

**URBANISATION
AND
WORK FORCE PARTICIPATION:
A Regional Analysis of
Punjab, Rajasthan, Orissa & Karnataka**

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C E R T I F I C A T E

The dissertation entitled "URBANISATION AND WORK FORCE PARTICIPATION:
A Regional Analysis of Punjab, Rajasthan, Orissa and Karnataka"
submitted by Sanjukta Sen for the degree of Master of Philosophy
is an original work and has not been previously submitted for any
degree of this or any other University.

We recommend that this dissertation be placed before the examiners
for evaluation.

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CHAPTER 1

INTRODUCTION

Employment opportunities in the various sectors of the economy tend to have some relation with the process and extent of urbanisation. Urbanisation usually has a significant effect on employment in the non-agricultural sector, to the extent that employment in the non agricultural sector can be regarded as an index of the degree of urbanisation.

In this study, an attempt will be made to identify certain inter-relationships between certain aspects of urbanisation on the one hand and employment in the major sectors of the economy on the other. We focus on four States of India, namely Rajasthan, Punjab, Karnataka and Orissa. Our study is conducted at the district level in these States.

At the very outset we must understand that the relationship between urbanisation and employment patterns is by no means unidirectional. Various facets of urbanisation and employment are symbiotically entwined in complex cause-and-effect relationships, some of which we hope to unravel and understand.

We shall begin by trying to trace the various ways in which such inter-relationships have evolved over time, leading to territorial division of labour. In our attempt to do so, it would be relevant to trace the major stages of the history of human civilisation from pre-historic ages to the modern times. This discussion of the historical sequence presented in the following section will give us an overall perspective of the present problem of urbanisation and employment. This will be followed by

a survey of the literature on urbanisation and its interaction with work force in the next section. In the concluding section, we shall spell out the broad objectives of our present study.

HISTORICAL SEQUENCE

Since long before the advent of the era of modern industry, man has lived in self-sufficient, closed communities that have produced an array of goods and services that fulfilled the needs of the community. Not much is known of the life and ways of the Stone-Age Man who lived in caves in fear of the elements, which he, over time, came to know and master. Probably in the latter part of the Stone-Age groups of men began to live together as hunters and gatherers. Human population was sparse. The frugal needs of these groups were easily met by the flora and fauna of the forests, which at that time were in abundance.

A new era came when man learnt to tame and domesticate animals. Then evolved groups of herdsmen who travelled with their families and flocks in search of greener pastures. The food and clothing that they needed or wanted were produced well within their own group.

The next major breakthrough in human history came when Man learnt to till the land and cultivate crops. For the first time he became rooted to land around the unit of agricultural production. The Human Community around the agricultural unit grew into the Village. Agriculture within the village and pastures and forests in the surrounding commons met the community's need for food. Village industries evolved by and by to cater to its other

needs. Village population grew and became classified into occupational groups. Sometimes these occupational divisions acquired a religious and social status, leading to the formation of the caste system (in India). The village, with agriculture on the one hand and village industries on the other, was entirely self sufficient in meeting the needs of the village community. Therefore the village population remained rooted to the spot. Successive generations of the village economy got automatically adjusted to the occupational structure of the self sufficient village economy. The world population was entirely rural deriving its sustenance from agriculture.

A host of complex socio-economic changes took place leading to the birth of urban centres in the rural scenario. Most of these changes, directly or indirectly, were a by-product of the next major breakthrough in human history - the Industrial Revolution. Here it may be appropriate to cite the observation of Mukherji and Morrill (1973). According to them, the process of urbanisation is about the movement of the people and their clustering around certain places. This movement takes place as a result of the complex interplay of many forces. Settlements are reorganised as a result of social and economic changes.

The major event in the history of mankind that unleashed all the complex forces that led to labour movements and urbanisation, is the Industrial Revolution. It led to urbanisation directly in European societies and indirectly in colonial tropical societies. So far pre-industrial economies all over the world had certain common characteristics - dependence on agriculture, lack of

occupational specialisation and low degree of geographical integration.

Against this backdrop came the industrial revolution, which we shall discuss in some detail in order to understand what caused urbanisation and to what extent urbanisation was a result of labour movements. We also expect to understand how urbanisation, once it took root and grew, affected employment opportunities and further labour movements. In the following discussion on Industrial Revolution we shall draw upon the work of Dean (1979).

The industrial revolution is not a process or event which takes the same form in all the countries that it occurs. But there are some identifiable changes in the methods and characteristics of economic organisation, which taken together constitute a development which we would describe as an industrial revolution. These include the following changes that took place: (1) widespread and systematic application of modern science and empirical knowledge to the process of production; (2) the intensive and extensive use of mechanical power to substitute for and complement human effort; (3) enlargement of the unit of production to make use of the economies of scale thereby production far outstripping the needs of the closed community; (4) economic activity becoming more specialised; (5) movement of labour from activities concerning primary production to production of manufactured goods and services; (6) emergence of new social and occupational classes determined by the ownership of or relation to the means of production. The production process

became more depersonalised. It was based less on the family and tribe and more on the corporate enterprise. Production was directed more towards national and international markets than towards family and parochial use.

The first industrial revolution occurred in Britain. We shall discuss the British industrial revolution because it occurred spontaneously without government assistance as was the case in most succeeding industrial revolutions. For this reason the British industrial revolution is relevant to us, since its features represent the naturally occurring new era in human history, being free from distortions.

Exactly when the British industrial revolution took place, is a matter of controversy. By convention we may assume that it started around the middle of the eighteenth century. Four associated revolutions helped to precipitate and condition the industrial revolution - the demographic revolution, the agricultural revolution, the commercial revolution, and the transport revolution. We shall briefly relate each of them.

The demographic revolution took place at around the same time as the industrial revolution. The two had a very complex cause and effect relationship that has not yet been fully understood. The main feature is a slow but steady growth in population. The death rate declined and the birth rate rose. The decline in mortality, especially child mortality came mainly because of innovations in the field of medicine. Epidemics and fatal diseases were beginning to be checked by immunization through vaccination. Agricultural prosperity was on the rise and

so the population was in a better position to withstand poor harvests. Prosperity also caused birth rates to rise. All this together led to a sustained and steady growth rate of the population that the country had not experienced before.

It is a matter of controversy whether an agricultural revolution need be a precondition for an industrial revolution. In Britain it was. Four features characterized the agricultural revolution. Farming came to be conducted in large scale consolidated units, replacing the fragmented fields and small farms of the medieval period. Farming was extended over heaths and commons and intensive livestock husbandry was adopted. Self sustaining subsistence farmers were transformed into a community of agricultural labour. There was a large scale increase in agricultural productivity.

The commercial revolution was an important precondition for the industrial revolution in Britain and that in other countries. Trade barriers were removed. New trading partners were found. Certain countries (mostly in Europe and North America) demanded goods that Britain could produce. Now to produce those goods Britain needed some raw materials that she could procure from other trading partners, mostly countries located in the tropics. In this regard the naval supremacy of Britain proved to be a great advantage. The commercial revolution acted as a great impetus to the industrial revolution.

The transport revolution in Britain was a series of capital intensive innovations in the field of road, rail and particularly water transport (navigation canals). They helped to integrate the

country in a way that producers could be in regular touch with markets nearby and far away. They could expand their sales, and, cut their losses resulting from stockpiling of inventory.

These four associated revolutions created preconditions for the industrial revolution which was a galaxy of industrial innovations that radically changed the traditional system of economic activity. Modern manufacturing industry grew in leaps and bounds. There now were large scale units of production, labour saving machinery, and regimentation of labour.

As the industrial units grew in size, their demand for labour increased. People who lived in the rural regions now had an opportunity to get lucrative jobs in the industrial centre. They left their rural homes and began to settle around the industries where they got jobs. This is how industrial centres gave birth to urban centres which grew and flourished. Rural-urban migration continued as long as industries offered better (more remunerative) jobs compared to the jobs offered by the rural sector.

This is the way urbanisation took place in England and in the other European countries. Urban centres, that were regarded as centres of higher earnings and better living, became the nuclei towards which people migrated in search for a better future. Urbanisation was thus affected by and in turn affected labour movements and the occupational structure of the population.

We now move on to tropical countries with a colonial past to rediscover their experience with regard to urbanisation and

its effect on employment patterns (or vice-versa). Colonial rule implied development of colonies for the sake of development of the metropolitan powers. This brought about complex changes in the socio-economic structure of the regions. The further development of these regions along the line of growth that had been evolving over the centuries was arrested and a new direction was given. Colonial rule involved the opening up of mines and the establishment of plantations, construction of irrigation canals to boost the production of agricultural raw materials, laying of railway lines to transport raw materials and minerals to the coast and the construction of sea-ports to handle the new traffic. In all parts of the world countries undergoing colonial rule experienced the same changes in the pattern of urban and economic development. Urban settlement systems that evolved in the colonial countries in response to the politico-economic system existing under colonialism were very different from those that evolved in the western experience. The urban population was now concentrated in large cities often sea-port-cum-capital cities located eccentrically on the periphery of the country. This city was the nerve centre for colonial exploitation. This is the overall, global picture, as portrayed by Alikhan (1987).

We shall now discuss the experience of India. According to Kundu (1980) and Raza, Habeeb and Kundu (1978), the present pattern of top-heavy urbanisation with having little linkages with the surrounding regions, owes itself to the colonial exploitation of India. Prior to the colonial era, settlements were linked through trade and commerce. These linkages had

evolved over many years and ports like Khambayat, Tamralipta and Broach had come into being. These inter-settlement linkages were disrupted and the ports disintegrated during colonial exploitation.

Big port towns of Calcutta, Bombay and Madras came up as centres of exploitative extraction which drained India of her natural resources. These three cities grew disproportionately large and had no beneficial effects on their rural surroundings. Traditional handicraft industries that had grown over centuries dwindled in importance. The towns that grew around them, e.g., Murshidabad, either died out or became part of the colonial exploitation process.

There was no technological advancement in agriculture as it was looked upon by the colonial rulers only as a source of raw material for industries in England. Industries were not self-reliant. Therefore there was no healthy transfer of work force from the primary to the secondary sector.

