies that in Punjab the overall society is biased against female. In Andhra Pradesh 38.96%, the variation is little higher but the level of sex ratio indicates that Andhra Pradesh the whole society is almost socially in favour of women.

IV.2.ii. Female Literacy Rate

The district wise female literacy rate shows the pattern of social development. As female literacy is major indicator of development of not only to female but also to society. Punjab having female literacy rate 63.35% little higher than the national level. At districts level Hosiarapur registered highest female literacy rate with 75.56% followed by Jalandhar (72.93%), Ludhiana (72.11%), Rupnagar (71.74%) Nawasahar (69.52%) having very high literacy rate among female in 2001 census. This indicates

[32] Patric, S.P., Thinking about Development,PDR,11(4),Jan (1984), Pp.21-42.

the women and strengthening the female through the education. As female education is directly/indirectly connected to the motivational factor on ameliorate the family structure and function as well as to the society. But few districts, e.g., Mansa (45.45%), Muktsar (5059%), Firozpur (52.33%), Sangrur (53.29%), Bathinda (53.76%) having low level of literacy among female.

In case of Andhra Pradesh, the state level female literacy is 51.17% much close to the national level. On district level Hydrabad registered the highest percentage of literate female with 73.67% followed by West-Godavari (69.45%) Krishna (65.05%) having very percentage of female literates. The level of availability of infrastructure prejudices of favor of female and the urban character of these districts led the high level of female literary among female in these districts. Where as Mehbubnagar (32.83%), Nizamabad (40.57%), Medak (40.68%), Vizinagnaram (40.73%), Adilabad (41.38%) were having very low level of literary among the females.

It shows the relative backwardness of the region in terms of scarcity of the infrastructure for education as well may high level of poverty may be the major factor. The coefficient of variation is low in both the states. In Andhra Pradesh it is 19.26% where Punjab having little lower than Andhra Pradesh i.e. 13.6%. It shows that the level of female literacy is quite evenly distributed in both the states but the major concern is the level of female literacy where Andhra Pradesh shows much better condition of women.

IV.2.iii. Total Literacy Rate

It indicates the overall educational advancement of society. There is a need to analyze the level of educational awareness in both the states. In Punjab the total literacy rate is 69.95%, which is little above the national average. At district level Rupnagar having the highest literacy rate with 78.49% followed by Jalandhar, Hosiarapur, Nawasahar having more than 75% literacy where Patiala, Gurdaspur, Amritsar, Muktsar and Faridkot having literacy level between 65 to 75 percent in case of Punjab but quite high than the national level. Mansa having the literacy rate with 52.5% followed by Sangrur, Firozpur have low level of literacy between 52.5 to 65 percent.

In Andhra Pradesh, at state level the total literacy rate is 60.11%, which is little below the national level but very less than it requires. Among the districts the capital city Hydrabad having the highest level of literacy with 79.04%, followed by East Godavari, West Godavari, Kurnool, Chitoor having more than 65% of TLR. Whereas Mehbubnagar having lowest level of literacy with 45.53% followed by Adilabad, Nizamabad, Medak and Karim nagar having less than 54% of literacy. Rest of the districts having moderate level of literacy near to state level. This shows that most of the districts having literacy level lower than the national level but far below than requires.

This implies that level of TLR is quite high in case of Punjab but low in case of Andhra Pradesh indicates that level of awareness of the population is little high. But the study of other factors of social upliftment does need a more inquiry in this aspect. The coefficient of variation is low in both the states. In Punjab it is 11.57% where in Andhra Pradesh it is 12.03%, indicates that there is an evenly distribution of TLR in both the states.

IV.2.iv. Growth Rate of Female Literacy (1991-2001)

The growth rate of female literacy shows the level of advancement of women from the door of the house to the modern world. It is an important component of social development to study the levels of social development this indicator plays the dominant role[33]. It is necessary to examine this variable in the context of the two states to analyze the level of advancement of a society.

In Punjab, Firozpur, Muktsar, Faridkot, Bathinda and Sangrur having very high growth of female literacy i.e. more than 15%. But Kapurthala, Jalandhar and Fatehgarh sahib having low growth of female literacy rate in the last decade. Rest of the districts show a moderate level of increase in female literacy i.e. between 10 to 15 percent.

In Andhra Pradesh the total change at state level is 8.94%. Among the districts Medak, Nalagonda, Kurnool, Prakasam having very high growth rate in female literacy i.e. above 12% whereas districts having very low growth rate of female

[33] Baltiwala, S.1994."The meaning of Women's Empowerment; New concepts and Actions: Population and Development Studies.

literacy rate are Hydrabad, East Godavari, West Godavari and Krishna having less than 8% increase in female literacy rate.

This shows that change in female literacy is little higher than the national level i.e. 7.9%. It indicates that both the states are having developing society in concern with the upliftment of women. The coefficient of variation of the change in female literacy rate is little higher. In case of Punjab it is low with 17.63% where in case of Andhra Pradesh high with 30.47% it shows that the disparity in the development of female education is biased more in case of Andhra Pradesh but Punjab has least disparity.

IV.2.v. Change in Female Workforce Participation (1991-2001)

Female workforce itself is a measurement of growth with equity in any social condition by analyzing the increase of the female workforce in an economic system shows the upliftment of women in the respective states. In Punjab the total change in female workforce in the last decade is 14.3% it is much higher than the national level (11.1%) among the districts Rupnagar, Sangrur, Moga, Nawasahar and Bathinda having high level of change in the female workforce participation i.e. more than 16%. Whereas the two districts, Kapurthala and Jalandhar shows very poor performance in the growth of female workforce participation having less than 8% of growth rate rest of the districts having 8-15% of growth rate i.e., moderate level of growth.

In Andhra Pradesh the total change of female workforce participation in the last decade is 12.3%. Among the districts, Rangareddy, East Godavari, West Godavari, Krishna and Guntur shows very high in Andhra Pradesh i.e., more than 12% where the district like Adilabad, Nizamabad, Nalagonda, Cuddapah and Kurnool having low level of change in female workforce participation i.e., less than 7%.

It shows that the overall change of female workforce participation in Punjab is quite higher than the national level as well Andhra Pradesh. Most of the districts of Punjab showing very high level of change in the attitude of female by coming out of the door of their houses. The coefficient of correlation is quite high in both the states in Andhra Pradesh it is 30.72% where in Punjab very close to it with 31.98%. It indicates that the development of social institution is delimited to the certain regions whereas many of the region having still social constraints, dominates in both the state.

Composite index of levels of social Development: (ANALYSIS)

Here an attempt has been made to comprehend the complex social processes and quantify the relevant indicators. This category of multivariable statistics for describing a concept generally provide a picture and is consequently found to be both as a tool of analysis and an input in policy making an important aspect of overall social dev. of a region is to analyse the social inequalities, where in general case, rich become richer and the poor poorer. This sort of regional inequalities leads to the state of disequilibrium in the structure, which tends to be detrimental to the rest of the developmental processes of the region. In an economy committed to the objectives of a 'socialistic pattern of society', inter-district comparison would remain incomplete without due consideration of an analysis of overall social development of a region.

In the present study, there are five indicators have been taken and have been discussed individually earlier, at district level to their respective states. The comparative index have been prepared to show the cumulative impact of these social indicators to their respective states.

In case of social development at district level, Rupnagar and Bathinda and the most developed districts in Punjab, where as Hoshiarpur, Fatehgarh Sahib, Moga, Firozpur, Muktsar, Faridkot, Sangrur, and Patiala are moderately developed districts.

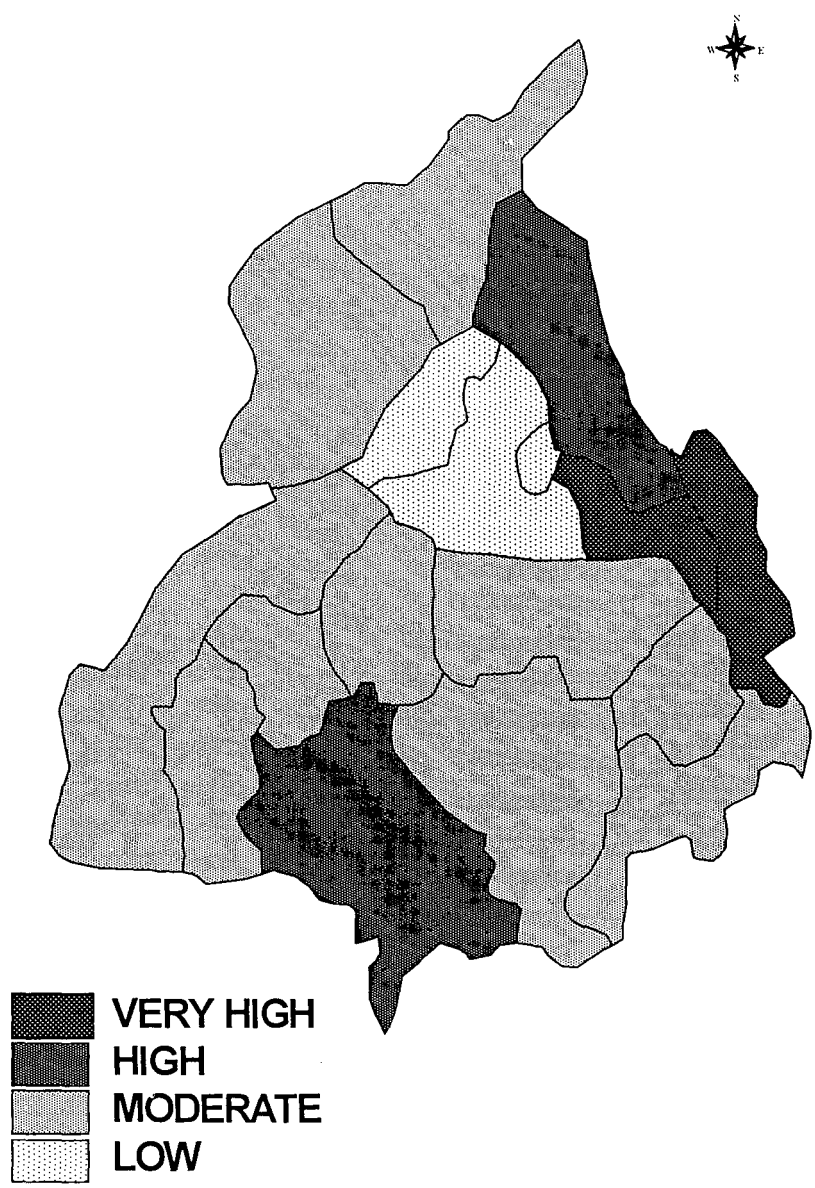
These districts are showing very high level of social development, ie, they are socially developed districts of Punjab. Where as Kapurthala and Mansa are showing low level of development. Rest of the districts having moderate level of social development. These districts does need more emphasis the social development. They can be considered as underdeveloped district in Punjab.

In Andhra Pradesh, west Godavari, Krishna and Hydrabad are the districts of very high levels of social development, where Rangareddy, Kurnool, Cuddapah, Nellore, Chitoor, Guntur East Godavari and Vishakhapatanam shows high level of social development. These districts to be considered as developed districts at the level of social development. Where Nizamabad, Medak, Mehbubnagar, Anantpur and Vizinagram are having low level of social development. Rest of the districts having moderate level of development.

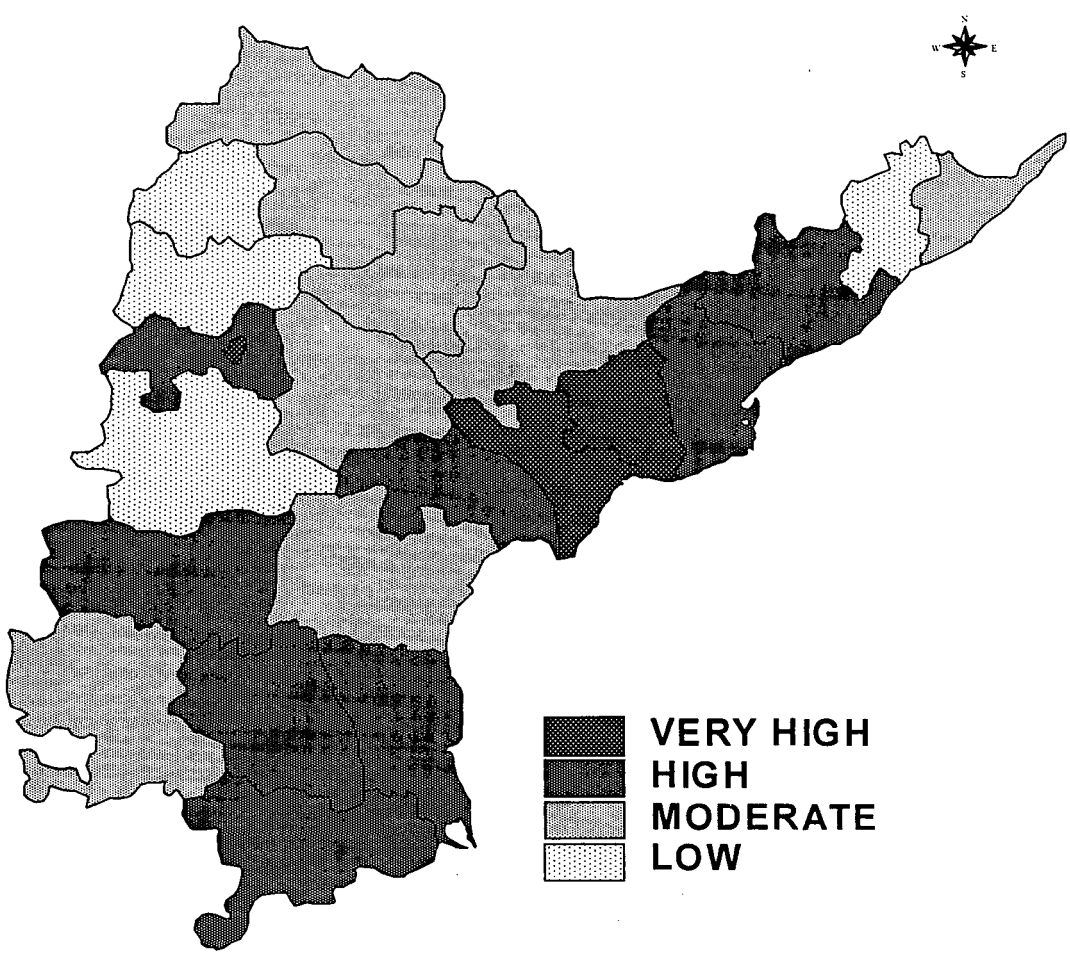
COMPOSITE INDEX FOR THE LEVELS OF SOCIAL DEVELOPMENT:

PUNJAB			ANDHRA PRADESH		
Districts	**Factor Score**	**Rank**	**Districts**	**Factor Score**	**Rank**
Nawasahar	2.801	1	Hydrabad	2.692	1
Rupnagar	2.488	2	W- Godavari	2.55	2
Bathinda	2.332	3	Krishna	2.434	3
Hosiarapur	2.289	4	Chitoor	2.43	4
Fatehgarh sahib	2.243	5	Rangareddy	2.3856	5
Sangrur	2.239	6	Nellore	2.362	6
Moga	2.212	7	Cuddapah	2.335	7
Muktsar	2.191	8	Kurnool	2.334	8
Amritsar	2.185	9	E-Godavari	2.317	9
Firozpur	2.176	10	Guntur	2.274	10
Faridkot	2.171	11	Vishakhapatanam	2.198	11
Gurdaspur	2.167	12	Prakasam	2.195	12
Ludhiana	2.153	13	Warangal	2.186	13
Mansa	2.122	14	Nalagonda	2.183	14
Patiala	2.09	15	Anantpur	2.152	15
Jalandhar	2.037	16	Khammam	2.149	16
Kapurthala	2.025	17	Srikakulam	2.125	17
			Karim nagar	2.118	18
			Adilabad	2.047	19
			Medak	2.045	20
			Nizamabad	2.043	21
			Vizinagnaram	2.004	22
			Mehbubnagar	1.837	23

LEVELS OF SOCIAL DEVELOPMENT, PUNJAB



LEVELS OF SOCIAL DEVELOPMENT, ANDHRA PRADESH



IV.3. Level of workforce Participation:

IV.3.i. Female Workforce Participation

The participation of female is work shows the social mobility and gender parity in the society.[34] Regional variations in gender disparity with respect to female workforce participation are high and low according to the societal structure and attitude towards women.

In Punjab the total female workforce participation rate is 18.7% at the district level. Nawasahar recorded the highest female workforce with 33%. Where as Rupnagar, Moga (24.2%) Faridkot (23%), Bathinda (27.1%), Mansa, Sangrur having higher female workforce participation between 22.66% to 27.82%.

The point to be noted here that these districts are dominated by non-primary activity especially agriculture and allied activities. Where as the districts having low female workforce participation are Jalandhar (12.3%) Gurdaspur (12.7%), Kapurthala (14.1%), Ludhiana (15.7%), Amritsar (16.3%) these all the districts are urbanization and industrialization had not led the more female workforce participation; but it is mainly dealt to primary activities rather than secondary and tertiary activities in case of Punjab.

In case of Andhra Pradesh, the female workforce participation rate is 34.9% much above the national average. Mehbubnagar (47.2%) having the highest female workforce participation followed by Nizamabad (44.2%), Karim nagar (43.5%), Medak, (41.4%) and other districts like Nalagonda, Warangal, Khammam, Srikakulam, Vizinagnaram Guntur, Prakasam, Kurnool, Anantpur having very rate of female workforce participation and is between 37.6% to 47.2%, much above than the national average. These districts are least urbanized and industrialized. Participation of female in work is mainly in the non-primary activities especially agriculture and allied activities in those districts.

Hydrabad, districts registered the lowest female workforce participation rate with 8.8%. It is much the national average. Where as other districts such as Rangareddy, Vishakhapatanam.

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[34] Baltiwala, S.1994."The meaning of Women's Empowerment; New concepts and Actions: Population and Development Studies.

The coefficient of variation is high in both districts. It is 21.60% in Andhra Pradesh where in Punjab it is much more than Andhra Pradesh, it is 32.63%. It indicates that the distribution of female workforce is uneven i.e., society is not so developed in Andhra Pradesh but much more in Punjab.

IV.3.ii. Workers engaged in non-agricultural sectors

In the level of modernization there is a general trend show the migration of workforce from primary to secondary, and tertiary sectors. The more the workers in non-primary sectors is an indicator of urbanization. By analyzing the participation of workforce in this sector exhibits the economic base of a region. Which accordingly shows the level of development. By analyzing this indicator the purpose is to see the level of advancement of the workforce, in these states.

In Punjab the total workforce participation in non-agricultural sector is 60.6%. Which is very high than the national level (33%). Among the districts Ludhiana ranks the first with 80.2% workers engaged in this sector followed by Jalandhar (75.1%) and Rupnagar (70.5%) whereas Mansa emerge as a predominant agricultural district in Punjab having 41.1% of workforce participation in this sector followed by Moga, Firozpur and Muktsar having 41.1 to 48.2 percent workers in non-agricultural sectors rest of the districts having moderate level of workforce in primary sectors.

In Andhra Pradesh the workforce participation is low and much closer to the national level with 37.7%. The capital city Hydrabad having 99.8% of workforce in non-agricultural sector, followed by Rangareddy and Vishakhapatanam having more than 45% of workforce in non-agricultural sector. Where as among the agricultural dominant district Mehbubnagar having the least workforce participation with 26.6% followed by Nalagonda, Khammam, Srikakulam, Vizinagram and Prakasam having less than 32% of workforce participation in the state.

This shows that despite having very high agricultural development in Punjab there is very high workforce in the non-agricultural sectors indicates very high level of development in terms of technology whereas in Andhra Pradesh the workforce is mainly in primary sector. The coefficient of variation in both the districts is moderate. In Andhra Pradesh it is 22.94% whereas in Punjab it is 19.76% this indicates the variation among the non-primary activity is evenly distributed among the population of their respective state.

IV.3.iii. Workers engaged in household activities

Household industries are generally having low level of technology but more family participation, is a transitive stage for the transformation of a society from primary to secondary and tertiary sector.[35] The engagement in the household industries is very low in the occupational structure but due to having very high profit, an essential strands in the economic as well social system. The study of these two states needs an inquiry about the level of workforce participation in household industries.