The rural-urban migration that took place did not necessarily represent a shift of the labour force from the primary to the secondary sector. Rather, it represented poverty-stricken refugees moving to the cities in search of sustenance and livelihood.

Urban centres did not represent the folk or ethnic culture of the heart of India. Its culture, imitative of the colonial society, was rootless and superficial. The rural culture which did not relate to the urban centres, nor got any positive feedback from them, remained backward characterised by

superstition and parochialism.

In the colonial period population grew because western medical advancement was brought in to prevent epidemics and check infant mortality. The death rate registered a decline. Agricultural productivity did not grow. Consequently there was surplus labour in Agriculture. Therefore rural urban migration being caused by push-factors continued even in the face of urban unemployment. As we can see this is totally different from the pattern of urbanisation as it occurred in Europe where urbanisation was a result of rural-urban migration caused by the pull factors of urban industrial growth and prosperity.

With independence the political as well as the economic structure in India underwent significant changes. The massive public sector investment in selected pockets specially during the second and third five year plans helped in restructuring the urban hierarchy. The regional disparities however, did not narrow down as these concentrated investments did not create viable economic complexes and left the neighbourhood of the urban centres virtually untouched. The assumption of percolation and diffusion of growth impulses from the centre to the periphery - characteristic of the Anglo-Saxon regional development theories - proved to be invalid in the Indian context as the multiplier effects got impounded within the large agglomerations. Besides, the transformation of large cities from colonial to national capitals meant only an increasing concentration of western oriented cultural forms.

The pattern of urban growth which India is experiencing with

several other developing countries is not the same as the urbanisation that is characteristic of Western industrial societies. It is suggested by Kundu (1980) that this specific form of urban growth could be expressed, for the lack of a more appropriate term, as urban accretion, which may be defined as the distorted growth of urban centres in relation to their own economic bases on the one hand and to the regional economy on the other.

The experience of India in the field of urban development, was repeated in many parts of the world, wherever there was a colonial past. East Africa and Latin America deserve special mention. According to Alikhan (1987), after three decades of colonial control by Britain and Germany, Uganda, Kenya, Tanzania were transformed from areas of subsistence agriculture into suppliers of raw materials to and purchasers of manufactured goods from Europe. These changes brought into being new settlements in all areas experiencing change. The large deviations from a rank-size distribution in Latin America, Africa and South-East Asia, indicate structural anomalies in the urban system, brought about by long periods of colonial rule.

SURVEY OF LITERATURE

We shall now survey some of the literature on urbanisation and its interaction with the work-force. We begin with the work of Hughes (1971). In her article the author focusses on the fact that in most developing countries, employment in manufacturing is only a small proportion of work force. Even in countries such

as the Republic of China and Singapore which have had great success in Industrialisation, the proportion is lower than that of industrially advanced countries.

The main factor responsible for this phenomenon, is the limited choice of techniques for the entrepreneur. Capital intensive techniques are so much more economical than labour intensive ones that the scope for substitution of labour for capital is extremely limited. In domestic and international markets, products that are better in terms of quality, precision and appearance of the finished product stand a better chance in competition with other products. These qualities are more easily achieved by modern capital intensive technology. Since capital is expensive and scarce, entrepreneurs are concerned in maximising profits and intensive use of capital. Use of capital intensive techniques is facilitated further by governments trying to lower the price of capital, through cheap loans and tax exemptions.

Another factor which pushes entrepreneurs towards choosing labour saving techniques is the higher cost of labour in the developing countries than is apparent. Labour is mostly unskilled. Even slightly skilled workers have to be paid more than the daily wages. Work discipline is low and absenteeism is high. Wages are pushed up by militant trade unions who also demand high fringe benefits.

In these countries labour intensive small industries have not picked up because entrepreneurs lack technical, purchasing, marketing, organisational and accounting skills. They are

undercapitalised and lack access to bank credit. The author is of the opinion that countries like China, Korea and Singapore which have low key but hard-hitting industrialisation strategies have progressed much further in the field of manufacturing than the countries that have relied on import substitution. Products which are manufactured by labour intensive techniques, yet have a high export potential and a large domestic market, should be encouraged as a matter of policy, rather than following a policy of blind import substitution.

In the context of urbanisation the author postulates that urbanisation and industrialisation perpetuate each other because of the infrastructural developments and expansion of marketing facilities that usually come with urbanisation. For better planning in the field of industrialisation and urbanisation the author feels that the government of developing countries should not thin out valuable capital resources over the rural hinterland for the sake of balanced regional development. Heavy industrialisation should continue and at the same time rural small towns to produce simple, non durable consumer goods, and building materials.

Gugler (1988), casts doubt on the assumption that industrial development is a pre-requisite for urban development. He contends that cities have come many centuries before industrial growth and even today only a small section of the working population of the city works in industry. The Third World cities are characterized by high levels of non-industrial employment, usually in the service sector, or tertiary sector.

As far as migrant labour and the urban labour market is concerned, the sheer poverty in the third world cities indicate that the migrants do not know what to expect. Illusions about the prospects lying ahead bring them to an urban environment where they find themselves trapped. Migrants, for some reason or other are generally satisfied with their move. Thus rural urban migration continues unabated. The urban labour market is fragmented in a variety of ways, ie, different categories of people enjoy different access to the earning opportunities. Access is a function of three criteria : education/ training, gender and patronage.

Preston (1988) expresses concern over the fact that as long as rural-urban migration continues there is a distortion in the regional or sectoral development of the economy. In his study the author plots the urban population percentage against the percentage of labour force employed in industry, for 21 regions of the world for two time points, 1950 and 1970. The two observations, one for 1950 and one for 1970, are plotted on the graph as two points which are joined by a straight line whose slope is noted. Most of the points fall close to the straight line passing through the origin with a slope of $1/2$ (each increment in the urban population being matched by an increment of $1/2$ in the percentage of industrial workers in the workforce). Most developed countries display a lower slope reflecting service dominated economies. Southern and Eastern Europe and the erstwhile Soviet Union show a steep slope. They have experienced a sharp rise in the industry-urban ratio which reflects on a

pattern of development which attempts to economise on investable resources by restraining the growth of urbanisation with their higher consumption requirements. The developing World in Asia and Africa remain show a steep slope indicating that industrial employment has increased more than urbanisation. Latin America shows a gradual slope, which is indicative of an overall dominance of the service or tertiary sectors that have come with urbanisation.

Dasgupta (1987) makes the following observations on the State of West Bengal, based on district level data. According to him the most urbanised districts are those with higher levels of agricultural progress. Many of the small towns and surrounding villages perform the role of commuter settlements. The urban scene in West Bengal is dominated by the Calcutta urban agglomeration which accounts for two-thirds of the urban population of the State and four-fifths of the industrial labour. The Asansol-Durgapur subdivision is rapidly emerging as an alternative urban centre with a high proportion of new high-growth towns. The basis of this growth is mining activity and industrial expansion. The lowest position on the urbanisation scale is occupied by the western districts particularly Bankura and Purulia, and also Midnapore and Birbhum. They do not have a prosperous agricultural hinterland while whatever industries exist are on a small scale and household based. A change in the urbanisation pattern could be brought about by a radical improvement in agriculture. Such an improvement failed to occur. In the hinterland around the more urbanised regions, agriculture

performed better and agricultural and industrial development went hand in hand. In the districts where the dependence on agriculture is high faced agricultural stagnation.

Giri (1987), in his study on the growth of small and medium towns in West Bengal notes that the majority of the small towns in the Calcutta Urban Agglomeration, and in the Asansol-Durgapur Subdivision had manufacturing as their main function. This is also true of the Bankura-Purulia-Jhargram area, though the industries in this area are traditional. In the rest of southern West Bengal, the majority of the small towns have service as their main function. In many of the manufacturing towns, much of the manufacturing activities are accounted for by traditional crafts. In the northern districts of West Bengal no town has manufacturing as its main function. The majority have service, trade and transport as the main function. Therefore outside the metropolitan neighbourhood of Calcutta Urban Agglomeration, and the Asansol-Durgapur Subdivision, the small towns are based on trade, transport and service activities. The study shows that, over the years small towns have moved from manufacturing and service, to trading and transport.

Ghosh (1987), compares the urbanisation experience in Punjab and West Bengal. She contends that urbanisation through agricultural development and urbanisation through industrialisation, manifest themselves in two different ways. Agricultural development generates agricultural surplus that has to be marketed and so marketing towns spring up and grow. Agro-based industries also develop to create a nucleus for prospective

urban centres. The towns that so develop are generally small and have small hinterlands. Agro-based industries and agricultural markets complement each other in promoting the development of small towns. This is what happened in Punjab, particularly after the green revolution. The majority of towns have grown from a rural background. Some remnants of that background still exist. In fact some towns are actually overgrown villages. The author does not deny the role of industrialisation in the urbanisation process of Punjab. Industrialisation led to urbanisation in Punjab, by helping to promote heavy industries like Jalandhar, Phagwara, Patiala and Ludhiana. These grew mainly along the Delhi-Amritsar railway route. Therefore in Punjab the big cities have grown along important transport routes but small towns have spread uniformly over the hinterland. The spatial uniformity of the urban population in Punjab, is attributable to uniform agricultural development.

Ghosh Roy (1987) conducts a study on two regions of West Bengal. In the first region (24 Parganas,, Howrah, Hoogly districts) most of the towns are industrial where 40% of the workers are engaged in industrial activity. In region 2 (Bankura, Birbhum, Purulia), most workers are engaged in tertiary activities. A multiple Regression analysis is conducted separately for the two different regions, where the author has tried to find out to what extent the degree of urbanisation has been influenced by the extent of employment in the industrial, tertiary and service sectors respectively. In region 1 the growth of industrial employment has positively influenced the growth of

urbanisation.

Dasgupta (1987) attempts to explore the nature of linkages between small industrial-urban centres, and the rural hinterland on the basis of some case studies in West Bengal and Bihar. Ever since Independence the government has tried to boost industrialisation in the country. Small and heavy industries have been established all over the country and sometimes even in remote rural and tribal areas. Growth of urban-industrial centres in the hitherto virgin rural areas have opened up new channels of communication between pre-industrial village societies and industrial-urban centres. One important aspect of such communication is in the sphere of employment of labour in the industrial-urban jobs. Before the establishment of the Chittaranjan Locomotive Works and the Hindusthan Cables in the district of Bardhaman and on the border Santhal Parganas, the economic structure of the people of the area rested primarily on agriculture. After the establishment of the two industrial-urban centres new avenues of subsistence were created and the occupational table was markedly altered. A section of the people shifted from primary occupation agriculture to industrial-urban jobs or a mix of agricultural and industrial-urban jobs. The diversion from agriculture to industry in the work force of the region has been so marked that agricultural production had declined.

Chaudhuri (1987) examines the possible contribution that the tea plantation industry might have made to the overall urbanisation and work-force development in the Jalpaiguri

district in West Bengal. The tea plantations were started by the British around 1856 and soon became a very profitable business. Most of the profits were repatriated abroad. Plantations, with their monetary affluence, emerged as prosperous urban centres. Unfortunately they remained as enclaves and had little economic connection with the agricultural or agro-industrial sector which is the source of livelihood for the mass of the population. Agricultural backwardness continued and perpetuated. Low wages in the agricultural sectors helped planters to keep wages down in plantations. Industrial growth was insignificant. Over time population grew and employment in the plantations slowed down. Additional job-seekers had no alternative but to eke out a living from the land. Therefore, ruralism was perpetuated.

Khasnabis and Nath (1987) examines the urbanisation experience in a populous border district of West Bengal, namely Nadia. This was a decaying district in terms of population growth until it experienced a high influx of refugees following the partition of Bengal. This exogenous factor brought in a high rate of urban growth during the early years after partition. This urban growth rapidly slowed down. During the years following partition there was a decline in the services sector and no corresponding expansion in the industrial sector. The growth of tertiary and services sector comes mainly as a response to the growth in the primary and secondary sectors. There was poor growth of agriculture in the rural areas and a stagnation of industry in the metropolis. Therefore the growth in the services and tertiary sectors was dwarfed. Towns were excessively

dependent on the tertiary and services sector, and so urbanisation stagnated over time. This phenomenon is common to the Third World.

Basak (1987) aims at understanding the nature of the growth process of some of the major steel towns of India, especially Durgapur. Attempt was also made to examine the impact of a certain town on the economic and demographic aspects of the local surrounding region. The steel towns exhibit some special features that distinguishes them from other types of towns. The steel towns have passed through some distinct stages in their growth process. This study indicates that the future growth rate of these towns would depend upon the integration of the core sector with the subsidiary and supplementary activities in the manufacturing and non-manufacturing sector.

Swaminathan (1981) attempts to understand the occupational structure of small towns of Tanjavur district of Tamil Nadu. He contends that small towns play an indispensable role in connecting large and medium towns to the rural hinterland, by supplying goods and services. He conducts a factor analysis by the method of principal components. There are 22 small towns in Tanjavur. The variables that have been used are total population, percentage of the total labour of each sex employed in each different sector of the economy. There are 19 variables in all. There are 5 principal components. The results of the analysis indicate that there are 5 hierarchic levels of occupation in the small towns of Tanjavur. The first level of hierarchy emphasises non primary activities with female dominance. (The sex ratio in

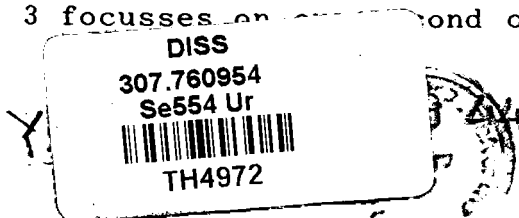
Tanjavur district is quite high). The main occupations in this level are in other services, trade, construction, transport, livestock, forestry, and household industries. It can be inferred from this component that in small towns the main occupations are in the tertiary and primary sector. The second level of hierarchy represents equal weightage of the primary, secondary and tertiary sector. This level is male dominated. The third level of hierarchy represents household industries. The fourth emphasises livestock and fishing by females, and transport and construction by males. The fifth level is dominated by female cultivators and male construction workers. Since the Cauvery delta is very fertile, agriculture is prosperous. This is why small towns do not grow, which is corroborated by the low weightage of occupations in the field of construction.

OBJECTIVES OF THE PRESENT STUDY

Based on the above discussion we set the following objectives for our study :

- 1) To identify the broad characteristics of urbanisation;
- 2) To identify the peculiarities of the labour force structure in the chosen States;
- 3) To identify the interrelations between urbanisation, and labour force.

Our study is divided into the following chapters. In the next chapter we shall describe our sources of data, the geographical areas on which we focus, and the methodology we follow. Chapter 3 focusses on second objective. Here we shall try to trace



the salient features of urbanisation in the four States that we analyse. Chapter 4 deals with the characteristics of the labour force in the four States as per our third objective noted above. In chapter 5 we shall analyse the interaction between the extent and pattern of urbanisation with various dimensions of the labour force. Chapter 6 summarises and concludes.

CHAPTER 2

THE DATA SET

In this chapter we intend to discuss the data set that we use for our study. We shall delineate the geographical scope of the study, the methodology we adopt to measure various dimensions of urbanisation and work participation, and the sources of data which we use.

AREA:

In this study, we look at urbanisation and work force in four different States of India, namely, Rajasthan, Punjab, Karnataka and Orissa. The analysis is conducted at the district level for each of these States. The choice of the States has been made mainly because of their geographical spread: Rajasthan in the West, Orissa in the east, Punjab in the north and Karnataka in the south. The States reflect some geo-economic diversity which will be apparent as we discuss their respective profiles. For the information in the State profiles, we rely on the Census Atlas, 1981 and Singh (1971).

RAJASTHAN: A Profile

Rajasthan (located approximately between latitudes 24 degrees and 30 degrees North and longitudes 69 degrees to 76 degrees East) includes the Marusthali region (east part of the Thar desert) and the adjoining Bagar (steppe land) that extends over the Western districts of Rajasthan. The State receives less than 50 cm of annual rainfall.

The region slopes from east to west and from north to south. There are many scattered hillocks marking the western edge of the

Bagar. The western half is covered by dunes and small hillocks in between. The most important river is the Luni that rises in the Aravalis at Ajmer and flows towards the south-west. The Luni reaches the Rann of Kutch only during the rainy season. Excepting the south eastern portion, the rest of Rajasthan is an area of inland drainage.

The climate of Rajasthan is characterised by extremely high range of temperature and aridity although sharing the characteristics of monsoonal variation through the year. It is the hottest region of India (mean june temperature of 34 degrees Celsius at Jaisalmer). The temperature falls below freezing point at Ganganagar and Bikaner (-2.8 degrees Celsius in December and January).

The whole of this region is sandy and at places bare rocks are exposed. Small trees can be observed here and there. In the arid region Babool and Acacia thrive. Babool is the most important fodder tree in this region and it grows in even in arid climate and sandy topographic conditions.

The soils of Rajasthan are generally characterised as generally sandy containing 95% sand and 5% clay.

Although Rajasthan is endowed with a great variety of minerals, it is devoid of ferrous and other metals. Important minerals are Gypsum, Lignite and Fullers Earth.

Agriculture and livestock raising are by far the most important economic pursuits of the people. The cropping pattern reveals that cultivation of cereals is the most important. Millet like jowar and bajra dominate. Gram, pulses, wheat and barley are

also cultivated. The important commercial crops oilseeds, cotton and sugarcane.

It is the most important occupation as supplementary and subsidiary to cultivation. The most important animals raised are sheep, camels, goats, cattle and buffaloes.

The region is industrially one of the least developed in India. Only a small proportion of the population is employed in industry. Most industries in the big towns are small-scale, processing raw materials and manufacturing light consumer goods. The Princely States helped in the past to develop a number of handicrafts mainly in urban areas. This industrial underdevelopment owes itself to lack of raw materials and infrastructure.

PUNJAB: A Profile

Punjab is located between latitudes 23 degrees to 30 degrees North, and longitudes 73 degrees to 76 degrees East. This is mainly a plain area except for some hills of the Shiwalik Range in the north and north-east. Main rivers are Ravi, Beas, Sutlej and Ghaggar (seasonal). These rivers have been used for irrigation and power generation.

The State has a semi-arid monsoon-type climate. Due to its great distance from the sea, the State does not get the full benefit of the monsoon. Annual average temperatures range from 23 degrees Celsius to 25 degrees Celsius. The hottest season is June (34 degrees Celsius) and coldest is January (-3.9 degrees Celsius).

Rainfall varies between 75 cm to 30 cm. It mostly takes

place from July to September. Western cyclones bring some rain in winter between December and January, which is beneficial to Rabi crops.

Most of Punjab is covered by alluvial soils, deposited over centuries by the rivers of Punjab. There are some loamy and sandy soils in the vicinity of the desert.

Punjab has a very scanty vegetal cover due to long human occupance. Natural vegetation is of the tropical thorn forest type which is characterised by short thorn bushes and babool trees.

The main asset of Punjab's economy is the quality of the people who are endowed with a natural capacity to wrest a living from the hostile Nature.

Though rainfall is low, irrigation is plentiful (especially canal irrigation).

Agriculture is of prime importance and brings prosperity to the State. Punjab is known as the granary of India. There is wide variety of crops and preponderance of food over non-food crops. Wheat is by far the most important. Next in importance is rice, barley and mustard. Rice is rapidly gaining in importance especially in irrigated and flooded regions. Traditional cash crops are cotton, sugarcane, rapeseed and mustard.

Industry is rapidly growing in importance. There are some heavy industries located in big cities that lie along important transport routes, for example the Delhi-Amritsar rail-route. A great many small industries, mainly related to agriculture (processing or marketing agricultural produce), are sprinkled

all over the State. They are mainly located in small, rural-based towns.

KARNATAKA: A Profile

The name Karnataka is derived from the word "Karnad" which in the Kannada language means the land of black soil. It is situated approximately between latitudes 11 degrees to 18 degrees North and longitudes 74 degrees to 78 degrees East.

The State is dissected by many rivers that rise in the Western Ghats which form the main watershed of the region. The major rivers are Godavari, Krishna, Cauvery, Tungabhadra, Vedavati, Ghataprabha and Malaprabha.