In Punjab the workforce participation in HHIs is 3.4% which is similar to the national level among the districts Moga having the highest proportion with 5.5% of the total workforce participation followed by Gurdaspur (4.5%) and Jalandhar (4.2%) having very high level of workforce participation in Punjab. Whereas Kapurthala shows the least level of workforce participation in HHIs with 1.8%, followed by Patiala, Muktsar, Nawasahar, Hosiarapur, Kapurthala and Rupnagar having very low i.e., less than 3% of workforce in HHIs.

In Andhra Pradesh the workforce participation in HHIs is 4.5%, higher than the national level. Among the districts, Nizamabad having very high proportion of workforce in HHIs with 14.1% followed by Adilabad and Karim nagar having more than 8% of workforce in HHIs. But the district like Khammam (2%), Rangareddy (2%) having the lowest level of workforce participation in HHIs followed by Medak, Hydrabad, Mehbubnagar, Vishakhapatanam, East Godavari and Krishna. Except Hydrabad rest of the districts are agriculturally predominant led very low level of development of HHIs. The coefficient of variation is little higher in both the states. It is 29.12% in case of Andhra Pradesh, where in Punjab it is 26.21%. This indicates that the spatial disparity in these two states in distribution of HHIs is very uneven in terms of their workforce participation where this disparity is little higher in case of Andhra Pradesh.

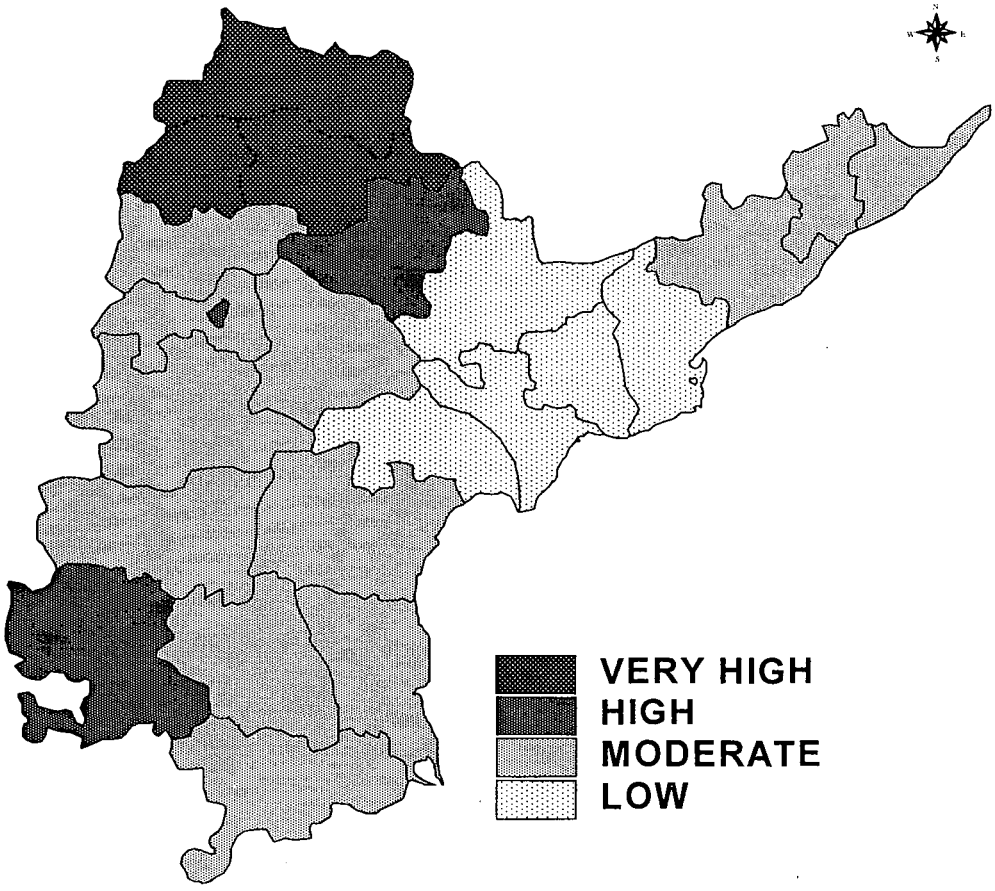
[35] Hanumantha Rao, C.H." Agricultural Growth, Rural Poverty and Environmental Degradation in India" New Delhi and New York: Oxford University Press.

COMPOSITE INDEX FOR THE LEVELS OF WORKFORCE PARTICIPATION:

PUNJAB			ANDHRA PRADESH		
Districts	**Factor Score**	**Rank**	**Districts**	**Factor Score**	**Rank**
Moga	2.185	1	Nizamabad	3.212	1
Ludhiana	2.099	2	Karim nagar	2.954	2
Nawasahar	2.064	3	Adilabad	2.277	3
Jalandhar	1.878	4	Hydrabad	1.839	4
Amritsar	1.815	5	Anantpur	1.83	5
Sangrur	1.764	6	Warangal	1.746	6
Bathinda	1.749	7	Nalagonda	1.705	7
Mansa	1.749	8	Cuddapah	1.702	8
Rupnagar	1.704	9	Medak	1.654	9
Patiala	1.644	10	Prakasam	1.632	10
Faridkot	1.578	11	Vizinagnaram	1.625	11
Kapurthala	1.553	12	Mehbubnagar	1.621	12
Hosiarapur	1.542	13	Srikakulam	1.598	13
Fatehgarh sahib	1.539	14	Nellore	1.573	14
Gurdaspur	1.487	15	Kurnool	1.561	15
Muktsar	1.371	16	Chitoor	1.539	16
Firozpur	1.361	17	Rangareddy	1.515	17
			Vishakhapatanam	1.483	18
			Krishna	1.401	19
			E-Godavari	1.387	20
			Guntur	1.375	21
			Khammam	1.276	22
			W- Godavari	1.247	23

LEVELS OF WORKFORCE PARTICIPATION, PUNJAB

LEVELS OF WORKFORCE PARTICIPATION, ANDHRA PRADESH



Composite index for workforce participation: (ANALYSIS)

The phenomenal growth of population is an unhealthy symptoms for the economic system of a region. Shift of people from lower productive agricultural employment to yet another sector marked by low productivity of employment is a common phenomena. So the study of the percentage of worker in the respective category to the total population is necessary. The more important of this study in its relation to the demographic characteristics is their cumulative impact unto a region. For the cumulative impact the composite index has been made by the selected indicators of work force participation of three categories, eg,

(i) % of workers engage in non-agricultural activities,

(ii) % of workers engaged in household industries, and

(iii) % of female workforce participation.

The composite index has been prepared to the cumulative impact of the three selected indicators of work force participation for the states.

In Punjab, Jalandhar, Moga, Ludhiana, Nawasahar are having very high levels of workforce participation. In Jalandhar the proportion of worker engaged in HHIs and non-agricultural activities is quite high, where in Nawasahar percentage of FWFP and % of non-agricultural worker is quite high, in Ludhiana percentage of workers in HHIs are the major factor for having very high level of work force participation. Districts like Sangrur, Bathinda, Patiala, Rupnagar, Gurdaspur and Amritsar having high level of workforce participation rate. These districts are having very high and high level of workforce participation, kept in developed districts category. Where rest of the districts are having moderate and low level of workforce participation. They show low level of development, ie, they are under developing districts.

In Andhra Pradesh, Hyderabad, Adilabad, Nizamabad, Karimnagar and Anantpur having very high level of workforce participation. All these districts having very high level of female workforce participation. Where Hyderabad having very high (99.8)% of non-agricultural worker, Nizamabad and Adilabad having quite high number of workers engaged in HHIs. These are the major factors in determining the levels of very high workforce participation rates in these districts. Only districts

Warangal shows high level of workforce participation, in which % of female workforce participation rate is quite high (41.8%) plays the major role in, high level of workforce participation. Rest of the districts having moderate or low level of workforce participation, ie, are the underdeveloped districts.

IV.4. Levels of Agricultural Development:

IV.4.i. Gross sown area (percentage of R. A.)

Gross sown is the major indicator of agricultural development of a region. It is very much responsible for agricultural production assists in the developments processes directly or indirectly, had all level social, economic and demographic. Punjab having gross sown area of 154.92%, much above than the national average. District wise, Bathinda, (290.48%) ranks the first, followed by Faridkot (240.7%) having very high gross sown area. The main region is the type of soil, relief accompanied by agricultural inputs in terms of fertilizers, HYB seeds, irrigation facilities and other inputs. District having low gross sown area are Rupnagar(87.27%) the lowest, Hoshiarpur (109.73%), Nawasahar (106.72%) followed by Fatehgarh Sahib, Moga, Mansa. These districts may have least inputs to agriculture as well poor terrain and irrigation facilities.

In case of Andhra Pradesh the gross sown area is 47.1%, which is quite lower than the national average. Coastal districts e.g., West Godavari(91.37%) having the highest gross sown area followed by Krishna (85.2%), Guntur (76.22%), Vizinagaram (72.7%), Srikakulam (70.93%), East Godavari (69.24%) having very gross sown area at state level. The low relief flat coastal region, irrigated mainly by river Krishna and Godavari along with other small streams lead the high gross sown area in these districts. It may be assisted by the other agricultural inputs. Where as the capital city, Hyderabad having the least (1.36%) of GSA. The hilly districts Adilabad, Nizamabad, Karimnagar, Rangareddy, Mahboobnagar, Nalagonda, Khammam, Warangal, Vishakhapatanam, Prakasam, Nellore, Cuddapah, Chitoor having moderate (23.87% to 46.35%) GSA at state level where the relief dominates the agriculture followed by the least as well high variability of rainfall. Where in some districts least inputs to the agricultural also plays dominant role.

On comparing Punjab and Andhra Pradesh there is vast difference in between these two states in terms of gross sown area. Punjab having on average 154.92%,

where Andhra Pradesh has merely 47.1% of GSA. Except West- Godavari, none of the districts of Andhra Pradesh closer to any districts of Punjab. The coefficient of variation is very high in case of Andhra Pradesh it is 40.7%, mainly due to rugged terrain in the Rayalseema and Telangana regions, which do not exhibit the agriculture whereas in Punjab due to even topography accompanied by Green Revolution, the variation is little less with 27.65%

IV.4.ii. Gross Irrigated Area:-

Gross irrigated area shows the level of development of agriculture. As it directly relatively to the agriculture production especially, those state having less rainfall. Punjab, which having less than 60c.m. rainfall, drained by five major rivers (Sutluj, Beas, Chenab, Ravi, Jhelum) forming cumulative doab i.e. Punjab. The irrigation through canals as well re-charging ground water by using well and tube-well led the irrigation up to 94.61% of gross cropped area. At district level Kapurthala having gross irrigated area (101.81%), followed by Sangrur, Moga, Faridkot, Ludhiana each having 100% gross irrigated area, along with it Bathinda (98.52%), Muktsar (99.23%), Firozpur (99.84%), Amritsar (99.21%) having very high proportion. Jalandhar, Patiala having moderately high gross irrigated area, even higher than the state level but Hoshiarpur (70.48%) having the least followed by Rupnagar (78.14%) of gross irrigated area under low category.

In case of Andhra Pradesh, the total gross irrigated is much lower i.e. 43.67% at district level Hyderabad (99.27%) having the highest gross irrigated area followed by West Godavari (86.8%), Nellore (84.9%) are having very high GIA. Nizamabad, Karimnagar, East Godavari and Krishna having moderately high GIA between 56.33% to 77.29% ; where as Adilabad having the lowest with 13.38% followed by Anantpur (17.15%), Kurnool (21.7%), Mahboobnagar (25.1%), Rangareddy (27.39%) where having very low GIA. These region having very low rainfall even less than 50c.m./yr. along with rugged plateau hamper the development of canals, wells, or tube-wells. So, these regions having only source i.e., tank system led few area under irrigation for a little time period. But the coastal district having moderately high GIA due to availability of easy terrain.

The coefficient of variation is very high (40.7%) in Andhra Pradesh as the rugged and hard surface do not led the formation of wells, tubewells and canal system

in the plateau area. In Punjab it is very low (10.18%) due to the availability of rivers followed by even and smooth topography.

IV.4.iii. Fertilizer Consumption (kg/ha):

Consumption of fertilizer is an essential factor for the high production of crop. It clearly indicates the development of region, directly or indirectly. Punjab having highest fertilizers consumption with 161.64 kg/ha; which is quite higher than the national average. At district level, Ludhiana having highest consumption of fertilizer, it is 211.11kg/ha, followed by Rupnagar (192.81 kg/ha), Firozpur (177.11 kg/ha), and Gurdaspur (166.61kg/ha) are having very high level of consumption of fertilizer. The impact of green revolution as well the economic prosperity of these districts led high level of use of this fertilizer. But Fatehgarh Sahib having merely 15.2 kg/ha, the lowest in Punjab, followed by Bathinda 43.12kg/ha. West of the districts is much above the national average.

Incase of Andhra Pradesh, the fertilizer consumption is 138.65kg/ha, very near to the national level. At district level Rangareddy (267.96kg/ha) having highest consumption of fertilizer in the state; followed by West Godavari (241.76kg/ha), Krishna (241.28kg/ha), Hyderabad (226.03kg/ha) and Nizamabad (224.84kg/ha) having very high consumption of fertilizer, even much higher than the national level. This is mainly due to the regions having physical advantages in terms of relief, soil, easy accessibility of water etc, led more development of agriculture through the use of fertilizer. The districts of hilly terrain e.g., Adilabad (45.78kg/ha) having the lowest consumption of fertilizer in the state, followed by Anantpur, (48.64kg/ha), Chitoor (88.79kg/ha), Viashakhapatanam (62.92kg/ha), Vizinagaram (63.39 kg/ha) having low level of fertilizer consumption. It is mainly due to the poor quality of soil, poor relief for agriculture does not encourage the farmer.

Though, Punjab having highly developed state in terms of agricultural production but for more development agricultural to the more suited region is at fourteen coastal districts of Andhra Pradesh having consumption of fertilizer to overcome the regional imbalance of food production.

The coefficient of variation is very high (46.56%) in Andhra Pradesh due to less agricultural development on rugged terrain in the western Andhra Pradesh. In

Punjab it is high but very less than Andhra Pradesh. It is 26.83% shows the regional variations in the input of fertilizer is high in both the states.

Composite index for the levels of Agricultural Development: (ANALYSIS)

Levels and potential of agricultural development is an important ingredient for the development of a region, either for self consumption or for the export purposes. Though there are number of variables affecting the growth of agricultural development, individual study cannot give a clear picture. The cumulative impact of these variables shows the net result of the complex inputs to the agriculture. For this purpose the composite index is a necessary requirement for it. These are three variables has been chosen for this purpose. They are (i) Gross sown Area (% of R.A.), (ii) Gross irrigated area (% of GCA), and (iii) Fertilizer consumption (kg/ha).

The composite index has been made to show the cumulative impact of the indicators of agricultural development to their respective states.

In Punjab, Kapurthala, Moga, Sangrur, Fatehgarh Sahib, Bathinda, and Muktsar shows very high level of agricultural development. In Bathinda the fertilizer consumption is extremely high followed by high gross sown area. In Muktsar, Sangrur, Moga high gross sown area plays the dominant role for the agricultural development. Districts like Gurdaspur, Hoshiarpur, Amritsar, Jalandhar, Ludhiana, Patiala and Faridkot having high level of agricultural development. So, the above mentioned districts are the developed districts at the levels of agricultural development. Where Firozpur, Nawasahar and Rupnagar having low level of agricultural development. Rest of the districts shows moderate level of development. These districts are under developing districts in agricultural development.

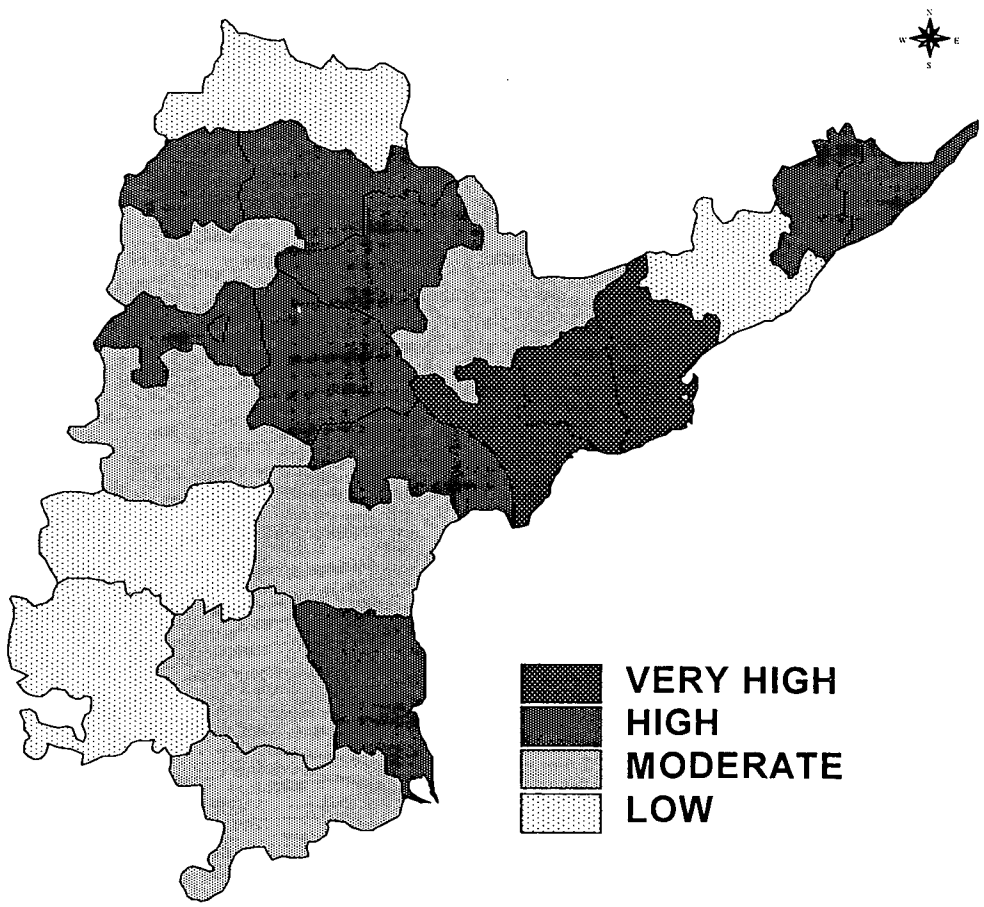
In Andhra Pradesh, East Godavari, west Godavari, Krishna and Hyderabad having very high levels of agricultural development. Hyderabad having very high level of gross irrigated area (99.54%) as well Fertilizer consumption so despite very low GSA having very high levels of agricultural development, where the coastal districts having great advantage in terms of relief and soil assisted by all three indicators have led very high levels of agricultural development. Districts like Nizamabad, Karimnagar, Warangal, Nalagonda, Rangareddy, Guntur, Nellore, Vizinagaram and Viashakhapatanam having high levels of agricultural development.

COMPOSITE INDEX FOR THE LEVELS OF AGRICULTURAL DEVELOPMENT:

PUNJAB			ANDHRA PRADESH		
Districts	**Factor Score**	**Rank**	**Districts**	**Factor Score**	**Rank**
Bathinda	2.162	1	W- Godavari	3.115	1
Ludhiana	2.067	2	Krishna	2.754	2
Firozpur	1.982	3	E-Godavari	2.236	3
Muktsar	1.942	4	Nellore	2.228	4
Faridkot	1.908	5	Nizamabad	2.223	5
Sangrur	1.888	6	Guntur	2.213	6
Patiala	1.822	7	Karim nagar	2.129	7
Kapurthala	1.818	8	Hydrabad	2.1	8
Amritsar	1.81	9	Warangal	1.931	9
Jalandhar	1.728	10	Rangareddy	1.877	10
Gurdaspur	1.682	11	Nalagonda	1.836	11
Mansa	1.586	12	Mehbubnagar	1.811	12
Moga	1.582	13	Srikakulam	1.791	13
Rupnagar	1.57	14	Vizinagnaram	1.511	14
Hosiarapur	1.487	15	Prakasam	1.46	15
Nawasahar	1.383	16	Khammam	1.457	16
Fatehgarh sahib	1.081	17	Medak	1.406	17
			Cuddapah	1.336	18
			Chitoor	1.316	19
			Vishakhapatanam	1.154	20
			Anantpur	1.051	21
			Adilabad	0.763	22
			Kurnool	0.669	23

LEVELS OF AGRICULTURAL DEVELOPMENT, PUNJAB

LEVELS OF AGRICULTURAL DEVELOPMENT, ANDHRA PRADESH



So, there districts are developed districts in the levels of agricultural development. Where Adilabad, Kurnool and Anantpur sows low level of agricultural development mainly due to poor topography, and dryness, does not encourage agricultural development. So, rest of the districts having moderate levels of agricultural development. These districts are underdeveloping districts need more agricultural infrastructure for development of agriculture.