The State with its North-South elongation and the typical arrangements of the major relief features responds in various ways to the monsoon current in different regions. The Western Ghats act as a climatic barrier. Starting from February the temperature rises in May to a maximum of 35 degrees Celsius. January is the coldest month and the temperature drops to 25 degrees Celsius. The average annual rainfall varies from 60 cm to 20 cm and most of it comes from the South-West Monsoon.

The State is well within the tropics and receives plenty of rain over a large area leading to the growth of luxuriant vegetation. There are tropical evergreen forests of sal and teak as well dry deciduous forests. The chief economic product from the forests in addition to sal, teak, and eucalyptus, is sandalwood.

The main soils are red and black and various mixtures of the two. The main minerals are iron, manganese, chromium and gold.

Earlier the economy was dominated by agriculture but industries, light and heavy, and tertiary activities are gaining in importance. The economy is more buoyant than in most regions of the country. The region is self-sufficient in agriculture. It has turned itself from a power deficient region to a power surplus region. Most of the power is hydro-electric. The most important crops are jowar, ragi, pulses, paddy, cotton sugarcane, oilseeds, condiments, spices and tobacco. The main industries are, generation of hydroelectricity, textiles, and some heavy industrial enterprises like HMT, HAL, ITI (all located in Bangalore). Silk and wool production are very important.

ORISSA: A Profile

The State of Orissa is situated approximately between latitudes 81 degrees to 87 degrees East and longitudes 18 degrees to 23 degrees North.

The physical height of this district ranges from 1000 meters above sea level in the Eastern Ghats in the Ganjam district, to 75 meters above sea-level in the costal districts. The main rivers are Mahanadi, Baitarani, Brahmani, and Vamsadhara.

Orissa came under the tropical savanna-type climate. Where the annual temperature varies between 22 to 29 degrees Celsius. The rainy season extends from June to September. Highest rainfall ranges from 551 mm to 190 mm.

The soils of Orissa are mostly red in colour, with varying textures of loam and sandy loam. They are especially suited to the cultivation of paddy, fruit, vegetables and mustard.

Five types of forests are found in Orissa. They are tropical

dry deciduous forests, tropical moist deciduous forests, littoral and swamp forest, tropical dry evergreen forest, tropical semi evergreen forests.

As a sector, agriculture is the most predominant. It is dependent on rainfall. Irrigation potential exists and to some extent has been tapped. The main is paddy. The quality of rice is fine. Irrigation has been protective against crop failure. Other crops are wheat, millet, mung, mustard, groundnut, jute, and sugarcane.

Orissa is very rich in minerals but backward in industries. Nevertheless industrial establishments have sprung up for example the Steel Plant at Rourkela, Nitrogenous Fertilisers, the Aero-engine division of the Hindusthan Aeronautics and coal-based fertiliser factory at Talcher. Power is deficient.

Mineral and forest resources comprise a sound economic base but more infrastructural support is needed to tap it. Other important industries are cotton textiles and rice milling.

VARIABLES AND DATA

Urbanisation

Our initial step will be to try to quantify the degree of urbanisation in terms of certain indicators. It would be relevant to explain the concept of an indicator, and what it should represent.

According to Kundu (1980), indicators can be defined as statistics that articulate the occurrence of a given phenomenon. He draws a distinction between a variable and an indicator.

Statistical handbooks generally provide data pertaining to variables that may or may not represent the relevant phenomenon. An indicator is a combination of data and theory and can only be constructed through a correct sequence between factual and logical order. It is therefore through an appropriate transformation of the variables (which eliminates the influence of the non essential factors) within a theoretical format that an indicator can be obtained. One simple and common method of constructing indicators is to apply an appropriate denominator to the variables so that the influence of the non-essential factor (appearing in the denominator) is eliminated.

We attempt to quantify the degree of urbanisation with the help of three indicators. These are: (1) general urbanisation (2) urban density (3) average size index. According to Kundu (1980), a rapid growth of urban population in a region with a corresponding change in the structure of the economy leads generally to a weakening of its agricultural base. The expansion of the urban sector is contingent upon the exploitation of the hinterland, which becomes increasingly pauperised. The regional economy gets fragmented into apparently affluent enclaves and indigent hinterland. The gap between the two tends to widen over time. It follows that in evaluating the urban process, their impact on the rural base of the region which supports the agrarian superstructure must be taken into consideration. In the light of the above, the percentage of urban to total population $U/(U+R)$ would not adequately represent the actuality and would tend to understate the degree of urbanisation in relatively

urbanised regions. In order to remove this defect the ratio of urban to rural population (U/R) has been chosen as the index for general urbanisation (URB1).

With a growing concentration of population in a few urban centres, it becomes difficult to provide proper housing amenities, educational and medical attention and above all, an acceptable urban environment. We use the index of urban density per square kilometer (URB2) as a proxy for the composite index of social well being - the underlying assumption being that the urban amenities per capita would vary inversely with the pressure on urban land, in other words, with urban crowding.

Another aspect of urbanisation is the disparity in the size of towns. The higher the order of the town the higher is its possibility of being pushed up into the next higher class. This process would result in the emergence of a few big towns at the top while the towns of the medium and lower order would tend to stagnate. Average town size would go up; so would disparity in town size. This phenomenon can be said to represent urban accretion as suggested by Kundu (1980) referred to in the previous chapter. The economic and social cost of maintaining a system of towns with a large average size is considerably high. It would be more so with a higher (relative) disparity in size. An index reflecting the composite effect of the average town size as well as their disparity in their distribution is appropriate for measuring urbanisation. The index is defined as follows:

$$URB3_j = \frac{\sum P_{ij}^2}{\sum P_{ij}}$$

where $URB3_j$ is the average size index for region j , P_{ij} is the

population of the i th town in region j . This index is similar to that suggested by Arriaga (1974). The index can be alternatively written as $URB3_j = P_j (C^2 + 1)$ where P_j is the mean size of the town in region j and C is the coefficient of variation in the town size.

To repeat, we measure urbanisation by three different indicators :

(URB1) - general urbanisation, as the ratio of urban to rural population;

(URB2) - urban density as the ratio of urban population to the urban area, representing urban crowding;

(URB3) - average size index, as the ratio of the sum of squares of urban population (town-wise) to the total urban population, representing urban accretion.

The data set and the variables constructed for urbanisation are presented in a set of three tables for each State: tables 2.1 to 2.3 for Rajasthan, tables 2.7 to 2.9 for Punjab, tables 2.13 to 2.16 for Karnataka and tables 2.19 to 2.21 for Orissa. The first table presents the values of urban, rural and total population (obtained from the Final Population Totals of the 1981 Census) and urban area (obtained from the Primary Census Abstracts, 1981). The second table presents the names and the respective population figures for all towns of each district. This information is compiled from the Town Directory or the District Census Handbooks of each State. The third table presents values of URB1, URB2 and URB3 calculated from the data in the first two tables.

Work Force:

The concept of work in the Census has evolved over time. We shall now see how exactly work is defined in the Census and what factors have led to this definition. The objective is to have a clear understanding of the figures we shall use on work force participation as given in the Census.

In the Indian Census, the definition of work has been experimented with from Census to Census. No fixed guideline, for example from the ILO, has been followed. This, to some extent has made the comparability of data difficult between one Census and another. But it has to be kept in mind that at each Census one was trying to benefit from the shortcomings of the previous definitions and was making an effort to see if one can get a realistic picture as far as possible (see Chandrashekhar (1971)).

The literature on work force uses two broad approaches to collect and analyse work force data. One is the "gainful occupation approach", and the other is the "labour force approach".

In gainful occupation approach, the basis of classification of a person, into economically active or otherwise is the respondent's evaluation of his economic status rather than any objective criteria to be applied by the enumerator. The other major shortcoming is that he reports his usual status at the time of enumeration regardless of what he was doing in any period prior to that. It is likely that persons with usual job attachments (perquisites etc) but actually retired at the time of enumeration is reported in the work force. Furthermore it

provides no distinction between employed and unemployed unless a specific question of this nature is asked. Also the persons seeking jobs for the first time would not be accounted for even though they exert pressure on the labour market.

The labour force approach classifies persons on the basis of their activity during a certain specific reference period. According to this approach, the person concerned does not decide whether he is in the labour force or not. He simply reports to the enumerator, the nature of his activities in the reference period. The enumerator places him in the labour force if his activity contributes to the national product. He also draws a distinction between the employed and unemployed parts of the labour force. The employed are those who work for pay or profit as salary workers, entrepreneurs, self employed persons or unpaid family workers and persons with jobs but temporarily unemployed at the time of enumeration. The unemployed were those who were not working but looking for jobs during the reference period. Persons neither employed nor unemployed are not considered in the labour force.

The approach adopted in India has varied from one Census to another; from the 1901 Census to 1951 it roughly approximates the gainful occupation approach. Data in the 1961 and all successive Censuses are based on the labour force approach.

In the very early Censuses (1901 to 1921) an approach that was different from the gainful occupation approach was used. The approach may be called "means of livelihood" or "dependency" approach. Here the population was divided into workers and

dependents. From 1931 we see the adoption of the gainful occupation approach. In the 1931 Census persons were recorded as earners or dependents. Dependents were recorded as working dependents (who were not receiving wages, eg, unpaid family labourers) and non-earning dependents. Earners and working dependents were both regarded as workers. In the 1951 Census each person was reported as a self supporting person, or an earning dependent (not earning enough to support themselves), or a non earning dependent (not earning anything). Here the criterion of distinction was income.

From 1961 onwards the Census adopted modified versions of the labour force approach. The 1961 Census classifies persons between two categories namely worker and non worker, the basis of distinction being, the nature of a person's activity in a specified reference period. A person would qualify as a worker if his activity is in the nature of productive work. A person is regarded as worker if, in case of seasonal work, the person had worked more than one hour a day throughout the greater part of the working season, and, in case of regular employment, if he was employed in any of the fifteen days prior to the day of enumeration. A usually working person, temporarily absent from work during fifteen days prior to the day of enumeration is regarded as a worker. A person who is not working but has been offered a job is regarded as a non-worker. Work includes direction and supervision. The unemployed were recorded under two heads (1) those formerly employed but now seeking jobs and (2) those seeking jobs for the first time never employed before (see

Sinha (1961)).

In the 1971 Census, the same broad scheme has been followed. A few changes and new specifications need to be mentioned. In order to be classified as worker or non worker a person should be asked about his main activity during the reference period. In the 1971 Census the reference period for regular employment is, one week prior to enumeration (a person is a worker in his main activity if he is employed on any one day during the week preceding enumeration) for seasonal employment, one year prior to enumeration (even if his activity is reported during the last one week his main activity during the last one year should be ascertained). Persons under training and apprentices are treated as workers whether or not they earn stipends (see Chandrashekar (1971)).

In the 1981 Census the new features are (1) a slight change in the reference period, (2) a specific attempt to capture marginal workers, (3) a clarification on work force participation. For regular employment, the reference period continues to be one calendar year, but for seasonal employment the choice of reference period is made according to local conditions. Broadly, it is the agricultural season preceding enumeration.

Main workers are those who worked for the major part of the reference period (six months or more). Marginal workers are those who worked at any time at all during the reference period. Non workers are those who did not work at any time during the reference period. Hence the population total by the 1981 Census

is comprised of three mutually exclusive groups, main workers, marginal workers and non workers (see Padmanabha (1981)).

It is mentioned that work participation in every Census refers to the proportion of workers to the total population and not the proportion of labour force to the total population. The 1991 Census follows the same definition as the 1981 Census. A minor change in the reference period in case of seasonal work, may be mentioned. It is the agricultural season prior to enumeration.

The Census of India, as a data source for work force participation, has certain shortcomings. According to Krishnamurty (1983) even in the 1981 Census (where work force participation was estimated by using an extended concept of economic activity to include marginal workers), the entire magnitude of marginal workers is not captured. He feels that in this respect the NSSO would be a better source.

Agarwal (1985) points out some intrinsic biases against women, in the Census of India and for that matter in most other data sources for women's work participation in non socialist third world countries. Women are under-counted as workers and job seekers. This bias stems from a variety of factors. One, is the gender of the enumerator and the respondent, both of whom, in India, happen to be usually men. Hence when questions relating to women's work and her availability for work are asked the answer tends to reflect the male perspective. In a cultural setting where women's involvement in other than domestic work is considered non-prestigious this leads to an underestimation of

work participation in non domestic work especially outside the home. In Muslim areas and areas dominated by upper caste Hindus, for instance, a farmer would be reluctant to go on record as having his female family members officially in the labour market. Women's productive work could be seen by men as part of the house work and so reported. Typically no attempt is made to seek out women respondents. Where there is a set of cultural assumptions about the secondary importance of anything women do, there is likely to be under-enumeration of women in employment.

Agarwal (1985) also points out that another definitional bias to be kept in mind is that in some countries (eg Turkey, India) all women working in agriculture are regarded as workers but in some countries they are not (eg, in North and Latin America) unless they make goods for sale. In the previous case urbanisation has a negative impact on female work participation.

According to Agarwal (1985), in the 1951 Census the population was divided into self supporting persons, earning dependents and non earning dependents. Only self supporting and earning dependents were regarded as workers. Female unpaid labourers in agriculture, coming from the cultivator's family, were likely to be reported as non workers. The 1961 Census favoured the inclusion of women as workers since the criterion for being seasonally employed was broad enough to capture many of the rural marginal workers. However the term productive work as applied to women may be interpreted as production for sale. Thus there was a strong possibility that rice-pounding for sale, cattle rearing, collecting and selling firewood and cow-dung

cakes, grass etc would be included as work. The 1971 Census was particularly biased against the inclusion of women workers. Only those reporting themselves as participating in economically productive work as their main activity (in terms of time spent on the task) were counted as workers. They, and those who spent a lesser proportion of their time on economically productive work were likely to be reported as domestic workers even though they may have contributed a significant amount of labour-time in the fields. In the 1981 Census there is an improvement over the 1971 Census because of the initial sorting question, "Have you worked at any time at all during last year? If so, have you worked for the major part of the year (183 days or more)?" Most women workers are likely to be registered at least as marginal workers. This shows the importance of the initial sorting question.

An alternative source of data on Indian work force is the National Sample Survey Organisation (NSSO) (see Nanda (1991)). During the last two decades the NSSO has been conducting quinquennial surveys on employment and unemployment. The fourth quinquennial survey was carried out as a part of the NSSO's 43rd round (July 1987 - June 1988) survey operation. The first survey in this series was conducted during October 1972 - September 1973.

The NSSO has defined work as gainful activity pursued for pay, profit or family gain. This means activity which adds value to the national product. Therefore work is defined as any market or non market activity.

As in the Census, household chores do not constitute work

or gainful activity in the NSSO. Further, both in the Census and NSS, beggars, prostitutes etc are not considered as workers even though they may have some earnings. The NSSO has adopted three different approaches to measure employment and unemployment: (1) usual status, with a reference period of one year preceding the date of survey; (2) current weekly status approach with a reference period of 7 days preceding date of survey; (3) current daily status approach with each day of the 7 days preceding the day of survey as reference period.

Of the above approaches, the measurement of employment and unemployment based on the usual status approach is the one that can be compared with the Census. The usual status has the reference period of one year. In this approach the activity on which a person had spent a relatively longer part of the preceding 1 year prior to the date of survey is considered to be the principal status of a person. Accordingly, a person's principal usual status is considered as "working" if he was engaged during the reference period (1 year) in one or more work activities. A person is regarded as "not in the labour force", if he or she was engaged for a relatively longer period in any non gainful activity. Within the two broad categories, "working" and "not in the labour force", the detailed activity category is determined on the basis of time spent criterion. A person who is categorised as "worker" on the basis of his principal status is a "principal status worker". A non worker who pursued some gainful activity in a subsidiary category, is referred to as a "subsidiary status worker". Principal status workers and

subsidiary status workers together constitute "all workers" according to the usual status classification by the NSSO. It looks as though the NSSO is more capable of capturing the marginal workers than the Census which, in this respect, is likely to under-report. This is the view expressed by Krishnamurty (1983). According to him, even the 1981 Census did not capture all the marginal workers.

In spite of its drawbacks, we shall draw on the Census of India 1981 as our source of data, since it gives us information at the district level.

In our study we shall measure work participation rates as the proportion of workers to total population. First we shall obtain work participation rates for males and females in each district (WPRM and WPRF) defined as the proportion of male and female workers in total male and female population respectively. This is available in the Primary Census Abstracts. Next we calculate the work participation rates for male child (WPRCH) defined as the percentage of male child (ages 0 to 14) workers in total male child population (ages 0 to 14). The data are obtained from the General Economic Tables of the Census.

The next set of variables we construct are work participation rates pertaining to the three major sectors of the economy: primary, secondary and tertiary. Owing to limitation of time and space we confine our attention to male main workers only. We presume that this will be able to capture adequately the overall effect of urbanisation. We construct three variable: work participation rate for male main workers in the primary,

secondary and tertiary sectors (WPRMP, WPRMS, and WPRMT respectively). WPRMP is the number of male main workers working in the primary sector of a district divided by the male population of the district. Similarly, WPRMS is the number of male main workers employed in the secondary sector of a district divided by the district's male population and WPRMT is the number of male main workers employed in the tertiary sector of the district divided by the male population of the district. We shall now specify the categories of workers we have assumed to represent the three sectors. We have followed the National Industrial Classification (NIC) at the one-digit level. Agriculture, hunting, forestry, fishing, mining and quarrying are taken to represent the primary sector. Manufacturing and repair, electricity, gas and water, and construction comprise the secondary sector in our study. The tertiary sector covers wholesale and retail trade, restaurant and hotels, transport, storage and communication, financing, real estate and business services, community, social and personal services.

Data are obtained from the General Economic Tables of the Census. The data for each State is presented in a set of three tables: tables 2.4 to 2.6 for Rajasthan, tables 2.10 to 2.12 for Punjab, tables 2.16 to 2.18 for Karnataka and tables 2.22 to 2.24 for Orissa. The first table gives the overall work participation rates for males, females and male child. The second table reports the number of male main workers in each sectoral division of the economy as per the National Industrial Classification and the male population for each district. The third table gives the

figures for WPRMP, WPRMS and WPRMT.

The Data Point, 1981:

Our analysis is essentially cross sectional, i.e. confined to one point of time. We have chosen 1981 as the year of our study for the following reasons.

The first reason is purely logistical. It would perhaps be more appropriate to choose 1991 Census data. The data collection for this study had to begin in 1980, and at that time all the relevant Census information was not readily available.

Secondly, from the point of view of urbanisation, 1981 definition did not undergo any major changes since 1971, nor was any major change made in 1991. This perhaps indicates that the main theme of the 1981 Census definition of urbanisation is going to be regarded as standard for subsequent Censuses.

Thirdly, from the point of view of work force, 1981 Census, as we have discussed, is least likely to under-represent female workers, compared to previous Censuses. Again there was no major change in 1991.