IV.5. Indicators of Infrastructural Development:

IV.5.i. Road Density:

Roads are coterminous to the development, as they provide connectivity to the other regions, will help in diffusion of idea and trade. It is largely determined by the physiography of a region accompanied by economic activities[36]. In Punjab road length per 100 sq. km is 127.78, which is much higher than the national average. At district level Ludhiana having the highest road density followed by Rupnagar 151.31. The districts having high density of roads are Jalandhar, Fatehgarh Sahib lying between 107.45 to 130.20per sq.K.m.. Where Bathinda (61.92) having lowest road density followed by Firozpur (67.7). Sangrur (71.26), Faridkot (76.18) are having low road density.

In Andhra Pradesh the total road density is 50.27, where the capital city Hydrabad having road length 99.54 km/100km the maximum. Srikakulam, W-Godavari and Krishna having the high road density between 71.79-85.66 km/km^2. But the districts having low road length per 100 km^2 are Kurnool with 44.05, the lowest; and Khammam (48.89) Adilabad (45.73) Cuddapah (49.67) Anantpur (51.93), Prakasam (53.78), Vishakhapatanam (54.44), Warangal (54.84), Mahboobnagar (54.91). The rugged and hilly terrain accompanied by forested region led the less people to accommodate. As well loss development of industries and agriculture to these region led less connective to inside and outside to these region. Though Viashakhapatanam having some heavy and medium scale industries but it is confined to the coastal regions mainly, where Eastern Ghats on the Western side of it hampers the other levels of development, led least connectivity to the rest parts of it.

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[36] Kundu, A. (1980): Measurement of urban processes: A Study in Regionalization, popular publication, Bombay, p.30.

The coefficient of variation is moderate in both the states in Andhra Pradesh it is 19.85% whereas in Punjab it is 25.35% shows that there is a little uneven development of roads in these two states among the districts.

IV.5.ii. Number of Post Offices (per lakh population):

Availability of adequate infrastructure like post-offices is an important precondition for the sustainable connectivity, as it ensures adequate supply of a variety of infrastructure facilities in a region. The variation in the number of post offices with respect to population indicates the level of connectivity and corresponds the level of development of that significant.[37]

In case of Punjab, the number of post offices per lakh population is 17.17. At district wise, Jalandhar having 17.26 post offices per lakh population, whereas Ludhiana (17.06), Firozpur (16.85), Faridkot (16.66) are having very high number of post offices per lakh population. But Nawasahar and Muktsar having the lowest with each having 14.82 post offices per lakh population as well Fatehgarh Sahib (15.15), Moga (15.17), Sangrur (14.77) are having low category, having number of post offices per lakh population is between 14.72 to 15.35. Gurdaspur, Bathinda having moderate number of post offices per lakh population between 15.36-15.99. Whereas Patiala, Mansa, Rupnagar, Hoshiarpur, Amritsar having high number of post offices per lakh population between 16.0 so 16.62.

In Andhra Pradesh, there are 20.9 post office per lakh population; At district level Cuddapah ranks the first with 32.69 post office per lakh population. Along with Vizinagram 31.87, having very high number of post offices per lakh population. Kurnool, Anantpur, Chitoor having high number of post offices between 23. 67 to 28.17 per lakh population. Where as Hydrabad having the lowest number of post office per lakh population, it is 14.63 post office per lakh population. The high density of population 16899 led the comparative availability of post office decline as compare to the other districts like Vizinagram and Cuddapah who have low density of pop. Besides to Hydrabad, Rangareddy Srikakulam, Vishakhapatanam, East Godavari, West Godavari, Guntur having low number of post office per lakh

[37] Kundu, A. (1980): Measurement of urban processes: A Study in Regionalization, popular publication, Bombay, p.30.

population. It these coastal areas are densely populated led low number of post office per lakh population.

The coefficient of variation is high (22.73%) in Andhra Pradesh but very low (5.22%) in Punjab. It indicates that the availability of number of post offices in Andhra Pradesh is less accessible to many districts and it is evenly distributed in Punjab.

IV.5.iii. Number of Telephone Connections (per 100 person):

Telecommunication per 100 persons is universally used indictor of the level of development of communication. It indicates the means of connectivity and accessibility with the other region and more importantly interregional connectivity. As N.J. Kurian (2001), sap telecommunication's is an efficient mode to develop the rural area, and most easy method to connect the backward region with the other develop region of the word[38].

In Punjab, the telephone connection per 100 persons is quite low. It 4.59 telephones per 100 persons, quite less than the national average. At district Level, Jalandhar having the highest number of telephone correction with 4.72 telephones per 100 persons. Where as Ludhiana, Moga, Firozpur, Muktsar, Patiala having high telephone connecting between 3.93 to 4.32 telephones per 100 persons. Gurdaspur, Amritsar, Kapurthla, Hoshiarpur, Nawasahar, Mansa, Bathinda, Sangrur having moderate telephone with 3.53 to 3.92 telephones per 100 persons, where as Fatehgarh sahib (392), Rupnagar are having low telephone communication between 3.12 to 3.52 telephone / 100 persons.

Whereas, in Andhra Pradesh the telephone connections per 100 person is 3.1. In the district level, Hydrabad, Rangareddy, West Godavari, Krishna and Vishakhapatanam having high number of telephone connections. Whereas Nizamabad, Adilabad, Mehbubnagar and Medak having very low number of telephones per 100 persons.

The coefficient of variation in Andhra Pradesh in the distribution of telephones is very high (57.18%) shows that many other districts having very low

[38] Kurian, N.J. (2000): Widening Regional Disparities in India: Some Indicators, EPW, Feb .12, pp. 538-550.

number of telephone connections than the others. Whereas in Punjab it is low (10%) indicates that it is almost evenly distributed among the districts.

IV.5.iv. Health Infrastructure

High mortality and high incidence of disease cost years of life and, for those who service in poor health, years of healthy life. Health survival is a prerequisite for many, indeed most, of the gradients of the development: the acquisition of physical efficiency, the achievement of intellectual ability and skills, and the extension of individual time horizons to allow planning for the future. The availability of health infrastructure indicates the level of case to the individual.

Number of Primary Health Centres available in Punjab is little higher than the national level with 1.96 PHCs per lakh population. At district level, Gurdaspur 2.39 (PHCs per lakh population) having the highest where Patiala, Sangrur, Mansa, Bathinda, Faridkot, Rupnagar having very high number of PHG ranging 2.05 to 2.39 PHCs per lakh population. Muktsar, Firozpur, Fatehgarh Sahib, Amritsar, Jalandhar having high number of PHG ranging from 1.71 to 2.04 PHCs per lakh population. where Moga, Kapurthla, Hoshiarpur having moderate number of PHG language from 1.36 to 1.70 PHCs per lakh pop. But Nawasahar (1.01) and Ludhiana (1.14) having lowest number of PHCs per lakh population. In Andhra Pradesh, the number of PHCs 1.61 per lakh population. Is very close to the national average. Hydrabad the capital city having highest number of PHCs 1.83 per lakh population. Vizinagram, Viashakhapatanam, W-God, Krishaving the highest number of PHCs ranging between 1.58 to 1.83 PHCs per lakh population. Rangareddy having 1.57 PHCs per lakh pop. Where as Nizamabad having the lowest number of PHCs with 0.79 PHCs per lakh population. Adilabad, Nizamabad, Medak, Mahbubnagar, Nalagonda, Warangal, E-Godavari, Guntur, Anantpur, Chitoor having quite low number of PHCs ranging from 0.97 to 1.05 PHCs per lakh population.

Number of Hospitals and dispensary beds are quite high in case of Punjab to the national level; it is 109.69 beds per lakh population. At district level, Amritsar having highest very high number of beds 168.32 beds per lakh population where as Ludhiana, Patiala having high number of bed a between 112.54 to 140.42 beds per lakh population. Where as Hoshiarpur having the lowest number of beds with 56.75. Gurdaspur, Bathinda, Mansa, Sangrur are having low number of beds ranging

between 56. 75 to 84. 64 beds per lakh population. In case of Andhra Pradesh the number of beds per l. pop is quite low. It is 43.6 beds per lakh population. Hyderabad having the highest number of beds with 164.10 beds per lakh population. Whereas the industrial city Viashakhapatanam having moderate 93.42 beds/ L/ pop. Rest of the districts of Andhra Pradesh having 22.75 to 58.08 beds per lakh population.

There is high coefficient of variation in terms of both the infrastructure in both the states. For number of PHCs per lakh population it is 27.61% and 20.71% in Andhra Pradesh and Punjab respectively, whereas number of hospitals and dispensary beds having 36.05% and 23.68% coefficient of variation in Andhra Pradesh and Punjab shows there is a high disparity among the districts in both the states.

IV.5.v. Educational infrastructure

Infrastructure of education helps in analyzing the levels of inputs for awareness at the level of individual, family and community, which do not necessarily increase the economic development improved level of educational infrastructure helps in family structure and functions and directly related to the indicators of developments.[39] Primary schools provides the some level of education, through at low level in terms of awareness but at least gave impetus to individual to think and rationally up to some extent and come out of social taboos. Middle and high school have little more advantage in this respect. The availability of these infrastructure led the access to individual to become the part of main stream of development up to some extent incase of Punjab, number of primary schools per lakh population is 55.52, which is quite higher than the national average. At district level Rupnagar the highest followed by Gurdaspur having 80.39 and 73.14 primary schools per lakh population. Firozpur, Jalandhar, Kapurthala Muktsar, Mansa and Patiala having high number of primary schools ranging from 56.04 to 68.21 schools per lakh population Amritsar, Hoshiarpur, Nawasahar, Sangrur having moderate number of primary school ranging from 43. 86 to 56.03 primary schools per lakh population. Where Moga district having the lowest number of primary school 31.68 school per lakh population followed by Fatehgarh Sahib, Ludhiana, Faridkot, Bathinda having low number of primary school ranging from 31.68 to 43.65 school per lakh population.

[39] Kundu,A. (1985), Analysis of structural change in the Indian economy – Certain Avoidable Anomalies in Usages of the population Census Data , Population Geography ,Vol. 7 No. 1 and 2, June-dec ,pp. 66-82.

In case of Andhra Pradesh, there are 64.49 primary schools per lakh population. At district level Chitoor (111.7), Nellore (108.79), Adilabad (103.63), Srikakulam (97.11) and Cuddapah having very high number of primary schools. Where as Khammam, Vishakhapatanam, Anantpur having moderate number of primary school ranging from 65 to 81 primary schools per Lakh population. Surprisingly, Hydrabad having the lowest 9.76 Primary School per lakh population followed by Rangareddy at 31.15.

Increase of number of middle and High schools, Punjab having 11.2 middle and high schools per lakh pop. Bathinda having the highest number of schools with 20.67 middle and high schools per lakh population. Next to it Bathinda having 17.07 schools per lakh population. where, Gurdaspur, Amritsar, Jalandhar, Rupnagar, Firozpur, Faridkot, Mansa, Patiala having moderate number of mid and high school per lakh population. schools there number ranging from 9.88 to 13. 47 school per lakh population. Nawasahar having the lowest with 6.28 schools followed by Hosiarapur, Fatehgarh sahib, Ludhiana, Moga, Muktsar, Sangrur are having low number of schools ranging from 6.28 to 9.87 middle high school per lakh population.

In Andhra Pradesh there are 10.52 middle high schools per lakh population At district level Karimnagar having highest with 16.0 middle and high school per lakh population and Adilabad, Rangareddy Mehbubnagar, Nalagonda, Warangal having very high number of schools ranging from 13.48 to 16.0 middle and high schools per lakh population, where as Nizamabad, Hydrabad, Khammam, Cuddapah, Chitoor having moderate number of schools ranging from 10.96 to 13.47 primary and high schools per lakh population. Where as Guntur district having the lowest with 5.91 middle and high school per lakh population followed by Srikakulam, Vizinagnaram, Vishakhapatanam, E-Godavari, W-Godavari having 5.91 to 8.43 middle and high school per lakh population.

The coefficient of variation is very high in both the indicators. In Primary School per lakh population it is 32.92% and 25.46% in Andhra Pradesh and Punjab Respectively. Whereas for middle and high school the coefficient of variation is 32.8% and 39.95% in Andhra Pradesh and Punjab respectively. This shows that there is a high disparity among the district in the availability of educational infrastructure

especially number of middle and high schools in both the states. It indicates that society has not given much more accessibility for the education.

Composite index for levels of infrastructural development (ANALYSIS)

The study distribution of social and economic overheads like medical, postal, educational, transport and communications, facilities is necessary. These overheads has cumulative impact upon the population dynamics of any region. The complexity of interrelationship can be understood by bringing them (with their respective weightage to one platform. In the present study, these are seven indicators of infrastructural have been taken. As they have been already discussed individual.

These indicators are as follows :-

(i)Road length per 100 km^2,

(ii) Number of post offices per lakh population,

(iii) Number of telephone connections per 100 population,

(iv) Number of PHCs per lakh population,

(v) Number of hospitals and dispensary beds per lakh population.

(vi) Number of primary schools per lakh population,

(vii) Number of middle and high schools per lakh population.

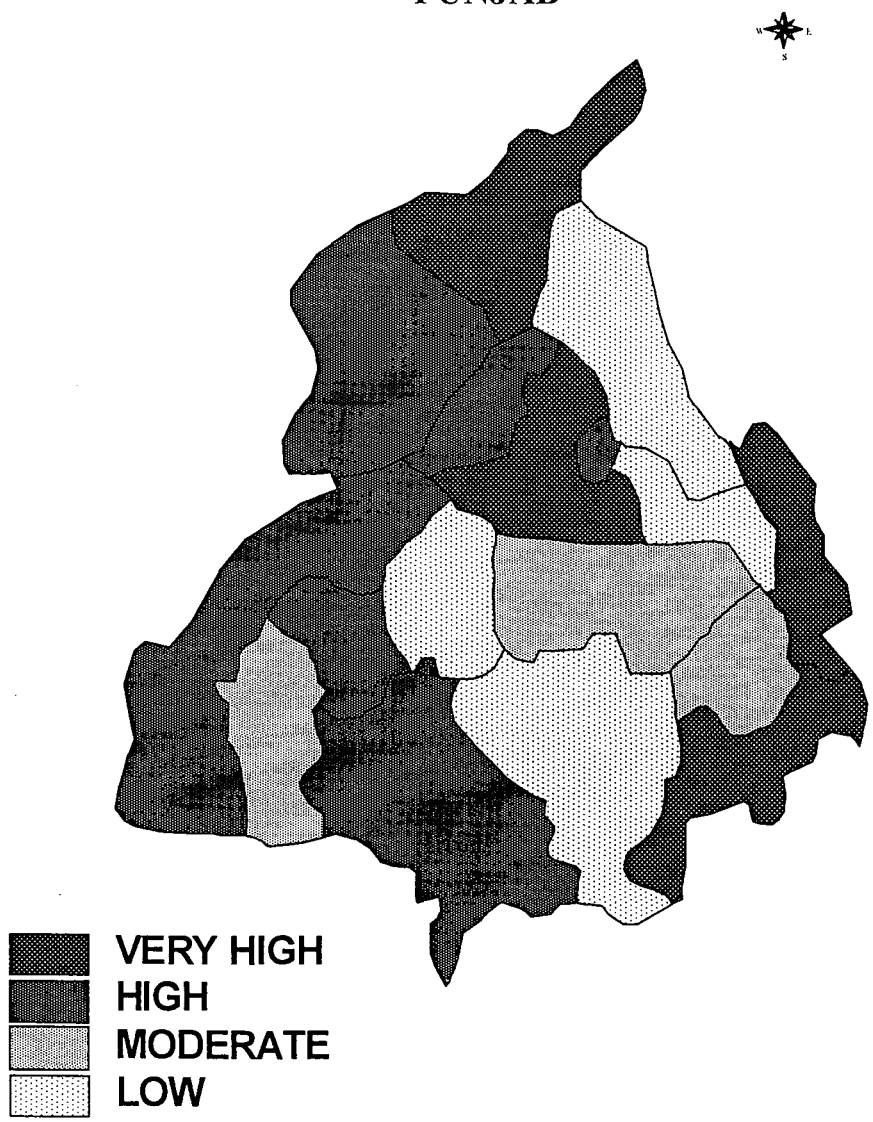
The composite index have been prepared to show the cumulative impact of these infrastructural indicators to their respective states.

In Punjab, Gurdaspur, Jalandhar, Rupnagar and Patiala having the very high level of infrastructural development. As Jalandhar dominants in high ranking in most of the infrastructural development, e.g., road density, number of post offices, availability of telecommunication but have less in educational infrastructure. Where as Gurdaspur and Patiala having very high availability of educational and health infrastructure. Rupnagar dominants in educational infrastructure mode them in highly developed districts. Ludhiana and Hosiarapur having high level of development of infrastructure. In Ludhiana roads and post offices as well health infrastructure are the major factor of infrastructural development; where in Hosiarapur availability of post

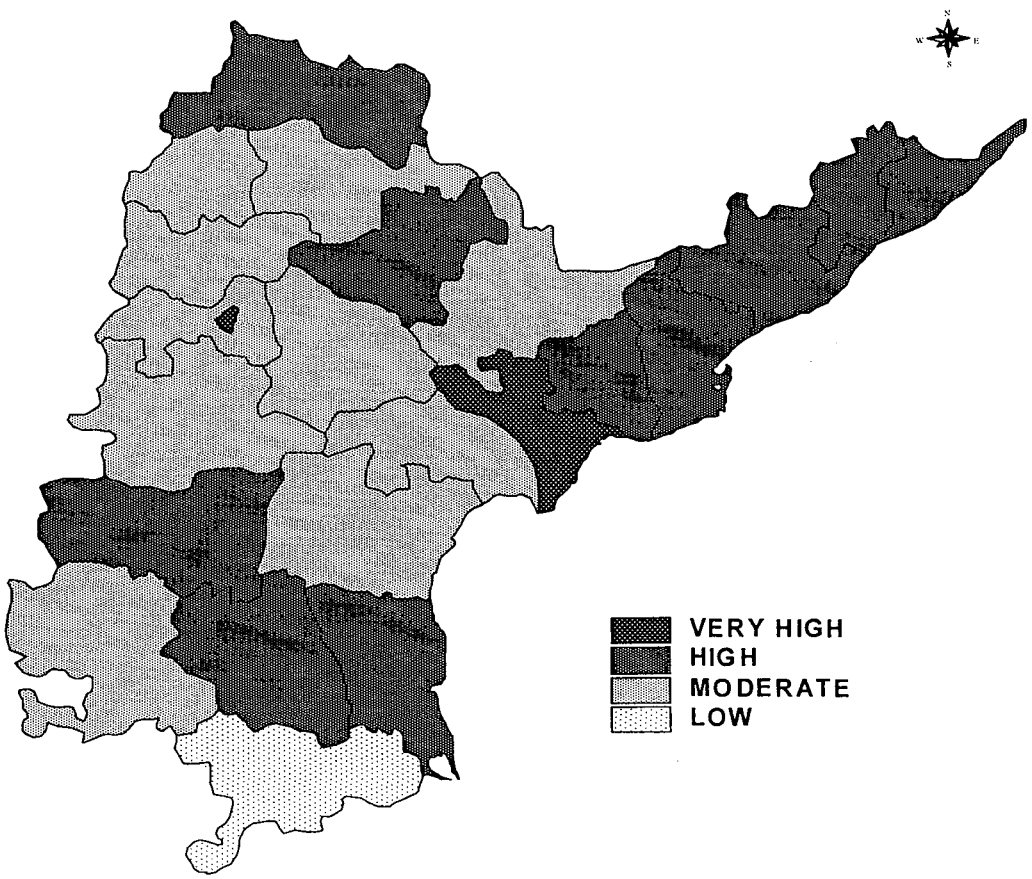
COMPOSITE INDEX FOR INFRASTRUCTURAL DEVELOPMENT:

PUNJAB			ANDHRA PRADESH		
Districts	Factor Score	Rank	Districts	Factor Score	Rank
Jalandhar	3.075	1	Hydrabad	6.671	1
Rupnagar	3.02	2	Krishna	3.027	2
Patiala	2.972	3	Vishakhapatanam	2.826	3
Gurdaspur	2.888	4	Chitoor	2.814	4
Kapurthala	2.867	5	W- Godavari	2.719	5
Amritsar	2.792	6	Nellore	2.68	6
Bathinda	2.763	7	Cuddapah	2.675	7
Firozpur	2.72	8	E-Godavari	2.537	8
Mansa	2.655	9	Kurnool	2.536	9
Faridkot	2.654	10	Adilabad	2.495	10
Ludhiana	2.574	11	Vizinagnaram	2.483	11
Muktsar	2.558	12	Warangal	2.46	12
Fatehgarh sahib	2.397	13	Srikakulam	2.343	13
Sangrur	2.38	14	Karim nagar	2.335	14
Moga	2.252	15	Guntur	2.334	15
Nawasahar	2.216	16	Khammam	2.269	16
Hosiarapur	2.194	17	Prakasam	2.185	17
			Nizamabad	2.179	18
			Medak	2.171	19
			Anantpur	2.146	20
			Nalagonda	2.135	21
			Rangareddy	2.113	22
			Mehbubnagar	2.106	23

LEVELS OF INFRASTRUCTURAL DEVELOPMENT, PUNJAB



LEVELS OF INFRASTRUCTURAL DEVELOPMENT, ANDHRA PRADESH



offices and road played major role in infrastructural development. So, these five districts having very high and high levels of infrastructural development, i.e., infrastructurally developed districts. Rest of the districts are under developing, where the availability of infrastructure needed to increase.

In Andhra Pradesh, the capital city Hyderabad shows maximum level of infrastructural development followed by Krishna, having very high level of infrastructural development. Hyderabad dominates in all seven indicators of infrastructural development in Andhra Pradesh, where Krishna having high levels of Health infrastructure, and roads and post offices are the major factor of infrastructural development. Among the high levels of infrastructural development districts, Adilabad, Warangal, Srikakulam, Vizinagaram, Vishakhapatanam, East Godavari, Kurnool, Cuddapah and Nellore. These districts shows moderate level of infrastructural facilities in all seven indicators. So, these very highly and highly developed districts are considered as developed districts of Andhra Pradesh in terms of infrastructural development. Rest of the districts are having moderate level or low levels of development, kept in underdeveloped category.

IV.6. Indicators of Banking Assistance

IV.6.i. Bank Credits (Rs. per capita)

The banking transaction in terms of deposits and credits especially to agriculture sector is an important way for economic and social development of the state. In Indian context, it could be by the central or the state level banking services. The present analysis is restricted to the deposits open capita, credit to per capita and to the agriculture sector.

In case of Punjab, the average bank credit is 5687 Rs. per capita. At district level Ludhiana with Rs. 15,835 having highest. Where as Patiala (6580 Rs. per capita), Jalandhar (6170 Rs. per capita), Kapurthala, Rupnagar, Amritsar having high credits from banks is Punjab. Moga, Firozpur, Muktsar, Faridkot, Bathinda, Mansa, Sangram, Nawasahar having moderate credits per capita between 2087 to 3793 Rs. per capita. Hosiarapur having the lowest with 1379 Rs. per capita followed by Gurdaspur (1996 Rs. per capita).

In case of Andhra Pradesh the average credits from different banks is Rs. 3358 per capita. The capital city have enormously high with Rs. 23670 per capita. Rangareddy and Vishakhapatanam having quite high credits Rs. 3957 and Rs. 4988 respectively. Whereas Medak, East Godavari, West Godavari, Krishna, Guntur, Prakasam, Nellore having credits ranging from Rs. 2286 to Rs. 3336 per capita. Rest of the district are between Rs. 934 to Rs. 2285 where Khammam the lowest with Rs. 934 credit per capita.

The coefficient of variation is very high in both the states in case of Andhra Pradesh it is 49.78% where as in Punjab it is 70.42% which indicates that diversification or development of banking facilities as well the availability of loan is highly uneven and is more in Punjab.

IV.6.ii. Bank deposits (Rs. per capita)

Prolonged and direct efforts to raise food production played a dominant role in social and economic development. The time credits for good performance which asserts the stability in agricultural output is needed to generate income through entering in the export market. There is a need to understand the development of banking facility which provides society an asset to go for saving as well utilize to their requisite time. These two state show a major level of development in this aspect it is necessary to see the bank deposits in these states. In Andhra Pradesh the bank deposit is Rs. 4857 per capita. Among the districts, the capital city having very high level of bank deposits with Rs. 30745, being a capital city and the nature of employment status of the population led the more submission of money in the bank. Next to it is the industrial city Vishakhapatanam with Rs. 6998 per capita. But the district Nalagonda having least bank deposits shows very low level of surplus of money i.e., the backwardness of the region. Rest of the regions having above Rs. 3000 per capita but far below the national level.

In Punjab the average bank deposits is very high not only than the Andhra Pradesh but more than the national average. Among the districts, Jalandhar having Rs. 38022 per capita bank deposits followed by Kapurthala Rs. 26692, Amritsar and Ludhiana among the low deposits, Firozpur having the lowest with Rs. 4312 per capita followed by Bathinda Sangrur, and Gurdaspur.

It indicates that in terms of bank deposits Punjab having very high level of development which provides surplus money to the people whereas Andhra Pradesh having an economically backward region and of low income groups. The coefficient of variation is quite high in both the states. In Andhra Pradesh it is 39.35% whereas in Punjab it is much more than that i.e., 60.96%. This shows that variability among the deposits to the bank is concentrated to the particular regions especially to the cities rather than the rural areas.

IV.6.iii. Bank credits to agriculture (Rs. per capita)

For the development of agriculture, the credit to farmer is a biggest asset. Banking facilities does inculcates this facility more for their profitable work. An analyzing this assistance from the bank will provide the picture of level of development both in terms of banking facilities and the agricultural development in these two states. In Punjab the credit to agriculture is Rs. 1069 per capita. Among the districts, Faridkot having the highest with Rs. 1493 per capita, followed by Sangrur, Bathinda and Firozpur having more than Rs. 1100 bank deposits per capita. Whereas, Hosiarapur (297 per capita), Gurdaspur, Amritsar, Kapurthala and Rupnagar having less than 900 Rs. per capita bank deposits.

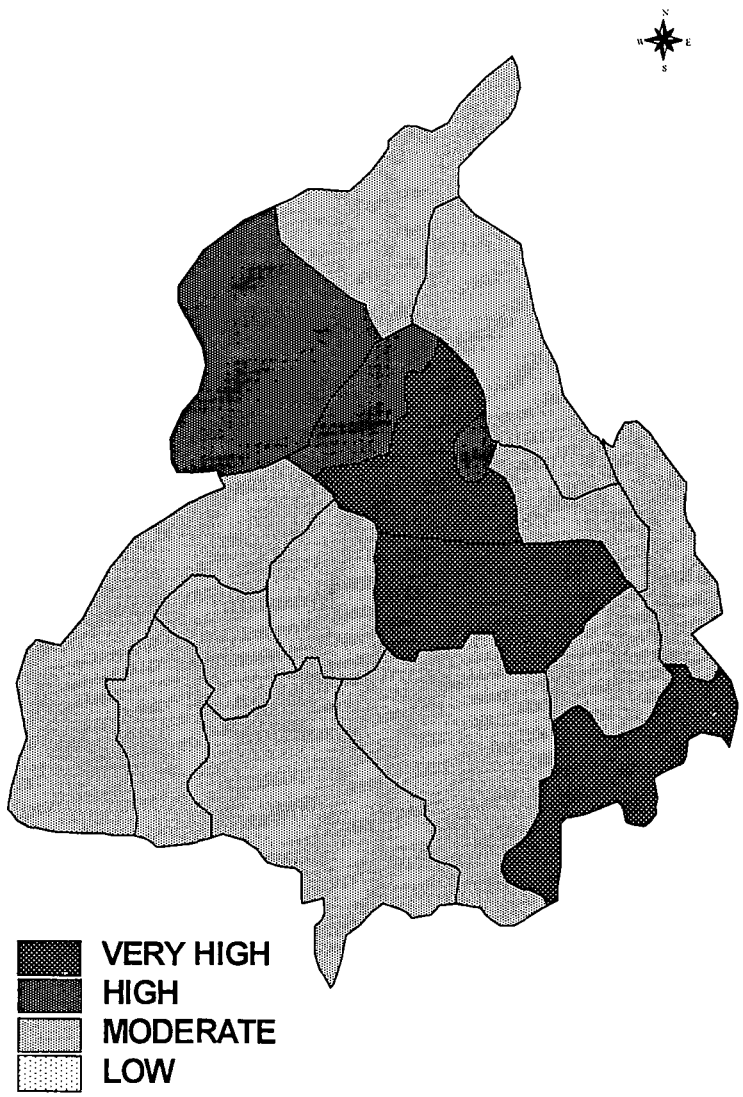
Composite Index for the Levels of Banking Assistance (ANALYSIS)

The extent of banking facilities has great impact upon the high pace of development, which generates enormous demand for capital formation, especially in he developed areas for construction of urban infrastructure including public amenities and housing. Prolonged and direct efforts to raise food production has prayed a primary role in social and economic development. Bank credits to agriculture has played a significant role in it. But by discussing the indicators of banking assistance differently gave individual picture. There is a necessity to analyse the commutative impact of all the levels of assistance, which can provide the performance of banking to developed and undeveloped regions. For this purpose, composite index has been prepared to see the impact of Banking Services on the levels of development in Punjab and Andhra Pradesh.

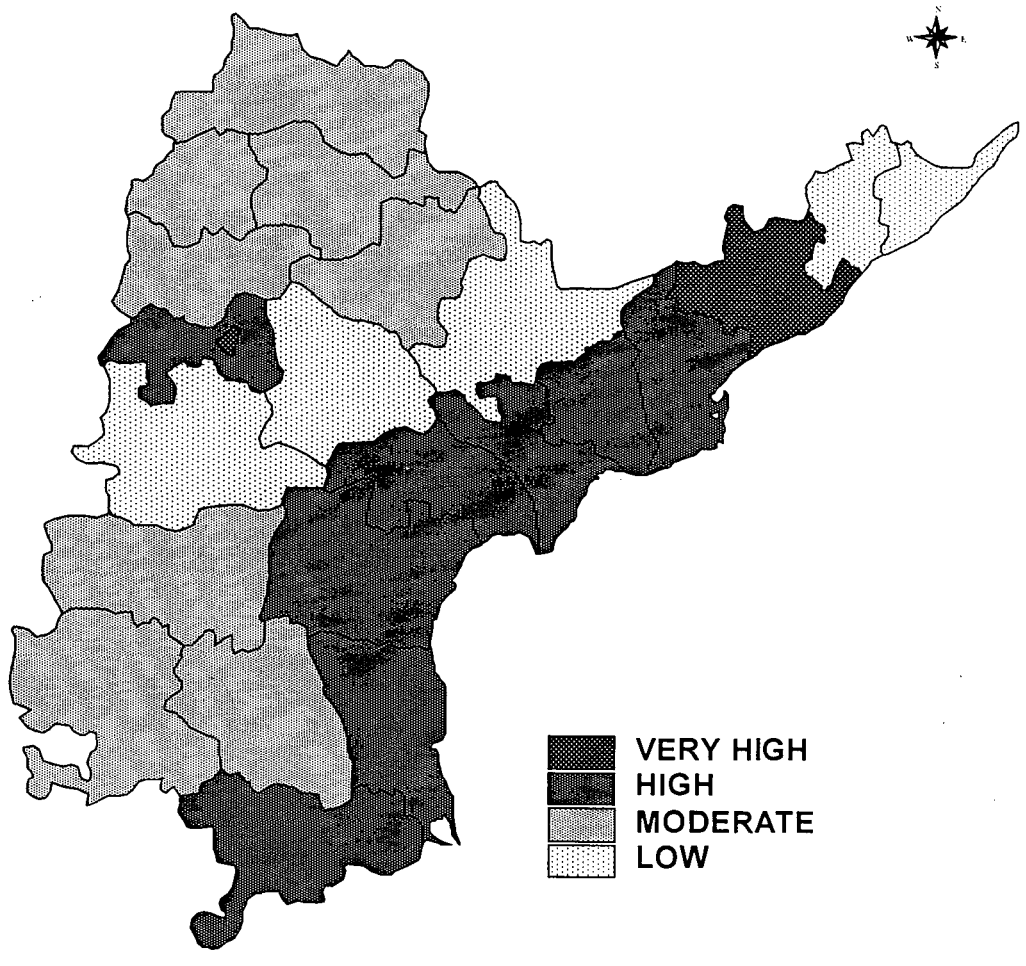
COMPOSITE INDEX FOR THE LEVELS OF BANKING ASSISTANCE:

PUNJAB			ANDHRA PRADESH		
Districts	**Factor score**	**Rank**	**Districts**	**Factor score**	**Rank**
Ludhiana	3.487	1	Hydrabad	10.41	1
Jalandhar	3.171	2	Vishakhapatanam	2.284	2
Patiala	2.537	3	Krishna	1.787	3
Kapurthala	2.29	4	Rangareddy	1.701	4
Amritsar	1.717	5	Guntur	1.682	5
Rupnagar	1.653	6	Nellore	1.638	6
Faridkot	1.551	7	W- Godavari	1.581	7
Nawasahar	1.549	8	Prakasam	1.555	8
Moga	1.527	9	Chitoor	1.477	9
Sangrur	1.438	10	E-Godavari	1.378	10
Mansa	1.413	11	Medak	1.301	11
Bathinda	1.403	12	Nizamabad	1.295	12
Muktsar	1.396	13	Cuddapah	1.269	13
Fatehgarh sahib	1.332	14	Anantpur	1.114	14
Firozpur	1.242	15	Warangal	1.1	15
Gurdaspur	0.934	16	Kurnool	1.077	16
Hosiarapur	0.699	17	Karim nagar	1.028	17
			Adilabad	0.889	18
			Mehbubnagar	0.827	19
			Nalagonda	0.821	20
			Srikakulam	0.806	21
			Khammam	0.722	22
			Vizinagnaram	0.661	23

LEVELS OF BANKING ASSISTANCE, PUNJAB



LEVELS OF BANKING ASSISTANCE, ANDHRA PRADESH



For making composite index, three indicators have been chosen. They are

(i) Bank deposits (Rs. per capita)

(ii) Bank credits (Rs. per capita) and

(iii) Bank credits to agriculture (Rs. per capita).

In Punjab, Jalandhar, Ludhiana, Patiala having very high level of banking assistance. Jalandhar and Ludhiana having mainly very high level of bank deposits (Rs. per capita) as well bank credits (Rs. per capita) where as in Patiala bank credits to agriculture (Rs. per capita) and bank deposits (Rs. per capita) are major factor for the very level of banking assistance. Amritsar and Kapurthala having high level of banking assistance. It is mainly due to very high bank deposits (Rs. per capita) in these two districts. Where Fatehgarh Sahib is the only district. Show very low level of banking assistance in Punjab. Rest of the districts having moderate level of banking assistance. They can be says as under developed districts in terms of levels of banking assistance.

In Andhra Pradesh, Hydrabad and Vishakhapatanam are the two districts showing very high level of banking assistance. These two are highly urbanized and industrialized. Among the indicators and bank credits (Rs. per capita), bank deposits (Rs. per capita) is very high to these districts played significant role in banking assistance, where as Rangareddy, East Godavari, West Godavari, Krishna, Guntur, Prakasam, Nellore and Chitoor having high level of banking assistance. Since, these districts are agriculturally developed districts having quite high level of a bank credits to agriculture to the major factor for this purpose. These districts having very high and high level of levels of banking assistance, i.e. they are developed districts in terms of levels of banking assistance. Mehbubnagar, Nalagonda, Khammam, Vizinagnaram and Srikakulam are the districts having low level of banking assistance even at each level. Rest of the districts having moderate level of banking assistance.

IV.7 Levels of Regional Development in Punjab and Andhra Pradesh (ANALYSIS)

After examining the pattern and levels of development in the two states, it is very difficult to measure the pattern of development and its relationship with the key indicators by considering each indicator separately. In the preceding chapters, composite indices of the levels of social, infrastructural, agricultural development, banking assistance and work force participation has been constructed. But the individual index is not enough to show the levels of overall development of different districts of Punjab and Andhra Pradesh. It may be possible that these districts have developed in one sector but may not in the other. Therefore, an attempt has been made here to construct a composite index of development by combining the all twenty two indicators of different aspects.

The districts have been classified in to four categories, viz. Very high, high, moderate and low level of development categories. The classification of these districts on the basis of factors obtained by constructing composite index.

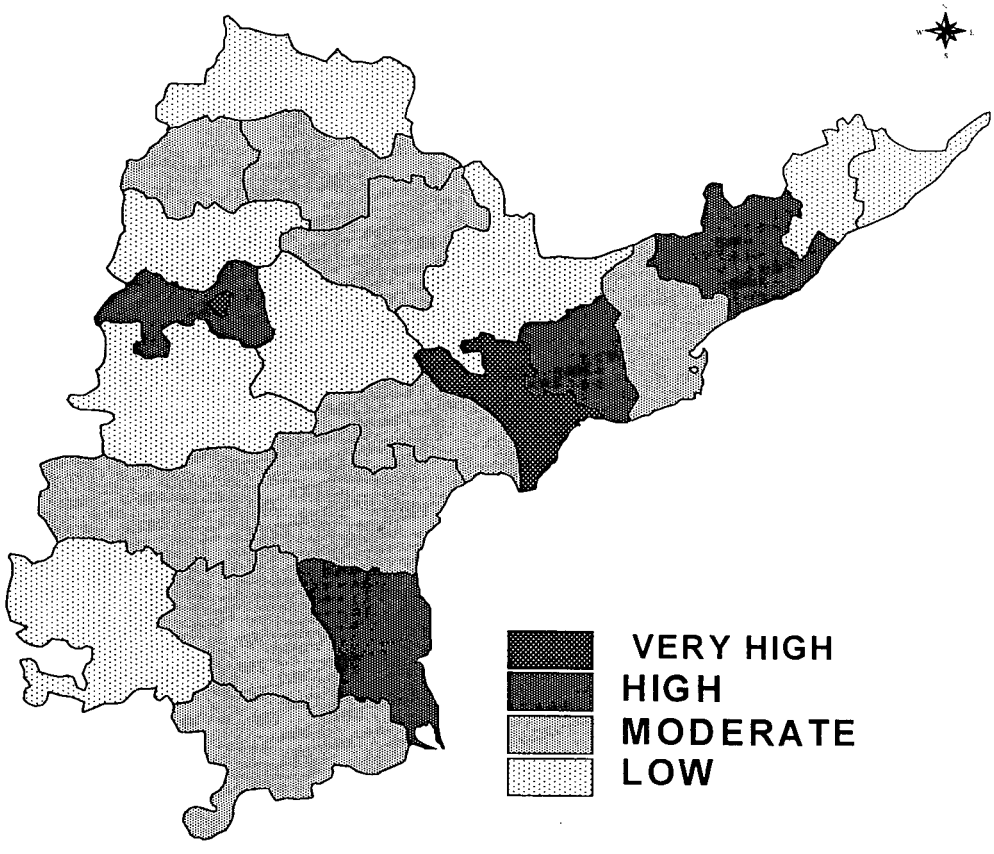
In Punjab, Jalandhar, Ludhiana, Patiala, having very high levels of development. Though these districts having very low level of social development, but in the level of banking assistance, infrastructure workforce participation and agricultural development rank high or very high. Gurdaspur, Kapurthala and Rupnagar having high level of development. Rupnagar shows very high level of infrastructural and social development and moderate level of workforce participation is the major reason behind is to become a highly developed districts. Where Gurdasur having high level of social development and workforce participation is the major cause of it. For the level of agricultural development is very high as well a high level of banking assistance (ed.) to a high level of over all development of it. These districts shows very high or high of development, taken as developed district for the further study.