TABLE 2.1: RAJASTHAN DATA ON URBANISATION

DISTRICTS	URBAN POPN	RURAL POPN	TOTAL POPN	URBAN AREA (square km)
GANGANAGAR	418299	1611669	2029968	106.6
BIKANER	335085	513664	848749	165.5
CHURU	344659	834807	1179466	237.3
JHUNJHUNUN	251267	960316	1211583	149.7
ALWAR	196201	1574972	1771173	129.4
BHARATPUR	321700	1562432	1884132	133.3
SAWAI MADHOPUR	206090	1329780	1535870	123
JAIPUR	1250532	2170042	3420574	474.7
SIKAR	278936	1098309	1377245	202.6
AJMER	616406	823960	1440366	441.8
TONK	143844	639791	783635	153.7
JAISALMER	32929	210155	243082	131.3
JODHPUR	579845	1087946	1667791	185.6
NAGOUR	237077	1391592	1628669	269.5
PALI	234765	1039739	1274504	261.9
BARMER	98229	1020663	1118892	70.1
JALOR	72790	830283	903073	67.8
SIROHI	97001	445048	542049	46.2
BHILWARA	188563	1121816	1310379	241.2
UDAIPUR	355199	2001840	2356959	192.5
CHITTAURGARH	162421	1070073	1232494	149.1
DUNGARPUR	44126	638719	682845	17.2
BANSWARA	55187	831413	886600	34.2
BUNDI	99829	487153	586982	141.6
KOTA	498094	1061690	1559784	314.1
JHALAWAR	91516	693482	784998	57.4

Source: Census of India, Rajasthan Series, 1981;

"Final Population Figures" for urban rural and total popn

"Primary Census Abstract" for urban area

TABLE 2.2: TOWN POPULATION OF RAJASTHAN

DISTRICT	TOWN	POPULATION	
Ganganagar	Anupgarh	12997	
	Bhadra	22568	
	Gajasinghpur	6573	
	Ganganagar	123692	
	Hanumannagar	60071	
	Karnpur	15252	
	Keshrisingpur	9738	
	Nohar	22680	
	Padampur	10734	
	Pilibanga	17852	
	Raisingharh	17069	
	Bikaner	Bikaner (UA)	287712
		Deshnok	10115
Naparadas		12259	
Nokha		24119	
Churu	Bidasar	17814	
	Chhaper	11711	
	Churu ()UA)	62070	
	Churu (M)	61811	
	Dungargar	29076	
	Rajaldesar	15236	
	Rajgar	30379	
	Ratangar	43366	
	Sardarshahar (UA)	56388	
	Sardarshahar (MC)	55473	
	Sujangar	55546	
	Tarannagr	15435	
	Jhunjhunun	Baggar	11692
Bissau		13694	
Chirawa		20841	
Gothra		17216	
Jhunjhunun		47177	
Khatri		12594	
Mandawa		12886	
Mandrela		9299	
Mukandgar		11917	
Nawalgar		38727	
Pilani		26052	
Surajgar		12353	
Udaipurwati		16819	
Alwar		Alwar	145795
		Khairthal	15962
	Kherli	8046	
	Tijara	12199	
Bharatpur	Bari	27399	
	Bayana	20673	
	Bharatpur	105274	
	Bhusawar	2805	
	Deog	44395	
	Dholpur	19451	
	Kaman	12784	
	Kumbher	11610	
	Nadbai	11450	
	Nokha	17371	
Sawai-Madhoper	Rajakhera	12178	
	Weir	11060	
	Gagapur City	46026	
	Hindaun	42706	
	Karauli	37959	
	Sawai Madhopur	59083	
	Toda Bhim	13273	
Jaipur	Todra	7048	
	Bandikui	15873	
	Jaipur	1015160	
	Bassi	12130	
	Banswa	11311	
	Chaksu	14213	
	Daussa	27212	
	Jobner	7683	
	Kotputli	21716	
	Lalsot	15297	
	Manoharpur	14916	
	Phulera	15651	

	Sambhar		17633
	Shahpura		12669
	Viratnagar		9978
Sikar	Fatehpur		51084
	Khandela		15763
	Laxmangar		29215
	Losal		14232
	Neem Kathana		15266
	Rangar		19570
	Reengus		12375
	Sikar		102970
	Sri Madhopur		18461
Ajmer	Ajmer		375593
	Beawar		89998
	Kekri		20393
	Kishangar		62032
	Nasirabad		34616
	Pushkar		9368
	Sarwar		9215
	Vijaynagar		15191
Tonk	Deoli		11159
	Madpura		17994
	Todarai Singh		13871
	Tonk		77653
	Unaiara		7198
	Niwai		15961
Jaisalmer	Jaisalmer		22041
Pokhran		10886	
Jodhpur	Bilara		24006
	Jodhpur		506345
	Phalodi		28539
	Pipar City		20955
Nagaur	Nagaur		48005
	Makrana		40663
	Lodnu		35972
	Kuchaman		26973
	Deedwana		23937
	Merta City		22120
	Kuchera		11352
	Mundwa		10904
	Nawa		9775
	Parbatsar		7376
Pali	Bali		14162
	Jaitaran		11274
	Khudala		11089
	Nimaj		12002
	Pali		91568
	Raipur		10556
	Rani Khurd		8123
	Sadri		18468
	Sojat		24292
	Sojat Road		6879
	Sumetpur		15246
	Takatgarh		11106
Barmer	Balotra		28070
	Barmer		55554
	Siwana		14605
Jalor	Ahore		10611
	Bhinmal		24399
	Jalor		24110
	Sinhar		13740
Sirohi	Abu Road		32180
	Mount Abu		12713
	Pindwara		12338
	Sheoganj		16767
	Sirohi		23903
Bhilwara	Asind		9461
	Bhilwara		1754
	Gangapur		11434
	Jahazpur		12328
	Mandal		13386
	Shahpura		19329
Udaipur	Amet		10698
	Bhindar		12166
	Deogar		12831
	Fatehnagar		13210
	Kanod		9651

	Nathwada	24956
	Rajsamand	27492
	Salumber	11627
	Udaipur	232588
Chittaurgarh	Bari Sadri	11721
	Begun	11340
	Chhoti Sadri	12146
	Chittaurgarh	44940
	Kapasan	13858
	Nimbahera	27763
	Pratapgarh	22903
	Rawatbhata	17700
Dungarpur	Dungarpur	27556
	Sagwara	16570
Banswara	Banswara	48070
	Kushalgarh	7117
Bundi	Bundi(UA)	34492
	Kaprain	10296
	Keshraipatan	11448
	Lakheri	20060
	Nainwa	9998
Kota	Antah	10936
	Baran	42000
	Chhabra	12262
	Chippabarod	10468
	Indargarh	4157
	Kaithoon	17956
	Kota	358241
	Mangrot	12858
	Ramganj Mandi	15530
	Sangod	12033
	Suket	7654
Jhalawar	Aklera	10504
	BhawaniMandi	16928
	Jhalawar	23257
	Jhalrapatan	16805
	Pirawa	8263
	Sunel	9759

Source: District Census Handbooks and Town Directory, Census of India 1981

TABLE 2.3: RAJASTHAN INDICES OF URBANISATION, 1981

DISTRICTS	URB1	URB2	URB3
GANGANAGAR	0.25954	3924.01	66399.71
BIKANER	0.65234	2024.68	293981.75
CHURU	0.41286	1452.42	46624.07
JHUNJHUNUN	0.26165	1678.47	25661.06
ALWAR	0.12457	1516.24	111753.42
BHARATPUR	0.20590	2413.35	50976.23
SAWAI MADHOPUR	0.15498	1675.53	44152.31
JAIPUR	0.57627	2634.36	8276608.92
SIKAR	0.25397	1376.78	54740.8
AJMER	0.74810	1395.22	251368.09
TONK	0.22483	935.88	48507.32
JAISALMER	0.15669	250.79	18353.04
JODHPUR	0.53297	3124.16	9227076.77
NAGOUR	0.17036	879.69	31380.02
PALI	0.22579	896.39	16168.7
BARMER	0.09624	1401.27	41611.72
JALOR	0.08767	1073.60	20257.97
SIROHI	0.21796	2099.59	25009.05
BHILWARA	0.16809	781.77	16892.28
UDAIPUR	0.17744	1845.19	158540.47
CHITTAURGARH	0.15178	1089.34	2607.47
DUNGARPUR	0.06909	2565.47	23430.59
BANSWARA	0.06638	1613.65	42788.64
BUNDI	0.20492	705.01	22355.27
KOTA	0.46915	1585.78	263502.86
JHALAWAR	0.13197	1594.36	18562.73

Source: URB1 and URB2 compiled from Table 2.1
 URB3 compiled from Table 2.2

TABLE 2.4: RAJASTHAN DATA ON WORKFORCE (MALE, FEMALE & MALE CHILD)

DISTRICTS	WORKFORCE PARTICIPATION RATES (%)		MALE CHILD (AGE GROUP 0 - 14)		
	MALE (WPRM)	FEMALE (WPRF)	WORKERS	POPN	WK PARTCN RT (WPRCH)
GANGANAGAR	53.2	10.0	4498	452760	1.0
BIKANER	50.9	13.1	2817	188924	1.5
CHURU	49.4	19.8	2811	270750	1.0
JHUNJHUNUN	48.2	23.0	2059	284968	0.7
ALWAR	48.1	22.8	3570	412802	0.9
BHARATPUR	48.4	13.5	3567	452228	0.8
SAWAI MADHOPUR	49.2	16.8	2530	351489	0.7
JAIPUR	48.1	15.7	12884	747234	1.7
SIKAR	45.0	16.1	2295	319262	0.7
AJMER	52.1	24.3	12402	290184	4.3
TONK	52.9	28.4	7506	166975	4.5
JAISALMER	56.2	11.8	1105	52439	2.1
JODHPUR	50.2	15.9	3281	362739	0.9
NAGAU	50.7	24.4	4906	362332	1.4
PALI	50.9	22.9	3993	281107	1.4
BARMER	54.8	26.6	4372	250360	1.7
JALOR	51.6	14.8	1561	207099	0.8
SIROHI	50.6	19.0	2843	119748	2.4
BHILWARA	57.7	31.2	8910	255102	3.5
UDAIPUR	53.0	25.9	5065	484512	1.0
CHITTAURGARH	57.5	38.0	4461	246357	1.8
DUNGARPUR	51.0	38.1	2137	149233	1.4
BANSWARA	51.0	33.2	830	195570	0.4
BUNDI	54.2	19.4	3454	127084	2.7
KOTA	50.6	15.2	4304	338252	1.3
JHALAWAR	53.9	24.3	3142	170186	1.8

Source: Primary Census Abstract for WPRM and WPRF and General Economic Tables for WPRCH
Census of India, Rajasthan Series, 1981.