Amritsar, Nawashar, Moga, Firozpur, Muktsar and Bathinda having moderate level of development. Though districts like Moga, Muktsar, Bathinda having very high level of agricultural development as well work force participation but less social, infrastructural and banking facilities bring down their over all development to a

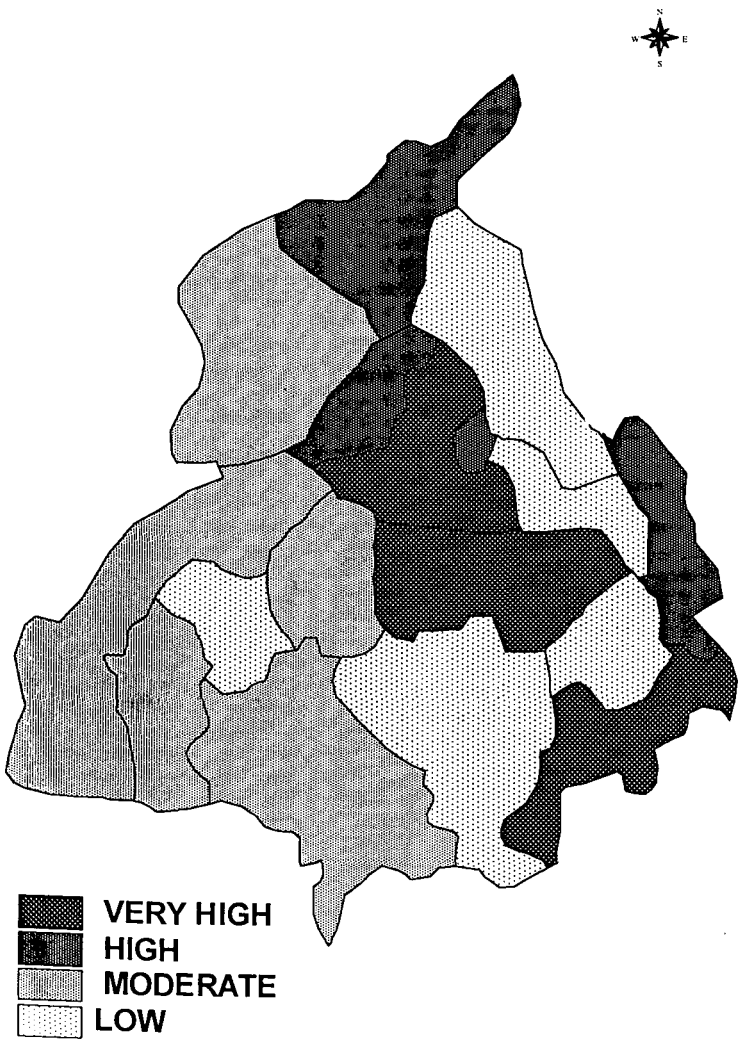
COMPOSITE INDEX FOR THE OVERALL REGIONAL DEVELOPMENT OF PUNJAB AND ANDHRA PRADESH

Andhra Pradesh			Punjab		
Districts	Factor score	Rank	Districts	Factor Score	Rank
Hydrabad	18.907	1	Jalandhar	6.033	1
Krishna	5.167	2	Ludhiana	5.914	2
Rangareddy	4.95	3	Patiala	5.603	3
W- Godavari	4.89	4	Rupnagar	5.345	4
vVishakhapattnam	4.806	5	Kapurthala	5.274	5
Nellore	4.607	6	Gurdaspur	4.928	6
Nizamabad	4.571	7	Bhatinda	4.906	7
E-Godavari	4.448	8	Mansa	4.774	8
Karim nagar	4.424	9	Firozpur	4.773	9
Guntur	4.408	10	Muktsar	4.746	10
Chitoor	4.383	11	Amritsar	4.742	11
Cuddapah	4.217	12	Moga	4.566	12
Wrangal	4.211	13	Faridkot	4.47	13
Kurnool	4.166	14	Sangrur	4.405	14
Prakasham	3.993	15	Fatehgarh sahib	4.338	15
Medak	3.975	16	Hosiarpur	4.327	16
Adilabad	3.954	17	Nawasahar	4.22	17
Srikakulam	3.836	18			
Nalagonga	3.831	19			
Anantpur	3.789	20			
Vizinagaram	3.733	21			
Khammam	3.663	22			
Mehbubnagar	3.502	23			

LEVELS OF REGIONAL DEVELOPMENT, ANDHRA PRADESH



LEVELS OF REGIONAL DEVELOPMENT, PUNJAB



development with most of the key indicators.

Districts like Hosiarpur, Faridkot, Sangrur and Fatehgarh Sahib shows low level of development. Though Fatehgarh sahib having high level of agricultural development but low or moderate level of development with the the indicators. Rest of the districts having low moderate level of development with all the indicators.

So, the moderately and low developed districts having less development with most of the key indicators kept as underdeveloped districts for the further study.

In Andhra Pradesh, West Godavari and Hydrabad shows very high level of overall development. Hydrabad emerged with a very high factor value, shows a primate city of Andhra Pradesh. It has very high levels of development with all the indicators. Where as in West Godavari, shows social, infrastructural and banking services with very high or high levels of development is the main reason for its very levels of development.

Nizamabad, Rangareddy, Nalagonda, Krishna, East Godavari, Vishakhapatanam, Srikakulam, Prakasam, Nellore and Chitoor shows high levels of development. These districts having high level of social and infrastructural development is the major reason. Where Krishna having very high level of development in these two indicators along with agricultural development but in workforce participation led high level of development.

The districts show very high and high level of development are taken as developed districts of Andhra Pradesh for the further study.

Where as Adilabad, Karimnagar, Medak, Vizinajaram, Cuddapah and Anamtpum shows moderate level of development. Though Adilabad having levels of workforce Participation and infrastructural development is very high and high respectively but with rest of indicator is quite low, shows low level of development. Rest of the districts having moderate or low levels of development with other indicators.

Mehbubnagar and Guntur having low levels of development. These two districts emerged as most backward districts of Andhra Pradesh. So, the districts having moderate and low levels of development does not more emphasis to for the increase in the indicators of development. So, in the present study, they kept as underdeveloped districts of Andhra Pradesh.

CHAPTER V

Interrelationship between Indicators of Demographic Development and other Dimensions of Development

The link between development and indictors of demographic dynamics assumed global importance at the time of World Population Conference held in Bucharest in 1974.But more comprehensive conceptualization of development does need evaluation because of complexity of this concept.[40] Here, an attempt has been made to analyze the interface between the indicators of demographic development and the other levels of development to see the impact of these indicators of development on the selected indicators of population .

For this purpose, the cumulative levels of development of five different indicators has been correlated with the selected indicators of population at state and district level. Where the districts has been divided in to two categories, developed and under developed, in the preceding chapter through the cumulative impact of these five developmental indicators, in the respective states.

V.1.iInterrelationship between Population Growth And levels of Social Development:

Among the underdeveloped districts of Punjab, social indictors emerged as dominant force in bringing down the population growth Rate. It has negative and moderate correlation with total fertility rates (-0.577 at 5% level), with female literacy rates (-0.574 at 5% level) and with change in female workforce participation between 1991-2001 (-0.61 at 5% level). In the developed districts, change in female workforce participation in last decade is found to be high and positive. It is 0.799 at 5% level of Significance. It clearly indicates that in the developed regions female worker increased and associated to population growth, of which migration may be the cause. Where as the under developed areas negative correlation between TRF and population growth indicates the out migration from these underdeveloped areas,

[40] Kurian, N.J. (2000): Widening Regional Disparities in India: Some Indicators, EPW, Feb .12, pp. 538-550.

whereas rise in female literacy rate and increase in female workforce participation rate has moderately reduced the population growth in under-developed areas.

If we look at the interrelationship between population growth rate and selected indicators of social development. It is found to be moderate and negatively correlated. It is –0.408 at 5% level of significance. But, in the developed districts, the correlation between these two indicators is quite insignificant. This shows that inspect of social development is quite high in reducing the population growth, whereas social development has not given much inspect on reduction of population growth, may be nullified by the immigration to those regions.

In case of Andhra Pradesh, social indicator emerged as dominant force in reducing the population growth rate. Female literacy rate shows high and positive correlation in case of under-developed districts. It is 0.706 at 5% level of significance. Though stated female literacy rate is less than 40% in these districts but still increase in the population may be due to other reasons. Increase in female literacy over last decade is moderately and negatively correlated with population growth rate. It is –0.612 at 5% level of significance. It shows increase the female literacy led reduction in the natural correlated. It is –0.618 at 5% level of significance. It indicates that empower of women through bringing them into mainstream of development has great impact in reducing the population growth rate.

But in developed districts the correlation between the population growth rate and indicators of social development is found to be quite insignificant. At state level there is not such significant correlation between these two variables.

It can be concluded that the developed districts do not have such impact of indicators of social development over population growth, immigration to these regions may be the major cause. Same situation arises with Punjab in their developed districts, whereas underdeveloped districts shows that high lack of social development can led to low growth rate of population; where out / in migration to the respective region must be look at.

V.1.ii. Interrelationship between Population Growth And levels of Infrastructural Development:

Infrastructure and development is synonymous to each other .Increase in the quality and quantity of infrastructures has a great impact upon the human population. The availability of social amenities provide a better quality of life[41] . In this context , it is necessary to see the impact of the selected indicators of infrastructure in these two states .

In Punjab, impact of infrastructure on population growth is moderate and positive. It is 0.606 at 1% level of significance, where in case of underdeveloped districts it correlation between selected infrastructural development is strong and positively correlated. It is 0.893 at 1% level of significance. But in case of developed districts the correlation between these two is quite insignificant. It shows that the underdeveloped region.

Among the underdeveloped districts of Punjab, infrastructural development emerged as dominant force. Availability of Primary Health Centers per lakh population shows high and positive correlation with population growth. It is 0.848 at 1% level of significance. Availability of middle and high schools per lakh population shows moderate and positive correlation with population growth. It is 0.567 at 5% level of significance. It indicates that among the infrastructure, availability of primary health centers and number of middle and high schools played dominant role in reducing the population growth. In developed districts, Road density and the availability of number of middle and high schools per lakh population played a dominant role in reducing population growth rate. The correlation is 0.799 and –0.925 at 5% and 1% levels of significance respectively. Higher the accessibility through roads has perhaps led immigration to these regions, whereas increase of educational infrastructure to these region led more awareness in bringing down the population growth rates.

In case of Andhra Pradesh, there is no such significant correlation between the levels of infrastructural development at state level. Among the underdeveloped

[41] Kundu,A. (1985), Analysis of structural change in the Indian economy – Certain Avoidable Anomalies in Usages of the population Census Data , Population Geography ,Vol. 7 No. 1 and 2, June-dec ,pp. 66-82.

districts, road density shows negative correlation with population growth, it is –0.628 at 5% level of significance. It shows road as an infrastructure has provided some modernity, awareness to the mainstream of life and followed the low population growth rate, whereas among developed districts availability of number of middle and high schools per lakh population has provided moderate and positive impact over population growth. It is 0.545 at 5% level of significance. It may be due to the immigration of students for the study and may have some logging facilities to these regions.

So, in case of Punjab availability of PHCs in the underdeveloped region, which bring down the mortality rates especially IMR, played a dominant role, along and number of middle and high schools led the population growth whereas undeveloped districts availability of roads and middle and high played dominant role in population growth. In case of Andhra Pradesh availability of roads in underdeveloped region and among developed districts number of middle and high schools played the major role with population growth rate.

V.1.iii. Interrelationship between Population Growth And levels of workforce participation:

The high growth of population is an unhealthy sign for the economic system. Shift of people from lower productive agricultural employment to yet another sectors marked by low productive employment. In this context it is necessary to see the level of workforce participation and its impact on the growth of population. Though both the states marked by low level of natural increase but having high degree of variation in each level of workforce participation. So, it will be interesting to see the impact of overall workforce participation on population growth in these two states.

Among the underdeveloped districts of Punjab, levels of workforce participation is moderately and negatively correlated with population growth rate. But among the developed districts these no significant correlation between these two variables. It clearly indicate that rise of non-primary activities along with some household industries as well female workforce has led some decrease in the population growth rate. Among the underdeveloped and developed districts the

correlation between these variables is quite insignificant. This shows at overall level there is no such inspect of workforce participation over the population growth rate.

In case of Andhra Pradesh, the impact of workforce participation has insignificant correlation with the population growth rate at state, underdeveloped district and developed district level as well.

This shows in both the state the impact of workforce participation is not found. Only in underdeveloped districts having moderate and negative impact in checking the population growth rate. Only in underdeveloped districts having moderate and negative impact in checking the population growth.

V.1.iv. Interrelationship between Population Growth And levels of Banking Assistance:

Banking facilities provides a high pace of development which generates enormous demand for capital formation especially in the developed areas. It is interesting to see the impact of the assistance from banking on population growth

Banking assistance shows no such correlation with population growth rate in Punjab at district level, as well to developed and underdeveloped district level. The same case follows to the Andhra Pradesh.

It shows Banking Assistance has no such impact on the growth rate of population to states ,i.e., capital generation has not made any significant impact on reducing or increasing the population.

V.1.v. Interrelationship between Population Growth And levels of Agricultural Development:

In a country where majority of population depends upon agriculture, the level of agriculture must have great impact over the population growth. In India both Punjab and Andhra Pradesh are having great significance in terms of agricultural production .It will be interesting to see the impact of levels of agricultural development upon population growth.

Levels of agricultural development shows moderate and positive correlation with the population growth in Punjab. It is 0.483 at 5% level of significance. Among the underdeveloped districts it is moderate and positively correlated. It is 0.527 at 5%

level of significance. It shows that agricultural development had led prosperity and followed the decrease more mortality as well fertility rate. But these components of demography should be look into it. At indicator wise analysis, Gross Sown area (% of R.A.) show high and negative correlation. It is –0.731 at 5% level of significance. So, among the underdeveloped districts increase GSA played the dominant role in bringing down the population growth, whereas in case of developed districts, there is no such significant correlation between population growth and agricultural development in Punjab.

In case of Andhra Pradesh, underdeveloped districts show moderate and negative correlation with agricultural development. It is –0.665 at 5% level of significance. Among the three indicators, Gross sown Area show high and negative correlation with population growth. It is –0.731 at 5% level of significance in case of underdeveloped districts, wherein case of developed districts the correlation between these two variables is quite insignificant. This shows that increase in the gross sown area (% of R.A.) in the low developed districts has additional impact in reducing the population growth rate.

So, in case of agricultural development Gross Sown Area plays the dominant role in reducing the population growth rate and it is delimited to the backwards districts in both the states.

V.2.i Interrelationship between Crude Birth Rate And levels of Social Development:

The dominant influence of behavior and norms imprinted by regionally prescribed social systems and points out that the social systems that characterize the Southern region provide women more exposure to the outside world, more voice in family life, and more freedom of movement than do the social system in the North.[42] In this context it is necessary to see the interrelationship between these two indicators.

In case of Andhra Pradesh, at state level and among the underdeveloped districts levels of social development shows high and negative correlation with Crude Birth rates. It is –0.728 at 1% level of significance. Among the indicators of social

[42] Dyson, Tim and Mick Moore, 1983."On Kinship Structure, Female Behavior autonomy and demographic Behavior in India" pdr 9(1):35-60.

development, total literacy shows high and negative correlation. It is –0.800 at 1% level of significance. It shows that in backward area literacy played major role in bringing down the crude birth rate. Female literacy rate show high and negative correlation with CBR. It is –0.829 at 5% level of significance. It indicates that female literacy rate have more powerful influence than the total literacy rate in reducing the CBR. Growth of female literacy rate (1991-2001) shows moderate and positive correlation with CBR. It shows that rise in female literacy led more female infant birth i.e. change in altitude of female and later couple. This motivational factor may have played some role in more CBR. Besides to it, high the literacy led more employment to women, enhance the economic value followed need of the baby. Change in female workforce participation (1991-2001) shows very high and negative correlation –0.814 at 1% level of significance. Increase in the workforce, female become more economic and the need of child may be the major cause of it.

In case of developed districts, the correlation between CBR and indicators of social development is moderate and negative. It is –0.612 at 5% level of significance. Among the indicators, total literacy rate, female literacy rate is moderate and negative where, growth of female literacy (1991-2001) and change in female workforce participation shows moderate and positive correlation with CBR. It is –0.630, -0.665 with TPR and FLR respectively at 5% level of significance. The correlation between CBR and change in FWFP and with female literacy growth is 0.689 and 0.681 at 5% level of significance in each case. The developed regions exhibits that total literacy rate and female literacy rate has direct impact on reducing the CBR; whereas change in FWFP (1991-2001) and Growth of female literacy rate .

At levels of social development, the correlation with crude birth rate is insignificant in case of Punjab. Among the underdeveloped districts it is moderate and negatively correlated. It –0.591 at 5% level of significance. Total literacy rate shows moderate and negative correlation with it. It is –0.611 at 5% level of significance. This implies that literacy of people is directly subjected in reducing the crude birth rate. Female literacy rate also shows moderate and negative correlation with crude birth rate. It is –0.647 at 5% level of significance. It shows rather female population female literacy is more prominent in reducing the crude birth rate. Increase in the

female literacy rate (1991-2001) also shows moderate and negative correlation. It is – 0.580 at 5% level of significance change in female workforce participation also shows moderate and negative correlation. It is –0.587 at 5% level of significance. So, in the underdeveloped districts of Punjab TLR, FLR, FLRgr, FWFPch shows moderate and negative correlation with crude birth rates.

In case of developed districts of Punjab, growth in female literacy (1991-2001) show high and positive correlation. It is 0.746 at 5% level of significance. It may be due to decrease in female infant mortality especially social prejudices in favour of female, these reasons does need investigation have positive response to the CBR.

So, it is observed that crude birth rate having high correlation with the cumulative as well individual social indicator. Punjab shows moderate correlation (-0.591) between CBR and social indicator where as in case of Andhra Pradesh it is high (-0.728). In Punjab, among underdeveloped district TFR, FLR, FLRgr, FWFPch shows moderate and negative correlation with CBR, where in case of Andhra Pradesh, underdeveloped districts these indicators shows high and negative correlation with CBR. It indicates that motivational factor is more powerful in the family through women's enhancement in Andhra Pradesh than Punjab.

Where in Punjab developed districts, only growth of FLR shows high and positive correlation with CBR. In Andhra Pradesh TLR, FLR, Gr.FLR, Ch.FWFP all have moderate correlation. It is positive with FWFPCh and GrFLR, where negative with TLR and FLR. This shows that dominant influence of behavior and norms imprinted by regionally prescribed social systems and points out that the social systems that characterize the Southern region provide women more exposure to the outside world, more voice in family life, and more freedom of movement than do the social system in the North.

V.2.ii. Interrelationship between Crude Birth Rate And levels of Infrastructural Development:

The availability of health, educational infrastructure and the other basic amenities ld the mortality rate lower and also have significant impact upon the birth rates .In the developed regions, where the infrastructural facilities are quite high, shows lower the birth rate , where education and health plays the dominant role . It

will be interesting to see the impact of overall infrastructure on birth rates in these two states.

In Punjab, at state level correlation between infrastructural development and CBR is moderate and negative. It is –0.420 at 5% level of significance. Among the underdeveloped districts of Punjab, shows moderate and positive correlation between CBR and infrastructural development. It is 0.635 at 5% level of significant. Level of development of infrastructure has various ways of availability of hospitals, awareness through schools, roads provide accessibility other regions, post-offices, telephone correlation etc, their cumulative impact led direct and indirect impact in reducing the CBR. At different indicator level, the correlation between number of telephone connection and CBR is moderate and positive. It is 0.523 at 5% level of significance, whereas the correlation between number of primary schools per lakh population with CBR is high and positive. It is 0.690 at 5% level of significance. It indicates that among all infrastructure these two indicator played significant role and positive role in increasing the CBR in underdeveloped districts of Punjab, whereas among the developed districts, there is no significant correlation between cumulative infrastructural availability and CBR. At individual indicator level the correlation with CBR is also found insignificant.

In Andhra Pradesh, the correlation between the availability of infrastructure and CBR is low and negative. It is –0.346 at 5% level of significance, whereas among the underdeveloped districts, density of roads and telephone connections having moderate and negative correlation with CBR. It is –0.611 and –0.567 at 5% level of significance in each case, where as among developed districts availability of PHCs, has moderate and negative correlation with CBR. It is –0.578 at 5% level of significance. Number of middle and high schools shows moderate and positive correlation. It is 0.640 at 5% level of significance. It indicates that PHCs plays some important role in decreasing the CBR in developed districts where as availability of middle and high school led increase in CBR.

So, it is observed that availability of infrastructure in both the states have low and negative correlation with CBR. Among the developed districts no such correlation is found in case of Punjab, where in case of Andhra Pradesh number of polls and middle and high schools have moderate impact on reducing the CBR. Among

underdeveloped districts of Punjab having moderate and positive correlation, where number of telephones and primary schools having moderate impact. But in underdeveloped districts of Andhra Pradesh, availability of roads and telephone connection having moderate impact on reducing the CBR.

V.2.iii. Interrelationship between Crude Birth Rate And levels of Workforce Participation:

Workforce participation in the non-primary sectors as well in HHIs shows a step towards advancement of a society, especially the female workforce participation .It has significant impact on the birth rates. So, it is necessary to examine the role of workforce in relation to crude birth rates in these two states.

In Punjab, workforce participation shows low and negative correlation with CBR. It is –0.42 at 5% level of significance. Among the underdeveloped districts the correlation between these two variable is quite insignificant. At indicator wise, percentage of worker in non-primary sector shows moderate and negative correlation. It is –0.544 at 5% level of significance, where as among developed district, the correlation between these two variable is found to be insignificant. It is also insignificant at all the indicators of workforce participation. This shows only percentage of workers have to play some role in decreasing the CBR in the under developing districts. Definitely the increase in urban characteristics of population led change in socio-economic conditions of t6he people and have direct and indirect impact on the reduction CBR.

In case of Andhra Pradesh, workforce participation do not show any significant correlation with CBR. Among the under developing districts the correlation between those variables is found to be insignificant. The under developing districts shows moderate and positive correlation only with workers engaged in household industries. It is 0.525 at 5% level of significance . Among the developed districts the correlation between these two variables is quite insignificant. The developed districts also show insignificant correlation between these two variables.

So, the level of workforce participation has no such correlation with CBR in Andhra Pradesh, where as Punjab has low and negative correlation. Among the underdeveloped districts only workers engaged in non-primary sectors shows

moderate and negative correlation in Punjab. In Andhra Pradesh, only workers engaged in household industries shows moderate and positive correlation. Among the developed districts, no correlation is found. It indicates that nature and change of workforce has little impact over the growing regions where in the developed region may be other factors than this one dominants.

V.2.iv. Interrelationship between Crude Birth Rate And levels of Agricultural development :

Development of agriculture shows generation of income, which has direct impact upon the family size and functions. Though, these two states show high levels of agricultural development especially in the developed districts. CBR is an important component of population. It is necessary to see the impact of the agricultural development on CBR in these two states.

In Punjab, Agricultural development shows insignificant correlation with CBR. Among the underdeveloped regions the correlation between those two variable is also insignificant. At underdeveloped districts only Gross Irrigated Area (% of GSA) shown moderate and negative correlation with CBR. It is –0.637 at 5% level of significance. Increase in GIA led increase in the income through food production, may change the life style of people and have negative impact, on reducing the CBR. Among the developed districts the correlation between those two variables is found to be quite insignificant.

In case of Andhra Pradesh, agricultural development shows moderate and negative correlation with CBR. It is –0.564 at 1% level of significance. Among the underdeveloped districts the correlation is –0.637 at 5% level of significance between these variables. Among the influence of indicators, Gross irrigated area (% of GCA) shows moderate and negative correlation with CBR. It may be the rising of economy due to increase in GIA and led subsequently in reduction of CBR. Among the developed districts, the cumulative correlation between these two variable is quite insignificant. Among the three indicating. Gross irrigated area shows moderate and negative impact with the CBR.

So, it is observed that among the three selected indicator for agricultural development only GIA has moderate and negative influence over the CBR. In case of

Punjab, it is only in the case of underdeveloped districts. But in Andhra Pradesh, it is at state level, underdeveloped district and developed districts. It shows that irrigation facilities enhanced much more in reducing the CBR indirectly through the agriculture.

V.3.i.Interrelationship between Crude Birth Rate And levels of Banking Assistance:

Banking services provides a path towards high income and development, which has significant and negative impact on the CBR especially in the developed regions .The study of interrelation between these two variables, is necessary to understand the impact of banking service to these states at district level.

In Andhra Pradesh, impact of Banking assistance shows low and negative correlation with CBR. It is –0.397 at 5% level of significance. Among the underdeveloped districts, it shows insignificant correlation with CBR. Bank deposits (Rs. per capita) shows high and negative correlation with CBR in underdeveloped districts. It is -0.704 at 5% level of significance. Increasing deposits shows more surplus from better economic potential led the CBR down. Among the developed districts, banking assistance shows very high and negative correlation with CBR. It is –0.805 at 5% levels of significance. Among the indicators of banking development, credits to agriculture (Rs. per capita) shows high and negative correlation with CBR. It is –0.743 at 1% level of significance.

In case of Punjab, the levels of banking assistance show low and moderate and negative correlation with CBR. It is –0.433 at 5% level of significance. Among the underdeveloped districts, levels of banking assistance shows insignificant correlation with CBR. Some of the indicator is found to be significant among underdeveloped districts. Among the developed districts levels of banking assistance show very high and negative correlation with CBR. It is –0.805 at 1% level of significance. Among the indicator of developed districts, bank deposits shows very high and negative correlation with CBR.

It shows that banking assistance as a whole play dominant role in reducing the CBR. Among the three selected variables, bank deposits (Rs per capita) show very high degree of correlation and is negative. So, raising the surplus, i.e. the economy of the individual or family, the decrease in the CBR is quite prominent.

V.3.iiInterrelationship between TFR and levels of Social Development:

Changes in total fertility rate transformed the 'average 'life course. These major changes in demographic regimes also have long-lasting effects on population size, growth and structure that have been extensively studied and debating during the last 50 years.[43]

Female literacy has a negative and highly significant effects on fertility rates .The fact that female literacy has a strong impact upon fertility even after controlling for male literacy, and that the later contributes nothing to low fertility independently of female literacy, also points in the same direction; since unabsorbed variables, in many cases are likely to influence male as well male education.[44] So, the study of impact between these two variables is necessary in this context to see the interrelationship between them at district level.

The correlation between the total fertility rate and levels of social development is quite insignificant in Punjab. Among the underdeveloped districts, TFR shows moderate and negative correlation with levels of social development. It is –0.591 at 5% level of significance. Among the indicators of social development; TLR, FLR, FLRgr and FWFP ch shows moderate and negative correlation with the CBR. It is –0.651, -0.682, -0.557 and –0.587 respectively each at 5% level of significance, where as among the developed districts TFR does not show any significant correlation with levels of development in Punjab. Among the indicators of social development in developed districts, the correlation with TFR to all five indicators is insignificant.

In case of Andhra Pradesh, levels of social development shows moderate and negative correlation, it is –0.605 at 5% level of significance. Among the underdeveloped districts the correlation between these two indicators is moderate and negative. It is –0.535 at 5% level of significance. Among the indicators of social developments TLR, FLR and FWFP Ch. Show very high and negative correlation with TFR. It is –0.809, -0.830 and –0.810, each at 1% level of significance, where FLR gr shows moderate and positive correlation with TFR. Among the developed

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[43] Bouge, Donld J. and Amy Ong Tsui.1978"Dclining world Fertility: Trends, Causes and Implications" Population Bullatin33 (4).Washington D.C.: Population Reference Bureau.

[44] Dreze J. and Murthi Mamta." Fertility, Education and Development in India", PDR 17,March 2001.

districts, levels of social development shows moderate and negative correlation with TFR. It is –0.674 at 5% level of significance. Among indicators of social development TLR, FLR, FLRgr, FWFPgr are high and negatively correlated. It is –0.726, -0.770, -0.807 and –0.788 each at 1% level of significance. It indicates that increase of literacy, as well more freedom to women led the decrease in total fertility rates in the developed districts of Andhra Pradesh.

So, we can say that total literacy rate is high and negatively correlated in case of Andhra Pradesh but insignificant in Punjab at state level, where as among the underdeveloped districts, it is high and negative in case of Andhra Pradesh, where moderate and negative in Punjab, among the four indicators, viz., TLR, FLR, FLRgr, FWFPch, where as among the developed districts, these indicators are moderate and negatively correlated in case of Punjab, where quite high and negative in case of Andhra Pradesh. It clearly shows that increase in the literacy level and more freedom to women led reduction in the total fertility rates as it is more prominent in Andhra Pradesh than Punjab.

V.3.iii.Interrelationship between TFR and levels of Infrastructural Development:

The population of the developed regions has essentially completed their transitions, where the developing regions population growth continued at high pace, despite substantial reduction in the fertility over the past several decades*.The availability of health, educational and other civic amenities is needed to look into these states to analyze the level of influence of infrastructural facility in this context.

Levels of infrastructural development shows moderate and negative correlation with TFR in Andhra Pradesh. It is –0.424 at 5% level of significance developed districts, it shows moderate and negative correlation. It is –0.535 at 5% level of significance. Among indicators of infrastructural developments, availability of roads and number of telephone connections are the only two indicators shows moderate and negative correlation. It is –0.612 at 5% level of significance. Among the indicators of infrastructural development in developed districts, number of PHCs per lakh population and number of middle and high schools per lakh population are the only two indicators shows (moderate and negative) correlation to TFR. It is –0.578

and –0.640 at 5% level of significance in each case. This shows that connectivity plays the major role through roads and telephone connection in the underdeveloped regions where health and educational infrastructure plays the major role in reducing the TFR in the developed districts of Andhra Pradesh.

In case of Punjab, levels of infrastructural development do not show any significant correlation with TFR. Among the underdeveloped districts there is high and positive correlation with TFR. It is 0.635 at 5% level of significance. Among indicators of infrastructural development availability of PHCs shows moderate and positive correlation. It is 0.60 at 5% level of significance, where number of telephones per lakh population shows high and positive correlation with TFR it is 0.706 at 5% level of significance. It shows that in underdeveloped regions availability of PHCs and telephone made a positive impact on increasing the TFR. Among developed districts, there is no significant correlation is found. Among the indicators of infrastructural development in developed districts, none of them having significant correlation with the TFR.

It shows that in case of Andhra Pradesh there is moderate and negative correlation between levels of infrastructural development and TFR; where in Punjab correlation is quite insignificant between these two variables. Among the underdeveloped districts the correlation between these two indicator is moderate and negative in case of Andhra Pradesh where in case of Punjab, it is moderate but positive, i.e. infrastructural availability increases the TFR. Among the developed districts there is moderate and negative correlation between infrastructural development in Andhra Pradesh where there is no such correlation is found in between them in Punjab. It indicates that infrastructural development has checked the TFR at moderate level only in case of Andhra Pradesh.

V.3.iv.Interrelationship between TFR and levels of Workforce Participation:

In a fast growing society, the workers engaged in non-primary sectors ,in HHIs, and the female workforce participation shows high and negative relationships.[45] In case of Punjab and Andhra Pradesh, it interesting to see the impact of level of development in the workforce upon the total fertility rates.

[45] Danhoe, D.A., "Measuring Women's work in Developing countries"PDR25(3):543-547(Sept.1999).

Levels of workforce participation shows an insignificant correlation with TFR, in Punjab. Among the underdeveloped districts of Punjab the correlation between these variables is also quite insignificant. Among the indicators of workforce participation of underdeveloped districts, only percentage of workers engaged in non-primary sectors shows moderate and positive correlation with TFR. It is 0.600 at 8% level of significance, where in developed districts of Punjab, the correlation between these two variables is quite insignificant. Among the three indicators, all shows insignificant correlation with TFR.

In case of Andhra Pradesh, level of workforce participation show insignificant correlation with TFR. Among the underdeveloped districts, it also shows insignificant relationship. Among the indicators of workforce participation only workers engaged in HHI shows moderate and positive correlation with TFR. It is 0.525 at 5% level of significance. Among the developed districts of Andhra Pradesh shows insignificant correlation with TFR. Among the indicators of workforce participation only worker engaged in HHI shows moderate and positive correlation with TFR. It is 0.5% at 5% level of significance.

So. on analyzing the level of workforce participation in between these two states, at state level there is no correlation with TFR, where as only indicator, i.e. percentage of workers in HHI shows moderate and positive correlation in underdeveloped districts of both states. Among the developed districts only in Andhra Pradesh shows moderate correlation. So, among the workforce participation %age worker engaged in HHI played major and positive role in the increase of TFR.

Interrelationship between total fertility rate and levels of Agricultural Development

Impact of agriculture on TFR shows moderate and positive correlation; in Punjab it is 0.459 at 5% level of significance. Among the underdeveloped districts of Punjab, the correlation between these two variables is quite insignificant. Among the indicators of agricultural development, none of them shows significant correlation with TFR where among the developed districts, there is an insignificant correlation between these two variables. But among the indicators of agricultural development percentage of Gross Irrigated area (% of GCA) shows moderate and positive correlation with TFR. It is 0.562 at 5% level of significance.

In case of Andhra Pradesh, the correlation between levels of agricultural development show moderate and negative3 correlation with TFR. It is –0.567 at 1% level of significance. Among the underdeveloped districts, levels of agricultural development shows moderate and negative correlation. It is –0.580 at 5% level of significance. Among the indicators of agricultural developmetn in underdeveloped districts percentage of gross irrigated area (% of GCA) shows moderate and negative correlation. It is –0.634 at 1% level of significance. Where fertilizer consumption (kg per ha) also shows moderate and negative correlation with TFR. Among the developed districts, the correlation between levels of agricultural development and TFR is quite insignificant. Among the indicators of agricultural development, only Grow irrigated area (% of GCA) shows high and negative correlation with TFR. It is –0.692 at 5% level of significance.

So, it can be concluded that at state level Punjab has moderate and positive where in case of Andhra Pradesh little higher than Punjab, i.e. –0.567 but negative correlation between agricultural development and TFR. Among the underdeveloped districts in case of Punjab there is no correlation but in case of Andhra Pradesh it is moderate and negative, i.e., increase in levels of agricultural development has led to substantial decrease in TFR in underdeveloped regions. Among the developed districts Gross Irrigated Area (% of GCA) shows moderate and positive correlation with TFR in Punjab, where in Andhra Pradesh GIA (% of GCA) shows moderate and negative correlation, i.e., in case of Punjab increase in GIA led to increase in TFR where in Andhra Pradesh it led to substantial decrease in TFR, in developed districts.

V.3.v.Interrelationship between TFR and levels of Banking Assistance:

Levels of Banking assistance shows moderate and negative correlation in Punjab. It is –0.433 at 5% level of significance. Among the underdeveloped regions, the correlation between these two variables is quite insignificant. Even no such indicator shows any significant correlation with TFR. Among the developed districts, levels of banking assistance shows insignificant correlation with TFR. But among indicators of banking assistance, only ₹ bank deposits per capita shows very high and negative correlation with TFR. It is –0.961 at 5% level of significance. Levels of more income generation and surpluses led to decrease in the TFR at very high level is found.

In case of Andhra Pradesh, level of banking assistance shows low and negative correlation with TFR. It is –0.397 at 5% level of significance. Among the underdeveloped states, it shows moderate and negative correlation. It is –0.566 at 5% level of significance. Among the indicators of levels of banking assistance in underdeveloped districts, only, bank deposits (Rs per capita) shows high and negative correlation. It is –0.799 at 1% level of significance. Among the developed districts, the correlation between levels of banking assistance and TFR is quite insignificant. Credit to the agriculture (Rs per capita), the only indicator of the developed districts show moderate and negative correlation with TFR. It is –0.621 at 5% level of significance.

So, it is found that level of banking assistant played some role at moderate level in reducing the TFR in both the states. Among underdeveloped districts these no such impact of it on IFR in Punjab but in Andhra Pradesh it has moderate impact in reducing the TFR, especially bank deposits per capita shows very important role in its association to TFR. Where among the developed districts, at state level there is no association is found in Punjab as well in Andhra Pradesh. But bank deposits per capita in case of Punjab and credits to agriculture (Rs / capita) shows quite high its association in reducing the TFR among the developed districts of the respective states.

Interrelationship between Urban population and the levels of social Development:

Urbane characteristics is more a economic phenomena, where social development is least important .In the present study, among the selection of social indicators the major emphasis has been given to the development of female, as she is the most marginalized section of society at all levels. So, there is need to see the impact of levels of social development in these two states at district level.

The urban population shows moderate and positive correlation with the indicator of social development in Punjab. It is 0.480 at 5% level of significance. Among the underdeveloped districts, it shows moderate and negative correlation to the urban population. It is –0.535 at 5% level of significance. Among the indicators change in female workforce participation is found to moderate and negatively correlated. It is –0.611 at 5% level of significance. Among the developed districts, the correlation between levels of social development and urban population is found to be moderate and positive. It is 0.561 at 5% level of significance. Among the indicators of

correlation with urban population. It is 0.864 at 5% level of significance. Where female literacy growth rate (1991-2001) shows very high and positive correlation with urban population. It is 0.877 at 1% level of significance.

In Andhra Pradesh, there is a moderate and positive correlation between the levels of social development and urban population. It is 0.641 at 1% level of significance. Among the underdeveloped districts there is a high and positive correlation between these two variables. It is 0.709 at 5% level of significance. Among the indicators of social development in underdeveloped districts, total literacy rate shows high and positive correlation with urban population. It is 0.699 at 5% level of significance. Where change in female workforce participation (1999-2001) shows moderate and positive correlation with urban population. It is 0.594 at 5% level of significance. Among the developed districts, levels of social development shows moderate but positive correlation with the urban population. It is 0.674 at 5% level of significance. Among the indicators of social development in developed districts, total literacy rates, female literacy rates and change in female workforce participation played the dominant role in urbanization to these districts. The correlation is 0.673, 0.651 and 0.632, each at 5% level of significance.

On analyzing the interrelationship between the levels of social development and urban population, it indicate that Punjab have moderates and positive relation but quite less as compare to Andhra Pradesh. In other words, social development played much more in case of Andhra Pradesh than Punjab in urbanization. Of which underdeveloped region having moderate and negative impact in Punjab, where as in case of Andhra Pradesh it high and positive relation with social development, ie, social development and urbanization goes hand in hand in Andhra Pradesh underdeveloped areas , where opposite situation occurred in case of Punjab.

Among the developed districts, the correlation between social development and urban population is little higher in Andhra Pradesh than Punjab. So, at all three levels social development shows much more impact on the urban population in Andhra Pradesh than Punjab. In developed districts of Punjab sex-ratio (0-6 yrs) and female literacy growth rate has very high association with urban population where in

Andhra Pradesh total literacy rte, female literacy rates and change in female workforce participation in last decade shows major association with urban population.

V.4.i.Interrelationship between Urban population and the levels of Infrastructural Development:

Urban areas are characterized by he infrastructural facilities. In the context of population dynamics it is necessary to see the interrelation between these two indicators.

Levels of infrastructural development shows moderate and positive correlation with urban population in Punjab. It is 0.540 at 5% level of significance. Among the underdeveloped districts, infrastructural development shows high and positive correlation with urban population. It is 0.700 at 5% level of significance. Among the indicators of infrastructural development, number of PHCs per lakhj population and number of hospitals and dispensary beds shows moderate and positive correlation. It 0.612 and 0.704 at 5% levels of significance respectively, where among the developed districts, the correlation between these two variables is quite insignificant. Among the indicators of infrastructural development, number of post offices per lakh population, number of PHCs and primary schools per lakh population shows very high and positive correlation with urban population. It is 0.848, 0.750 and 0.853 at 5% level of significance respectively in each case.

In case of Andhra Pradesh, infrastructural facility show very high and positive correlation with urban population. It is 0.868 at 1% level of significance. Among the underdeveloped districts, it shows moderate and positive correlation. It is 0.556 at 5% level of significance. Among indicators of infrastructur5al development number of PHCs and primary schools per lakh population shows moderate and positive correlation with urban population. It is 0.595 and 0.612 at 5% level of significance in each case. Where as among the developed districts, there is a very high and positive correlation between urban population and infrastructural facilities. It is 0.869 at 1% level of significance. Among the indicators of infrastructural development number of PHCs shows moderate and positive correlation. It is 0.626 at 5% level of significance. Road length per 100 km^2 shows moderate and positive correlation. It is 0.566 at 5% level of significance respectively. Number of post offices per lakh population, number

of hospitals and dispensary beds and availability of primary schools show high and positive correlation with urban population. It is 0.760, 0.888, 0.685 at 1% level of significance in each case respectively.

So, it is found here that infrastructural facility has positive and high correlation in case of Andhra Pradesh than Punjab. In underdeveloped districts of Punjab shows high and positive correlation than Andhra Pradesh; where number of PHCs and primary schools per lakh population is the important factor in determining the urban population. Where in developed districts, there is a high positive correlation in case of Andhra Pradesh but the correlation is quite insignificant in case of Punjab. In developed districts of Andhra Pradesh, availability of PHCs, Roads, Post Offices, hospitals and dispensary beds shows strong correlation with urban population.

V.4.ii.Interrelationship between Urban population and the levels of workforce participation:

Urban characteristic of a region indicates the change of its economic activities, from primary to secondary and tertiary activities, and simultaneously followed the weakening of the agrarian base. So, There must be a high and positive relation between the indicators of development of workforce participation and the urban population. The study in this context will be essential to see the level of variation in between the indicators in these states.