TABLE 2.5: RAJASTHAN DATA ON MAIN MALE WORKERS SECTORWISE

DISTRICTS	CULTIVATORS	AGRI LAB	AGRI HUNTG FORSTRY FISHG	MINING QUARRYING	MANUPAC REPAIR	ELECTRICITY GAS WATER	CONSTRUCTION	WHOLESALE & RETAIL TRADE	TRANSPRT COMM STORAGE	FIN. INSUR. REAL ESTATE	COMM SOCIAL PERS SERVICES	TOTAL MALE POPULATION
GANGANAGAR	330302	83159	7423	771	44104	1481	7614	34301	14735	6530	41065	1083124
BIKANER	117232	5773	7085	1519	20749	2795	7278	16625	11803	2513	31333	448752
CHURU	204499	9359	4332	147	18263	1734	6794	18443	7779	2006	18676	603759
JHUNJHUNUN	149446	12864	3803	8860	25164	2513	9911	14877	6380	1314	24980	619313
ALWAR	291247	21085	6657	1838	35635	2210	7230	22194	8630	3460	37095	935898
BHARATPUR	340382	26918	5574	3197	33301	2043	7940	20657	11387	3145	36034	1028749
SAWAI MADHOPUR	278389	16904	5272	3115	28843	1678	6882	17609	12765	2289	25857	822859
JAIPUR	395963	28141	18014	3513	148637	8592	23618	56459	36479	15836	127058	1966452
SIKAR	184419	13091	3770	1453	29944	3387	14287	20319	7496	1736	26561	701778
AJMER	160804	18936	24515	1344	58513	2267	10592	28578	29646	5115	44948	749362
TONK	130864	11382	13642	713	21960	1092	2497	9942	3790	1087	15031	406530
JAISALMER	43379	2151	10051	99	3940	577	1705	2272	1431	233	8025	134204
JODHPUR	243617	16284	7541	6056	43690	5696	11776	25999	20683	4803	46407	873531
NAGOUR	282060	19623	11198	4099	37450	2079	6789	18304	8919	1743	22244	831985
PALI	170712	35822	18091	817	43788	2085	7527	19871	7105	2584	20690	654784
BARMER	242216	7921	11906	1190	17324	904	1654	10263	4672	975	11998	587648
JALOR	167235	21253	6601	681	14926	907	1893	9814	2307	1019	9978	465067
SIROHI	61978	15709	10628	932	13984	888	3156	9426	6075	1207	12741	276178
BHILWARA	252999	16905	21436	7991	32027	1832	5415	15739	5923	1888	22429	674923
UDAIPUR	407986	23593	12372	10115	47767	3653	13992	32726	13050	3751	49307	1191909
CHITTAURGARH	240410	18692	11221	3177	24077	3557	8497	15440	6228	1860	20468	631699
DUNGARPUR	122632	64642	2640	2416	7826	904	1063	5025	2241	633	9314	333951
BANSWARA	171974	7473	1530	218	9651	677	7325	6098	2427	737	11557	446837
BUNDI	99466	13034	8180	5703	14170	1353	3607	6566	2333	765	11393	311022
KOTA	176077	49408	187766	10312	55917	4624	12251	24270	17340	2894	48900	326304
JHALAWAR	143879	23039	6544	1732	15882	709	1672	8407	2345	730	12615	407522

Source: Census of India, Rajasthan Series, 1981, General Economic Tables.

TABLE 2.6: RAJASTHAN DATA ON MALE WORK PARTICIPATION SECTORW

DISTRICTS	MALE WORK PARTICIPATION RATES (IN PERCENTAGES)		
	PRIMARY (WPRMP)	SECONDARY (WPRMS)	TERTIARY (WPRMT)
GANGANAGAR	38.93	4.91	8.92
BIKANER	29.33	6.87	13.99
CHURU	36.16	4.44	7.77
JHUNJHUNUN	28.25	6.07	7.68
ALWAR	34.28	4.82	7.63
BHARATPUR	36.56	4.21	6.92
SAWAI MADHOPUR	36.91	4.55	7.11
JAIPUR	24.67	10.01	13.05
SIKAR	28.89	6.79	8.00
AJMER	27.44	9.52	14.45
TONK	38.52	6.28	7.34
JAISALMER	41.49	4.64	8.91
JODHPUR	31.31	7.00	11.21
NAGPUR	38.10	5.57	6.16
PALI	34.43	8.16	7.67
BARMER	44.79	3.38	4.75
JALOR	42.10	3.81	4.97
SIROHI	32.32	6.53	10.66
BHILWARA	44.35	5.82	6.82
UDAIPUR	38.10	5.49	8.29
CHITTAURGARH	43.30	5.72	6.96
DUNGARPUR	57.59	2.93	5.15
BANSWARA	40.55	3.95	4.66
BUNDI	40.63	6.15	6.77
KOTA	51.26	8.81	11.30
JHALAWAR	42.99	4.48	5.91

Source: Compiled from Table 2.5

TABLE 2.7: PUNJAB DATA ON URBANISATION

DISTRICTS	URBAN POPN	RURAL POPN	TOTAL POPN	URBAN AREA (square km)
GURDASPUR	328268	1185176	1513444	62
AMRITSAR	721629	1466861	2188490	157.7
FIROZPUR	298071	1009733	1307804	77.9
LUDHIANA	764140	1054772	1818912	158
JALANDHAR	612591	1121983	1734574	140.7
KAPURTHALA	163418	381831	545249	35.5
HOSHIARPUR	179620	1064187	1243807	75.9
RUPNAGAR	154638	562024	716662	77.3
PATIALA	464295	1104603	1568898	110.3
SANGRUR	321641	1088609	1410250	73.7
BHATINDA	295877	1008729	1304606	140.2
FARIDKOT	343569	1092659	1436228	90.2

Source: Census of India, Punjab Series, 1981;

"Final Population Figures" for urban rural and total popn

"Primary Census Abstract" for urban area

TABLE 2.8: TOWN POPULATION IN PUNJAB

DISTRICT	TOWN	POPULATION	
Gurdaspur	Pathankot	110039	
	Battala	87135	
	Gurdaspur	39529	
	Qadian	15804	
	Sujanpur	13095	
	Dinanagar	13078	
	Dhariwal	12212	
	Fategarh Churian	9372	
	Dera Baba Nanak	6212	
	Sri Hargobindpur	3215	
	Narot Jaimal Singh	2660	
	Amritsar	Anjala	7506
		Amritsar (MC)	594844
Amritsar (CB)		11040	
Chola Shahib		5913	
Jandiala		16335	
Khem-Karan		8757	
Majitha		8729	
Patti		19765	
Ramdass		4123	
Rayya		7049	
Tarn Taran		36903	
Ferozpur		Abohar	86334
		Ferozpur	61162
	Fazilka	43548	
	Ferozpur (Cant)	38582	
	Zira	19581	
	Jalalabad	14734	
	Dharamkot	9125	
	Talwandi Bhai	9117	
	Guruhar Sahai	7684	
	Ludhiana	Ludhiana	607052
Khanna		53761	
Jagraon		39683	
Raikot		17106	
Samrala		10824	
Macchiwara		9621	
Mullanpur Dhaka		8115	
Doraha		7606	
Payal		5224	
Hatur		5148	
Jalandhar		Adampur	10960
	Alawalpur	5851	
	Banga	13590	
	Bhojpur	6882	
	Goraya	8802	
	Jalandhar	33356	
	Kartarpur	17878	
	Lohian	5496	
	Malsian	5700	
	Nakodar	26239	
	Nawa Shahar	26726	
	Noor Mahal	9676	
	Pillaur	17650	
	Rahon	8671	
	Shalikit	7018	
Kapurthala	Begowal	6744	
	Bhulath	4926	
	Dhilwan	5320	
	Kapurthala	50300	
	Nadala	4608	
	Phagwara	75961	
	Sultanpur	12143	
	Talwandi Chaudhurian	3416	
Hoshiarpur	Balachaur	6630	
	Dasua	14657	
	Gardiwal	4459	
	Garhshankar	9515	
	Haryana	5633	
	Hoshiarpur	85648	
	Mukerian	14454	
	Shamchaurasi	3062	

	Talwara	17907
	Urmar Tanda	17655
Rupnagar	Anandpur Shahib	8571
	Chamkaur Shahib	4692
	Kherar	21807
	Kurali	12637
	Morinda	13502
	Nangal	25523
	Naya Nangal	10390
	Rupnagar	25165
	SAS Nagar	32351
Patiala	Amloh	7098
	Banaur	7453
	Bassi	16672
	Dera Bassi	7421
	Ghagga	4900
	Gobindgarh	26637
	Nabha	45921
	Patiala	206254
	Patran	7998
	Rajpura	58645
	Sanaur	13634
	Sirhind	2642
	Samana	31282
Sangrur	Maler Kotla	65756
	Sangrur	45220
	Barnala	43440
	Sunam	35505
	Dhuri	27100
	Ahmedgar	16874
	Dhanaula	13885
	Bahadur	13350
	Longowal	12530
	Lehragagar	11455
	Tapa	11088
	Bhawanigar	8901
	Moonak	8536
	Khanausi Kalan	4923
Bhatinda	Bareta	9494
	Bhatinda	127363
	Bhucho Mandi	7820
	Budhala	15968
	Galiana	8596
	Kot Patta	49783
	Mansa	43289
	Maur	18853
	Raman	14318
	Rampura Phul	31890
	Sangat	2859
	Talwandi Sabo	10454
Faridkot	Bagha Purana	14289
	Barriwala	5151
	Faridkot	42423
	Giddarbaha	26828
	Jaitu	26061
	Killanwali	5966
	Kot Kapura	47550
	Lakhewali	3555
	Malout	40533
	Moga	80272
	Muktsar	50941

Source: District Census Handbooks and Town Directory, Census of India 1981

TABLE 2.9: PUNJAB INDICES OF URBANISATION, 1981

DISTRICTS	URB1	URB2	URB3
GURDASPUR	0.27698	5294.65	32147.36
AMRITSAR	0.49195	4575.96	494187.57
FIROZPUR	0.29520	3826.33	53146.04
LUDHIANA	0.72446	4836.33	488990.17
JALANDHAR	0.54599	4353.88	246194.98
KAPURTHALA	0.42799	4603.32	52494.63
HOSHIARPUR	0.16879	2366.53	32329.98
RUPNAGAR	0.27514	2000.49	22857.02
PATIALA	0.42033	4209.38	115670.07
SANGRUR	0.29546	4364.10	36080.73
BHATINDA	0.29332	2110.39	68592.8
FARIDKOT	0.31443	3808.97	51435.35

Source: URB1 and URB2 compiled from Table 2.1
 URB3 compiled from Table 2.2

TABLE 2.10: PUNJAB DATA ON WORKFORCE (MALE, FEMALE & MALE CHILD)

DISTRICTS	WORKFORCE PARTICIPATION RATES (%)		MALE CHILD (AGE GROUP 0 - 14)		
	MALE (WPRM)	FEMALE (WPRF)	WORKERS	POPN	WK PARTCN RT (WPRCH)
GURDASPUR	54.0	4.5	1895	309595	0.006
AMRITSAR	49.7	3.2	4223	442071	0.010
FIROZPUR	56.1	7.8	2084	268466	0.008
LUDHIANA	54.7	5.0	3552	325545	0.011
JALANDHAR	51.2	4.8	3005	335437	0.009
KAPURTHALA	52.4	4.3	1142	107788	0.011
HOSHIARPUR	49.8	6.9	957	237368	0.004
RUPNAGAR	51.9	5.6	798	134944	0.006
PATIALA	54.0	4.7	2416	307633	0.008
SANGRUR	57.6	8.5	2723	265636	0.010
BHATINDA	56.7	10.8	3472	257430	0.013
FARIDKOT	55.6	8.8	2513	282634	0.009

Source: Primary Census Abstract for WPRM and WPRF and General Economic Tables for WPRCH
Census of India, Punjab Series, 1981.