Level of workforce participation shows insignificant correlation with % urban population in Punjab. Among the underdeveloped states there is an insignificant correlation with workforce participation as well to its indicators. Among the developed districts, the correlation between workforce participation is very high and positive. It is 0.972 at 1% level of significance. Among the indicators of workforce participation percentage of women in non-primary sector shows strong correlation with urban population. It is 0.897 at 1% level of significance. It shows very high correlation between workers engaged in non primary sectors and 0% urban population.

In case of Andhra Pradesh, the correlation between workforce participation is quite insignificant. Among the underdeveloped districts, the correlation between these two variables is quite insignificant. Among the indicators of work force participation,

percentage of worker engaged in nonprimary activities shows moderate and positive correlation. It is 0.535 at 5% level of significance. Where percentage of worker engaged in HHIs has moderate and negative correlation. It is –0.522 at 5% level of significance. These two factor resulting into no such impact over the percentage urban population. Among the developed districts, there is very high and positive correlation between the workforce participation and % urban population. It is 0.926 at 1% level of significance. Among the indicators of workforce participation, % of worker engaged in non-primary activities and HHI, shows very high and positive correlation with urban population. It is 0.975 and 0.909 at 1% level of significance.

It is found that at state level workforce participation has insignificant correlation with urban population in both states. Among underdeveloped districts there is no significant correlation in Punjab as well in Andhra Pradesh. But in underdeveloped districts of Andhra Pradesh having moderate and positive correlation with worker engaged in non-primary activities along with moderate and negative correlation with % workers engaged in HHI, has nullified the total contribution. But among the developed districts of both % of worker engaged in non-primary activities and HHI has very strong impact with percentage urban population; it is little higher in case of Andhra Pradesh.

V.4.iii.Interrelationship between the Urban Population and the levels of Banking Assistance

Banking facilities are more prominent in the urban areas. It assists in the income generation at a very high level .The interrelationship with urban population vary according to the levels of urbanization and its access to their hinterland.[46] In Andhra Pradesh there are very few centers are urbanized, where Punjab having large extent of urbanization. So. it is necessary to study the nature of banking assistance in these states.

Impact of Banking Assistance shows very high and positive correlation with % urban population in Punjab. It is 0.825 at 1% level of significance. Among the underdeveloped districts it shows insignificant correlation. Among indicators of banking assistance also there is an insignificant correlation. Among the developed

[46] Patric, S.P., Thinking about Development,PDR,11(4),Jan (1984), Pp.21-42.

districts, there is very strong and positive correlation between these two indicators. It is 0.926 at 1% level of significance. Among the indicators, Bank credit (Rs / capita) show very high correlation with % urban population. It is 0.946 at 1% level of significance.

In case of Andhra Pradesh, levels of banking assistance shows very high correlation with % of urban population. It is 0.912 at 1% level of significance. Among the underdeveloped districts, there is an insignificant correlation between these two variables. Where though Bank deposits (in Rs / capita) shows moderate and positive correlation. It is 0.566 at 1% level of significance. Among the developed districts, there is very high and positive correlation between levels of banking assistance and % urban population is found. It is 0.918 at 1% level of significance. Among the indicators, Bank deposits (Rs / capita) and Bank credits (Rs / capita) shows very high and positive correlation with % urban population. It is 0.916 and 0.934 at 1% level of significance in each case.

This is to be observed that there is a very high correlation between Banking assistance and % urban population in both the states. Where backward region having least impact of banking on urban population. But among the developed region there is very high correlation especially bank credits as having very impact in both the states wher bank deposits in case of Andhra Pradesh. So, definitely banking services play a dominant role in developing the urban population.

V.4.iv. Interrelationship between the Urban Population and the Levels of Agricultural Development:

Prolonged and direct effort to raise the food production has played a primary role in social and economic development. A succession of two or three good harvests has invariably prompted policy maker to take credit for the good performance, to assert the stability in agricultural output has been achieved, and to prepare plans for entering the export market.[47] Agricultural development provides basic items fir food production and other associated goods to the urban areas. There is a need to understand this interlinkages in thee two states.

[47]Vidwans ,S. (1996) : Regional Development Disparities : Easy to Measure Hard to Cure, Journal of Indian school of Political Economy ,Vol. VIII, No. 3, July- Sept. ., pp.409-415.

Agricultural development has moderate and positive impact over the urban population in Punjab. It is 0.459 at 5% level of significance. Among the underdeveloped districts, there is moderate and positive correlation between these two indicators. It is 0.502 at 5% level of significance where as Gross Sown Area (% of R.A.) and Gross Irrigated area (% of GCA) shows moderate and positive correlation on % urban population. It is 0.523 and 0.539 at 5% level of significance in each case. Among the developed districts, there is no correlation between the agricultural development as well with the indicators with % urban population.

In case of Andhra Pradesh there is an insignificant correlation between agricultural development and urban population. Among underdeveloped and developed district even at each indicator level the correlation with urban population is quite insignificant.

It shows that, in Andhra Pradesh the urbanization has take place without any impact of agricultural development at state level as well in developed and underdeveloped regions. Where in Punjab, the agricultural development have moderate and positive correlation with the urbanization, especially in the under developing regions. Where Gross Sown area and gross irrigated area having major impact in leading towards urbanization.

CHAPTER VI

SUMMARY AND CONCLUSIONS

The present chapter incorporates the chapterwise summary of main findings and certain conclusion that derived from the study.

In the first chapter of the dissertation an attempt has been made to formulate the necessity of the study, interrelationship among the population characteristics and its relation to the different levels of development. On the basis of the need, the objectives have been constructed.

The second chapter describes the selection of the study regions, variables, which can make the study meaningful in relation to the population and development interface. The methodology has been formulated in order to incorporate the research design for a scientific outcome of the study.

The third chapter shows a general idea of interrelationship between the population and development. The study of this kind is old phenomenon. Scholars of various streams have analysed this sort of study according to their academic background. For this purpose, the overview of the literature has been done to cover from the historical to present context. Right from economists, planner, sociologists, geographer and demographer 's point of view has been understood for this research.

The analysis of data and their cumulative impacted reveals that in Andhara Pradesh there is a high disparity in term of indicates of population, infrastructural and work force participation as well as the in level of agricultural development. Where in Punjab there is a low disparities in case of population indicators as well as agricultural and infrastructural there is high social disparity has been observed in the states.

The cumulative levels of development of five different indicators have been correlated with the selected indicators of population at state and district level. Where the districts have been divided in to two categories, developed and under developed, in the fourth chapter through the cumulative impact of these five developmental indicators (using principle component analysis), in the respective states.

It is observed that the developed districts do not have strong impact on indicators of social development over population growth in Andhra Pradesh, in migration to these regions may be the major cause. Same situation arises with Punjab with their developed districts. Whereas underdeveloped districts shows that lack of social development to a high level , led the low growth rate of population; where types and patterns of out / in migration to the respective region must be the matter of research.

Among the levels of infrastructural development, availability of PHCs in the underdeveloped region of Punjab bring down the mortality rates especially IMR, played a dominant role, along and number of middle and high schools led the low population growth .Whereas undeveloped districts availability of roads and middle and high school high correlation with population growth. In case of Andhra Pradesh availability of roads in underdeveloped region and among developed districts number of middle and high schools played the major role with population growth rate.

The impact of workforce participation is on indicators of population dynamics is insignificant in both the state. But in the underdeveloped districts of these states shows moderate and negative impact in checking the population growth rate ,in these district it has moderate and negative impact in checking the population growth.

In the levels of Banking Assistance, it shows no such impact on the growth rate of population in both the states ,i.e., capital generation has not made any significant impact on reducing or increasing the population. But it may be possible that through some indirect way it has impact over increasing or reducing the population ,is a matter of research.

In case of agricultural development, Gross Sown Area shows a high and negative correlation with population growth. So, it plays the dominant role in reducing the population growth rate but it is delimited to the backwards districts in both the states.

In case of Crude birth rates, in the developed districts of Punjab, only growth of FLR shows high and negative correlation with CBR. But in Andhra Pradesh, TLR, FLR, Gr.FLR, Ch.FWFP all have moderate correlation. It is positive with FWFPCh and GrFLR, where it is negative with TLR and FLR. This shows that dominant

influence of behaviour and norms imprinted by regionally prescribed social systems and points out that the social systems that characterize the Southern region provide women more exposure to the outside world, more voice in family life, and more freedom of movement than do the social system in the North.

The availability of infrastructure in both the states have low and negative correlation with CBR. Among the developed districts no such correlation is found in case of Punjab, where in case of Andhra Pradesh number PHCs and middle and high schools have moderate impact on reducing the CBR. Among underdeveloped districts of Punjab having moderate and positive correlation, where number of telephones and primary schools having moderate impact. But in underdeveloped districts of Andhra Pradesh, availability of roads and telephone connection having moderate impact on reducing the CBR.

The level of workforce participation shows insignificant correlation with CBR in Andhra Pradesh, where as Punjab has low and negative correlation. Among the underdeveloped districts only workers engaged in non-primary sectors shows moderate and negative correlation in Punjab. In Andhra Pradesh, only workers engaged in household industries shows moderate and positive correlation. Among the developed districts, no correlation is found. It indicates that nature and change of workforce has little impact over the growing regions where in the developed region may be other factors than this one is dominant.

Among the three selected indicator for agricultural development, only GIA has moderate and negative influence over the CBR. In case of Punjab, it is only in the case of underdeveloped districts. But in Andhra Pradesh, it is at state level, underdeveloped district and developed districts. It shows that irrigation facilities enhanced much more in reducing the CBR indirectly through the agriculture.

The banking assistance as a whole, having high and negative correlation with CBR, plays dominant role in reducing the CBR. Among the three selected variables, bank deposits (Rs per capita) show very high degree of correlation and is negative. So, raising the surplus, i.e. the economy of the individual or family, the decrease in the CBR is quite prominent.

The total literacy rate shows high and negative correlation in case of Andhra Pradesh but is insignificant in Punjab, at state level. Where as among the underdeveloped districts, it is high and negative in case of Andhra Pradesh, where moderate and negative in Punjab, among the four indicators, viz., TLR, FLR, FLRgr, FWFPch, where as among the developed districts, these indicators are moderate and negatively correlated in case of Punjab, where quite high and negative in case of Andhra Pradesh. It clearly shows that increase in the literacy level and more freedom to women led reduction in the total fertility rates as it is more prominent in Andhra Pradesh than Punjab.

In case of Andhra Pradesh there is moderate and negative correlation between levels of infrastructural development and TFR is found; where in Punjab the correlation is quite insignificant between these two variables. Among the underdeveloped districts the correlation between these two indicator is moderate and negative in case of Andhra Pradesh where in case of Punjab, it is moderate but positive, i.e. infrastructural availability increases the TFR. Among the developed districts there is moderate and negative correlation between infrastructural development in Andhra Pradesh where there is no such correlation is found in between them in Punjab. It indicates that infrastructural development has checked the TFR at moderate level only in case of Andhra Pradesh.

On analysing the levels of workforce participation in between these two states, at state level there is no correlation with TFR is found, where as only indicator, i.e. percentage of workers in HHIs shows moderate and positive correlation in underdeveloped districts of both states. Among the developed districts only in Andhra Pradesh shows moderate correlation. So, among the workforce participation percentage of worker engaged in HHI played major and positive role in the increase of TFR.

The correlation between TFR and agricultural development, at state level, Punjab has moderate and positive where in case of Andhra Pradesh little higher than Punjab, i.e. –0.567 but negative correlation between agricultural development and TFR. It indicates that agricultural development is more dominant in reducing the TFR IN Andhra Pradesh than Punjab. Among the underdeveloped districts in case of Punjab there is no correlation but in case of Andhra Pradesh it is moderate and

negative, i.e., increase in levels of agricultural development has led to substantial decrease in TFR in underdeveloped regions. Among the developed districts Gross Irrigated Area (% of GCA) shows moderate and positive correlation with TFR in Punjab, where in Andhra Pradesh GIA (% of GCA) shows moderate and negative correlation, i.e., in case of Punjab increase in GIA led to increase in TFR where in Andhra Pradesh it led to substantial decrease in TFR, in developed districts.

On analysing the relationship between levels of social development, it reveals that among the developed districts, the correlation between social development and urban population is little higher in Andhra Pradesh than Punjab. So, at all three levels social development shows much more impact on the urban population in Andhra Pradesh than Punjab. In developed districts of Punjab sex-ratio (0-6 yrs) and female literacy growth rate has very high association with urban population where in Andhra Pradesh total literacy rte, female literacy rates and change in female workforce participation in last decade shows major association with urban population.

It is is observed that infrastructural facility has positive and high correlation in case of Andhra Pradesh than Punjab. In underdeveloped districts of Punjab shows high and positive correlation than Andhra Pradesh; where number of PHCs and primary schools per lakh population is the important factor in determining the urban population. Where in developed districts, there is a high positive correlation in case of Andhra Pradesh but the correlation is quite insignificant in case of Punjab. In developed districts of Andhra Pradesh, availability of PHCs, Roads, Post Offices, hospitals and dispensary beds shows strong correlation with urban population

It is found that at state level workforce participation has insignificant correlation with urban population in both states. Among underdeveloped districts there is no significant correlation in Punjab. But in underdeveloped districts of Andhra Pradesh having moderate and positive correlation with worker engaged in non-primary activities along with moderate and negative correlation with % workers engaged in HHI, has nullified the total contribution. But among the developed districts of both % of worker engaged in non-primary activities and HHI has very strong impact with percentage urban population; it is little higher in case of Andhra Pradesh.

This is to be observed that there is a very high correlation between Banking assistance and % urban population in both the states. Where backward region having least impact of banking on urban population. But among the developed region there is very high correlation especially bank credits as having very impact in both the states where bank deposits in case of Andhra Pradesh. So, definitely banking services play a dominant role in developing the urban population.

On analysing the impact of agricultural development over urban population, in Andhra Pradesh the urbanization has take place without any impact of agricultural development at state level as well developed and underdeveloped regions. Where in Punjab, the agricultural development have moderate and positive correlation with the urbanization especially in the under developing regions. Where Gross Sown area and gross irrigated area having major impact in leading towards urbanization.

Conclusion : In Andhra Pradesh the interface between population in the level of the development is more with the levels of social development with all the four indicator of population dynamics, and impact of infrastructure, agriculture is low and negative with CBR and TFR. But banking assistance and infrastructure shows high and positive correlation in Punjab,where the levels of social development is least associated with the indictor of population dynamics. The economic and infrastructural indicators of development shows high interrelationship.

In case of under developed district, the social indicator have high and negative impact on population except urban population in both the states. Infrastrcture and banking assistance having moderate and positive impact on the indicator of populations in Andhra Pradesh but it is moderate and positive in Punjab.

In the developed district, there is high and negative correlation between the indicator of social development with the indicators of population dynamics in A.P. Where there is insignificant interrelationship exist between the indicator of social development with the indicator of population in dynamics in case of Punjab, as it is more economically and infrastructually associated rather than social.

So, it is observed that the interface between population indicators and the other levels of development Punjab is more with the economic and infrastructural in nature where it is more social in Andhra Pradesh.

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Appendix

Data base for the State of Andhra Pradesh (March 2001, Oct. 2000)

	Decedal g.	C.B.R.(20	T.F.R.(200	%of Urban pop.	Sexratio(0-6yr.)	Literacy rate(total)	Lit. rate (F)	f-lit.gr.	fwfp change
Andhra P.	13.86	20.4	2.3	27.08	963	60.11	51.17	8.94	42.23
Adilabad	19.06	23.5	2.7	26.47	944	53.51	41.38	12.13	29.25
Nizamaba	14.98	21.9	2.5	18.04	938	53.26	40.57	12.69	27.88
Karim nag	14.47	19.9	2.2	19.53	955	56	44.19	11.81	32.38
Medak	17.29	23.3	2.9	14.45	947	53.24	40.68	12.56	28.12
Hydrabad	17.18	18.6	1.9	100	951	79.04	73.67	5.37	68.3
Rangared	37.41	22.5	2.6	53.27	970	66.31	57.03	9.28	47.75
Mehbubna	13.97	24.8	3.1	10.59	959	45.53	32.83	12.7	20.13
Nalagong	13.55	21.7	2.6	13.26	964	57.84	45.07	12.77	32.3
Wrangal	14.63	21.7	2.5	19.21	955	58.41	46.54	11.87	34.67
Khamma	15.78	21	2.3	19.8	971	57.72	48.16	9.56	38.6
Srikakula	8.93	20.6	2.4	11	975	55.94	44.19	11.75	32.44
Vizinagara	6.35	20.7	2.5	18.36	979	51.82	40.73	11.09	29.64
vVishakha	15.36	19.6	2.2	39.89	974	59.45	49.99	9.46	40.53
E-Godava	7.3	18.6	2.1	23.33	979	65.49	61	4.49	56.51
W- Godav	7.92	18	2	19.69	973	73.95	69.45	4.5	64.95
Krishna	14.05	18	1.9	32.37	960	69.91	65.05	4.86	60.19
Guntur	7.27	17.7	1.9	27.95	954	62.8	54.17	8.63	45.54
Prakasha	10.72	19.2	2.3	15.28	1000	57.86	45.6	12.26	33.34
Nellore	11.18	18.5	2	22.7	956	65.9	57.24	8.66	48.58
Cuddapah	13.48	19.8	2.3	23.33	952	64.02	50.76	13.26	37.5
Kurnool	18.14	24.5	3	22.57	1518	54.43	41.07	13.36	27.71
Anantpur	14.31	20.6	2.4	22.28	966	56.69	43.87	12.82	31.05
Chitoor	14.54	19.6	2.2	21.69	957	67.46	56.48	10.98	45.5
sd	6.072	2.042	0.336	18.283	114.165	7.631	10.052	2.898	12.675
mean	14.239	20.613	2.367	25.923	985.860	60.279	50.037	10.242	39.795
sd/mean	0.426	0.099	0.142	0.705	0.116	0.127	0.201	0.283	0.318
cv	42.642	9.907	14.188	70.531	11.580	12.659	20.089	28.293	31.849

CONT.D.

	Road length/100 sq.km	Post off/ Lakh pop.	Teleph. connection / lakh pop.	P.H.C./lakh pop.	Hospitals & disp. beds/lakh pop.	Prim sch/ lakh pop.
Andhra P.	58.27	20.9	1.99	1.61	43.6	64.49
Adilabad	45.75	20.95	0.91	0.85	36.79	103.63
Nizamabad	61.89	20.53	1	0.79	33.44	40.08
Karim nagar	67.79	20.93	0.91	1.11	27.28	43.59
Medak	62.31	22.12	0.92	0.89	31.47	52.09
Hydrabad	99.54	14.63	9.84	1.83	164.1	9.76
Rangareddy	69.54	16.81	0.39	1.46	30.2	31.15
Mehbubnagar	54.91	23.38	0.56	0.92	25.23	53
Nalagonga	61.81	21.95	0.75	0.86	22.78	56.29
Wrangal	54.84	23.48	0.82	0.91	48.16	55.6
Khammam	48.89	23.12	0.91	1.16	28.67	67.45
Srikakulam	84.86	19.09	0.45	1.23	31.07	97.11
Vizinagaram	60.37	31.87	0.62	1.72	23.51	94.18
vVishakhapattnam	54.44	17.33	1.73	1.6	69	63.33
E-Godavari	65.16	16.41	2.29	0.89	38.62	56.73
W- Godavari	78.08	18.61	2.21	1.79	22.75	59.11
Krishna	80.57	19.27	2.36	1.73	39.81	56.15
Guntur	66.01	18.31	1.46	0.92	44.45	58.91
Prakasham	53.78	21.28	0.75	1.06	27.24	84.15
Nellore	54.15	21.73	1.04	1.16	51.08	108.79
Cuddapah	49.67	32.69	0.92	1.12	34.98	101.55
Kurnool	44.05	29.51	1.03	1.26	55.8	56.35
Anantpur	51.93	25.4	0.86	0.92	32.03	75.22
Chitoor	70.27	24.25	1.03	0.98	47.88	111.17
sd	13.239	4.526	1.869	0.343	28.439	25.723
mean	62.453	21.856	1.490	1.199	42.081	66.662
sd/mean	0.212	0.207	1.255	0.286	0.676	0.386
cv	21.198	20.708	125.458	28.581	67.581	38.588

CONTD.

	Mid & High sch/ lakh po	Bank deposits(Rs./capit	BankCredit/capita(Rs.)	Bank Credit to Agr.(Rs.)/	G.S.A.(%OF R.A.)
Andhra P.	10.52	4857	3358	658	47.1
Adilabad	15.27	3117	1168	345	34.38
Nizamabad	13.08	3636	1833	682	43.49
Karim nagar	16	3766	1232	407	44.49
Medak	10.63	2389	2567	708	52.36
Hydrabad	12.28	30745	23670	1366	1.36
Rangareddy	13.74	3943	3951	467	41.7
Mehbubnagar	14.58	1780	1286	528	42.28
Nalagonga	13.79	1712	1373	497	45.71
Wrangal	15.51	3115	1627	543	42.64
Khammam	11.68	2394	934	323	29.98
Srikakulam	8.34	2480	1305	300	70.93
Vizinagaram	7.34	1938	1004	298	72.7
vVishakhapattna	6.29	6998	4986	321	37.96
E-Godavari	7.14	3444	2463	622	69.24
W- Godavari	6.32	3151	2507	1053	91.37
Krishna	9.4	5010	3065	720	85.2
Guntur	5.91	4133	3355	632	76.22
Prakasham	9.56	3124	2319	1090	32.78
Nellore	9.67	3141	2619	1114	27.58
Cuddapah	12.82	3422	1869	674	27.8
Kurnool	8.91	2817	1720	539	55
Anantpur	6.75	3162	1508	607	53.19
Chitoor	12.25	4445	2173	666	35.52
sd	3.203	5703.307	4500.249	279.614	20.724
mean	10.741	4529.958	3078.833	631.667	48.374
sd/mean	0.298	1.259	1.462	0.443	0.428
cv	29.819	125.902	146.167	44.266	42.842

CONTD.

	G.I.A.(% OFG.C.A.)	Fert. Cons(k.g./ha)	% non-agr. Worker	% worker(HHI)	Female W.F.P.
Andhra P.	43.67	138.65	37.7	4.5	34.9
Adilabad	13.38	45.78	38.6	8.5	37
Nizamabad	67.38	224.84	42.8	14.1	44.2
Karim nagar	67.39	197.23	40.8	12.5	43.5
Medak	33.03	93.03	32.3	4.1	41.4
Hydrabad	99.27	226.03	99.8	2.1	8.8
Rangareddy	27.39	267.96	59.8	2	25.6
Mehbubnagar	25.1	92.14	26.6	3.8	47.2
Nalagonga	47.62	179.97	32.1	4.3	43.1
Wrangal	54.61	192.16	31.6	4.8	41.8
Khammam	41.98	149.6	27.9	2	39.5
Srikakulam	45.95	92.81	31.6	4.1	38.4
Vizinagaram	36.16	63.39	31.6	3.6	44.6
vVishakhapattnam	36.35	62.92	46.5	2.9	27.8
E-Godavari	60.72	166.98	37.8	3.9	20.4
W- Godavari	86.8	241.76	30.6	2.8	28
Krishna	63.66	241.28	40.8	2.7	29.5
Guntur	45.19	188.08	32.9	2.3	38.7
Prakasham	35.53	161.95	31.5	3.9	42.5
Nellore	84.9	221.22	37.5	4	32.2
Cuddapah	41.4	126.92	36.5	5	32.6
Kurnool	21.7	111.13	31.6	3.4	42.2
Anantpur	17.15	48.64	32.3	5.6	39.5
Chitoor	43.94	88.78	33.7	3.8	35.3
sd	22.132	67.852	14.801	3.018	8.961
mean	47.511	150.969	38.538	4.613	35.779
sd/mean	0.466	0.449	0.384	0.654	0.250
cv	46.583	44.944	38.407	65.436	25.044

Appendix

Data base for the State of Punjab (March 2001, Oct. 2000)

	Decedal g.r.(9	C.B.R.(2001)	T.F.R.(2001)	%Urban pop	pop.density	Sex ratio	Sex Ratio(0-6yrs.)	Total Lit. Rate	Lit. rate (F)
Punjab	19.76	20.1	2.4	33.95	482	874	793	69.95	63.35
Gurdaspur	19.33	20.6	2.4	25.46	588	888	775	74.19	67.31
Amritsar	22.72	21.3	2.7	40	603	874	783	67.85	61.41
Kapurthala	16.34	18.9	2.2	32.59	461	886	775	73.56	67.9
Jalandhar	18.4	17.8	2.1	47.45	742	882	797	77.91	72.93
Hosiarpur	13.81	19.2	2.3	19.66	439	935	810	81.4	75.56
Nawasaha	10.43	18.3	2.2	13.8	463	913	810	76.86	69.52
Rupnagar	23.39	20	2.4	32.46	540	870	791	78.49	71.74
Fatehgarh	18.65	19.2	2.3	28.08	457	851	754	74.1	68.6
Ludhiana	24.79	19.1	2.3	55.8	804	824	814	76.54	72.11
Moga	13.93	19.5	2.4	20.04	400	883	819	63.94	58.96
Firozpur	20.42	23.3	2.8	25.81	329	883	819	61.42	52.33
Muktsar	18.68	20.3	2.6	25.52	297	886	807	58.67	50.59
Faridkot	21.42	19.5	2.4	33.89	376	881	805	63.34	57.09
Bhatinda	19.89	19.6	2.4	29.78	349	865	779	61.51	53.76
Mansa	19.83	21.9	2.7	20.68	317	875	779	52.5	45.07
Sangrur	18.57	20.6	2.4	29.26	398	868	784	60.04	53.29
Patiala	20.31	19.6	2.3	34.98	507	864	770	69.96	62.94
MEAN	18.926	19.933	2.406	30.512	475.111	877.889	792.444	69.013	62.470
SD	3.434	1.264	0.181	9.865	135.633	22.350	18.252	7.990	8.660
SD/MEAN	0.181	0.063	0.075	0.323	0.285	0.025	0.023	0.116	0.139
CV	18.143	6.344	7.523	32.331	28.548	2.546	2.303	11.578	13.863

(PUNJAB) CONTD.

	FLgrR(91-01)	FWFPch(91-01)	Road length/100 sq.km	post off/ Lakh pop	Teleph. Con. / lakh pop.
Punjab	6.6	14.3	127.78	17.17	4.59
Gurdaspur	6.88	10.3	91.21	15.81	3.93
Amritsar	6.44	13.6	77.13	16.23	3.89
Kapurthala	5.66	8.3	98.16	15.59	3.76
Jalandhar	4.98	7.7	119.79	17.26	4.72
Hosiarpur	5.84	12.6	88.82	16.59	3.74
Nawasahar	7.34	29	95.72	14.72	3.72
Rupnagar	6.75	19.2	150.31	16.26	3.29
Fatehgarh sahib	5.5	16.2	112.33	15.15	3.12
Ludhiana	4.43	13.1	152.97	17.06	4.21
Moga	4.98	19.7	95.23	15.17	3.89
Firozpur	9.09	11.1	67.7	16.85	4.32
Muktsar	8.08	15.2	93.33	14.72	4.11
Faridkot	6.25	16.2	76.18	16.66	3.87
Bhatinda	7.75	19.9	61.92	15.68	3.77
Mansa	7.43	17.6	98.9	16.28	3.67
Sangrur	6.75	19.4	71.26	14.77	3.65
Patiala	7.02	13.5	92.52	16.59	4.23
MEAN	6.543	15.383	98.403	16.031	3.916
SD	1.154	4.920	25.127	0.837	0.392
SD/MEAN	0.176	0.320	0.255	0.052	0.100
CV	17.636	31.982	25.535	5.224	10.004

CONTD.

	P.H.C./lakh pop.	Hospitals&Disp.Beds/lakh	Prim sch/ lakh pop.	Mid & High sch/ lakh po
Punjab	1.96	109.69	55.52	11.2
Gurdaspur	2.39	81.98	73.14	13.12
Amritsar	1.77	168.32	53.91	9.91
Kapurthala	1.54	107.91	67.71	15.64
Jalandhar	1.89	119.13	63.5	12.99
Hosiarpur	1.41	56.75	48.25	7.09
Nawasahar	1.01	91.3	51.2	6.28
Rupnagar	2.17	85.61	80.39	11.21
Fatehgarh sahib	1.73	102.01	32.89	9.28
Ludhiana	1.14	114.75	34.36	7.32
Moga	1.48	91.73	31.68	7.72
Firozpur	1.98	91.21	63.96	12.42
Muktsar	1.92	89.71	58.25	8.61
Faridkot	2.12	105.58	40.81	13.28
Bhatinda	2.19	84.48	41.52	20.67
Mansa	2.11	82.73	61.63	9.92
Sangrur	2.14	81.78	45.84	9.32
Patiala	2.31	131.88	63.68	10.97
MEAN	1.848	99.808	53.791	10.942
SD	0.383	23.640	13.700	3.387
SD/MEAN	0.207	0.237	0.255	0.310
CV	20.719	23.685	25.469	30.952

(PUNJAB) CONTD-

.	Bank deposits(Rs.)/capita	Bank credit(Rs./cap	Credit to Agr.(Rs/capit	G.S.A.(%OF R.A.)	G.I.A.(% OFG.C.A.)
Punjab	13912	5687	1069	154.92	94.61
Gurdaspur	8263	1996	528	142.17	78.78
Amritsar	14103	4748	765	163.07	99.21
Kapurthala	26692	5161	648	167.86	101.81
Jalandhar	38022	6710	924	148.32	95.95
Hosiarpur	7642	1379	297	109.73	70.48
Nawasahar	12713	3456	922	106.72	82.7
Rupnagar	13430	4934	648	87.27	78.14
Fatehgarh sahib	11236	2372	933	133.72	82.63
Ludhiana	16921	15835	865	163.18	100
Moga	13672	3273	845	106.23	100
Firozpur	4312	2669	1290	161.7	99.84
Muktsar	11172	2689	976	172.3	99.23
Faridkot	7114	3205	1493	164.21	100
Bhatinda	5231	3144	1390	290.48	98.52
Mansa	9972	3128	992	132.6	90.02
Sangrur	5532	3085	1448	175.5	100
Patiala	13472	6580	1906	158.87	96.78
MEAN	12967.278	4447.278	996.611	152.158	92.706
SD	7905.485	3134.978	378.932	42.085	9.443
SD/MEAN	0.610	0.705	0.380	0.277	0.102
CV	60.965	70.492	38.022	27.659	10.186

(PUNJAB) CONTD..

	Fert. Cons(k.g./ha)	% of non- a	Female W.F	HHlWorker
Punjab	161.64	60.6	18.7	3.4
Gurdaspur	166.61	65.1	12.7	4.5
Amritsar	146.6	61.2	16.3	4
Kapurthala	140.01	63.8	14.1	2.8
Jalandhar	145.33	75.1	12.3	4.2
Hosiarpur	161.65	59.3	17.3	2.5
Nawasahar	118.73	67.4	33	2.5
Rupnagar	192.81	70.5	23.8	1.8
Fatehgarh sahib	15.2	65.7	18.3	2
Ludhiana	211.11	80.2	15.7	4.6
Moga	142.72	47.6	24.2	5.5
Firozpur	177.11	43.2	18.5	2.2
Muktsar	171.23	41.1	22.3	1.8
Faridkot	169.39	44.8	23	2.6
Bhatinda	113.12	48.8	27	2.7
Mansa	133.6	40.9	25.1	3.4
Sangrur	153.11	52.9	24.1	3
Patiala	157.71	61.1	17.6	2.9
MEAN	148.760	58.294	20.222	3.133
SD	39.918	11.523	5.301	1.023
SD/MEAN	0.268	0.198	0.262	0.326
CV	26.834	19.767	26.212	32.634

CODE	INDICATORS
01	Decadal growth rate of population (1991-2001)
02	Crude Birth Rate (2001)
03	Total Fertility Rate (2001)
04	% Urban Population
07	Sex ration (0-6 years)
08	Total literacy rates
09	Female literacy rate
10	Growth of female literacy rate (1991-2001)
11	Change in female work force participation (1991-2001)
12	Road length per 100 kilometers sqr.
13	No. of postoffices per lac population
14	Telephone connections per 100 person
15	No. of primary health centres per lac population
16	No. of hospital and dispensary beds per lac population
17	No. of primary schools per lac population
18	No. of middle and high school per lac population
19	Bank deposits (Rs. /capita)
20	Bank credit (Rs. / captia)
21	Bank credits to agricultural (Rs. / capita)
22	Gross Sown area (% of R.A)
23	Gross irrigated area (% of G.C.A)
24	Fertilizer consumption (Kg./HA)
25	% of non-agricultural work force
26	%Female work force participation
27	Workers engaged in House hold industries

TABLE-(i)

Correlation Between indicators of population and the indicators of development, [redacted] (undeveloped districts):

PUNJAB

	01	02	03	04
07	.0125	0.269	0.125	0.864*
08	.0354	0.365	.256	0.125
09	.0256	.023	0.23	.256
10	0.125	0.746*	.015	0.877*
11	0.770*	-0.257	.123	0.23
12	0.799*	.0255	0.236	.015
13	-.125	-.021	-.235	0.848*
14	.256	.015	0.256	.015
15	0.23	.156	0.156	0.750*
16	.015	.158	.0235	0.233
17	.235	.236	0.256	0.853*
18	-0.925**	.456	0.233	.0235
19	.235	-0.955**	-0.961**	0.256
20	.123	0.256	0.256	0.946**
21	0.236	0.156	0.156	0 258
22	-.235	.0235	.0235	0.256
23	.256	0.256	0.256	0.256
24	0.966**	0.235	0.235	0.235
25	0.233	0.896	0.896	0.897**
26	0.364	0.258	0.258	0.364
27	-.023	0.256	0.256	-.023

** - 1% level of significance

* - 5% of level of significance

TABLE (ii)

Correlation Between indicators of population and the indicators of development, Punjab (undeveloped districts):

	01	02	03	04
07	0.012	-0.139	-0.089	0.286
08	-0.577*	-0.611*	-0.651*	.015
09	-0.574*	-0.647	-0.682*	.123
10	0.569	0.580*	0.557*	
11	-0.610*	-0.587*	-0.601*	-0.611*
12	.0255	.015	-.235	.015
13	-.021	.123	0.256	.123
14	.015	0.523*	0.60*	.156
15	0.848**	-.235	0.236	0.612*
16	.015	0.256	-.235	0.704*
17	.123	0.690*	0.706*	-.235
18	0.567*	.015	0.600*	0.256
19	0.549*	.123	.0255	0.156
20	0.581*	0.236	-.021	0.236
21	0.123	-.235	.015	-.235
22	0.549*	0.256	.156	0.523*
23	0.581*	0.156	.158	0.539*
24	.156	0.125	.236	.0256
25	.158	-0.544*	.0256	0.125
26	.236	0.256	0.125	0.156
27	.0256	0.156	0.156	.158

** - 1% level of significance

* - 5% of level of significance

TABLE (iii)

Correlation Between the indicators of population and indicators of other development, Andhra Pradesh(Developed Districts):

	01	02	03	04
07	0.256	.0235	0.123	0.154
08	-.235	-0.630*	-0.726**	0.673*
09	0.256	-0.665*	-0.770**	0.651*
10	0.265	0.689*	-0.807**	0.154
11	0.258	0.698*	-0.788**	0.632*
12	0.156	-.235	0.145	0.566*
13	.0235	0.256	0.145	0.760**
14	0.256	0.456	-0.586*	0.864**
15	0 235	-0.578*	-0 661*	0.626*
16	0 254	0 256	0 517*	0.888*
17	0.458	0.256	0.145	-0.685*
18	0.545*	-0.640*	0.504*	-.235
19	0.156	.0456	0.175	0.256
20	.0235	0.145	0.785	0.934**
21	0.256	-0.743*	-0.621*	0.156
22	0.235	0.154	0.152	.0235
23	0.147	-0.584*	-0.692*	0.256
24	0.456	-.021	0.154	0.235
25	-.235	0.156	0.145	0.975**
26	0.256	.0235	0.123	0.154
27	0.456	0.256	0.596*	0.909**
	0.147	0.235	0.012	0.156

** - 1% level of significance

* - 5% of level of significance

TABLE (IV)

Correlation Between indicators of population and

Indicators of other development, Andhra Pradesh (undeveloped districts):

	01	02	03	04
07	0.321	0.215	.216.	.524
08	.365	-0.800**	-0.800**	0.699*
09	0.706**	-0.829**	0.830*	0.235
10	-0.612*	0.632*	0.613*	0.256
11	-0.621*	-0.814**	-0.810**	0.594*
12	-0.628*	-0.611*	-0.560*	.0235
13	0.156	0.156	0.235	0.256
14	.0235	-0.567*	-0.566*	0.235
15	0.256	.0235	.0235	0.235
16	0.235	0.256	0.256	.0235
17	0.235	0.235	0.235	0.256
18	0.156	0.235	0.156	0.235
19	.0235	-0.704*	-0.799**	0.566**
20	0.256	0.235	0.256	0.156
21	0.235	0.156	0.235	.0235
22	-0.731*	0.235	0.235	0.256
23	0.256	-0.637*	-0.634**	0.235
24	0.235	0.256	-0.559*	-.325
25	0.156	0.235	-0.550*	0.555*
26	.0235	0.235	.0235	.324
27	0.256	0.525*	0.256	-0.522*

** - 1% level of significance

* - 5% of level of significance

TABLE (v)

Coefficient of correlation between indicators of demographic development and other (factors)levels of development in the Developed districts of PUNJAB				
	01	**02**	**03**	**04**
Social development	0.211	0.112	0.521	0.561*
Infrastructural development	0.365	0.541	0.321	0.157
Banking assistance	0.245	-0.805**	0.145	0.926**
Agricultural development	0.254	0.365	0.325	0.175
Workforce participation	0.145	0.125	0.321	0.972**

** 1% level of significance.
* 5% level of significance.

TABLE (vi)

Coefficient of correlation between indicators of demographic development and other (factors)levels of development in the Developed districts of ANDHRA PRADESH				
	01	**02**	**03**	**04**
Social development	0.11	-0.612*	-0.694*	-0.674*
Infrastructural development	0.356	0.121	-0.612*	0.869**
Banking assistance	0.245	0.512	0.457	0.918**
Agricultural development	0.854	0.211	0.112	0.521
Workforce participation	0.856	0.547	0.321	0.926**

** 1% level of significance.
* 5% level of significance.

TABLE (vii)

Coefficient of correlation between indicators of demographic development and other (factors)levels of development in the Under Developed districts of ANDHRA PRADESH				
	01	**02**	**03**	**04**
Social development	0.124	-0.728**	-0.535*	0.709*
Infrastructural development	0.214	-0.256	-0.24	0.566*
Banking assistance	0.040	-0.245	-0.566*	0.254
Agricultural development	-0.655*	-0.606*	-0.580*	0.112
Workforce participation	0.383	-0.309	0.254	0.023

** 1% level of significance.
* 5% level of significance.

TABLE (viii)

Coefficient of correlation between indicators of demographic development and other (factors)levels of development in the Under Developed districts of PUNJAB				
	01	**02**	**03**	**04**
Social development	-0.731*	-0.591*	-0.628*	-0.535*
Infrastructural development	0.893	0.635*	0.735*	0.700*
Banking assistance	0.245	0.113	0.214	0.312
Agricultural development	0.527*	0.147	0.211	0.502*
Workforce participation	-0.501*	-0.214	-0.250	0.289

** 1% level of significance.
* 5% level of significance.

TABLE (ix)

Coefficient of correlation between indicators of demographic development and other (factors)levels of development in ANDHRA PRADESH				
	01	**02**	**03**	**04**
Social development	0.11	-0.605**	-0.605*	-0.641*
Infrastructural development	0.356	-0.346*	-0.434*	0.868**
Banking assistance	0.245	-0.397*	-0.397*	0.912**
Agricultural development	0.854	-0.564*	-0.567*	0.521
Workforce participation	0.856	0.547	0.321	0.026

** 1% level of significance.
* 5% level of significance.

TABLE (x)

Coefficient of correlation between indicators of demographic development and other (factors)levels of development in PUNJAB				
	01	**02**	**03**	**04**
Social development	0.408*	-0.012	-0.094	-0.480*
Infrastructural development	0.606*	0.121	-0.112	0.540*
Banking assistance	0.245	-0.436*	0.433*	0.825**
Agricultural development	0.483*	0.211	0.112	0.459*
Workforce participation	0.856	-0.420*	0.321	0.226

** 1% level of significance.
* 5% level of significance.