TABLE 2.11: PUNJAB DATA ON MAIN MALE WORKERS SECTORWISE

DISTRICTS	CULTIVATORS	AGRI LAB	AGRI HUNTG FORSTRY FISHG	MINING QUARRYING	MANUFAC REPAIR	ELECTRICITY GAS WATER	CONSTRUCTION	WHOLESALE & RETAIL TRADE	TRANSPT COMM STORAGE	FIN. INSUR. REAL ESTATE	COMM SOCIAL PERS SERVICES	TOTAL MALE POPULATION
GURDASPUR	131199	90750	4063	80	46977	5594	9099	35030	17449	4099	45246	793484
AMRITSAR	203378	137980	5231	195	86440	4427	12095	63777	30468	11962	69707	1169888
FIROZPUR	177363	92210	2492	37	29864	1790	6284	26578	12103	5024	30013	694260
LUDHIANA	144650	93756	6083	130	128324	3601	10591	53188	26506	8784	56062	978276
JALANDHAR	124870	94834	4173	92	89270	3016	11588	44284	22702	8761	61310	916374
KAPURTHALA	54777	26878	1845	48	25621	1037	4650	12421	4884	2466	14972	287286
HOSHIARPUR	117081	66211	2898	86	33963	5009	9124	24026	12242	4160	39681	649565
RUPNAGAR	71689	32736	2500	81	29517	4952	5003	11255	8009	2440	29489	385087
PATIALA	164071	102068	4362	137	55380	4166	9005	37514	16739	7285	50585	841916
SANGRUR	204394	105777	4574	39	34728	2704	7803	28229	9286	4234	29669	758058
BHATINDA	185536	87794	5443	147	30072	3706	6805	25109	10495	5654	29357	699815
PARIDROT	177771	116163	3787	63	34518	2270	6223	29745	11103	4547	33238	763176

Source: Census of India, Punjab Series, 1981, General Economic Tables.

TABLE 2.12: PUNJAB DATA ON MALE WORK PARTICIPATION SECTORWISE

DISTRICTS	MALE WORK PARTICIPATION RATES (IN PERCENTAGES)		
	PRIMARY (WPRMP)	SECONDARY (WPRMS)	TERTIARY (WPRMT)
GURDASPUR	28.49	7.77	12.83
AMRITSAR	29.64	8.80	15.04
FIROZPUR	39.19	5.46	10.62
LUDHIANA	25.01	14.57	14.77
JALANDHAR	24.44	11.34	14.96
KAPURTHALA	29.08	10.90	12.09
HOSHIARPUR	28.68	7.40	12.33
RUPNAGAR	27.79	10.25	13.29
PATIALA	32.15	8.14	13.32
SANGRUR	41.53	5.97	9.42
BHATINDA	39.86	5.80	10.09
FARIDKOT	39.02	5.64	10.30

Source: Compiled from Table 2.5

TABLE 2.13: KARNATAKA DATA ON URBANISATION

DISTRICTS	URBAN POPN	RURAL POPN	TOTAL POPN	URBAN AREA (square km)
BANGALORE	3193216	1754394	4947610	424.7
BELGAUM	671418	2309022	2980440	203.2
BELLARY	492160	997065	1489225	439.2
BIDAR	177416	818275	995691	43.4
BIJAPUR	578628	1823154	2401782	320.4
CHIKMAGALUR	159879	751890	911769	67.5
CHITRADURGA	417743	1359756	1777499	56.3
DAKSHIN KANNAD	581613	1795111	2376724	389.1
DHARWAD	1038258	1907229	2945487	755.6
GULBARGA	475732	1604911	2080643	122.3
HASSAN	198472	1158542	1357014	46.8
KODAGU	71663	390225	461888	39.8
KOLAR	427831	1477661	1905492	103.2
MANDYA	220025	1198084	1418109	61
MYSORE	711567	1884333	2595900	156.7
RAICHUR	343728	1440094	1783822	88
SHIMOGA	426180	1230551	1656731	140.3
TUMKUR	272284	1705570	1977854	53.1
UTTAR KANNAD	271793	800241	1072034	172

Source: Census of India, Karnataka Series, 1981;

"Final Population Figures" for urban rural and total popn

"Primary Census Abstract" for urban area

TABLE 2.14: TOWN POPULATION OF KARNATAKA

DISTRICT	TOWN	POPULATION	
Bangalore	Bangalore	2628593	
	Channapatna	50725	
	HA Sanitary Board	49050	
	Dodballapur	47168	
	Ramanagaram	44005	
	Devarajivanahalli	37285	
	Kanakapura	30161	
	ITI noitified area	28303	
	Yalahanka	23695	
	BEL township	20218	
	Baiyyappanahalli	19955	
	Anekal	19267	
	Krishnarajapura	18182	
	Magadi	17623	
	Hoskote	17538	
	Vijayapura	17212	
	HAL township	15718	
	Kalagondahalli	15443	
	Devanahalli	15192	
	Hebbal	13170	
	Kengeri	12950	
	Nelamangaia	12574	
	Kadenahalli	10515	
	HMT township	9660	
	Lingarajapura	8561	
	Jalahalli	8102	
	HMT Watch factory township	2351	
	Belgaum	Belgaum	277430
		Gokak	42496
		Nipani	41783
		Bamdurg	27555
Athni		27549	
Bailhongal		26465	
Soundati-Yellamma		26404	
Belgaum Cantt.		25942	
Sankeshwar		24018	
Chikodi		22789	
Konnur		20252	
Kudachi		18491	
Mudalgi		17812	
Hukeri		15545	
Sadalgi		13911	
Khanapur		12513	
Gokak Falls		11587	
Raybag		9635	
Sambre		6309	
Londa		5932	
Bellary	Bellary	201579	
	Hospet	96861	
	Harpanahalli	27308	
	Kampli	27110	
	Siruguppa	23350	
	Amaravati	18490	
	Sandur	17698	
	Kamalapuram	17474	
	Kotturu	15445	
	Tekkalakote	14754	
	Kudligi	13981	
	Hadagalli	13724	
	Donimalai township	4386	
	Bidar	Bidar	78856
Basavakalyan		33298	
Homnabad		21829	
Bhalgi		18827	
Chitgoppa		16635	
Bijapur	Aurad	7971	
	Bijapur	147313	
	Bagalkot	67858	
	Rabkavi-Banhatti	51693	
	Jamkhandi	38542	
	Ilkal	36058	
	Guledagudda	29262	
Mudhol	21356		

	Terdal	19083
	Basavana Begavadi	15672
	Talikota	13336
	Mahalingapur	17309
	Indi	17767
	Sindgi	15811
	Badami	15023
	Muddebihal	14962
	Hungund	14550
	Kerur	13196
	Kamatgi	11090
	Bilgi	10047
Chikmagalur	Chikmagalur	60582
	Tarikere	23929
	Kadur	19406
	Birur	18081
	Kudremukh Mines Area	7972
	Ajjampur	7693
	Mudigere	7083
	Narasimharajapura	6102
	Koppa	4759
	Sringeri	4272
Chitradurga	Davangere	196621
	Chitradurga	74580
	Harihara	52334
	Hiriyur	25151
	Challakere	25043
	Hosdurga	12380
	Holalkere	9809
	Jagalur	9742
	Molakalmuru	7441
	Mayakonda	4642
Dakshin Kannad	Mangalore	193699
	Udupi	33413
	Bantval	31378
	Coondapoor	28315
	Surathkal	25998
	Ullal	25508
	Karkal	20713
	Puttur	20103
	Padavu	18618
	Malpe	17985
	Beinduru	14071
	Mudbidri	13575
	Saligram	13228
	Mulki	12098
	Gangoli	11957
	Kankanadi	11520
	Someshwar	11031
	Sulya	10394
	Derebail	10220
	Badaga-Bettu	8333
	Tonse-West	8306
	Peramunnuru	7469
	Kotekara	7289
	Alpe	7032
	New Mangalore Port	6945
	Kavuru	6747
	Beltangadi	5668
Dharwad	Hubli-Dharwad	527108
	Gadag-Betigeri	117368
	Ranibennur	58118
	Haveri	36368
	Lakshmeshwar	25444
	Savanur	25053
	Nargund	23531
	Gajendragarh	20226
	Annigeri	18614
	Byadgi	17935
	Hangal	17089
	Ron	16363
	Naval Gund	15758
	Shiggaon	14985
	Mulgund	14535
	Kundgol	14325
	Naregal	14183
	Mundargi	13617

	Shirhatti	13307
	Alnavar	13026
	Kalghatgi	11035
	Hirekerur	12070
Gulbarga	Gulbarga	221325
	Yadgir	40569
	Shahabad	38807
	Aland	26435
	Shorapur	25595
	Chitapur	18322
	Wadi	18092
	Shahper	17981
	Sedam	15823
	Gurmatkal	11616
	Afzalpur	10558
	Chincholi	10434
	Shahabad ACC	8509
	Jevargi	8923
	Wadi ACC	3343
Hassan	Hassan	71534
	Arsikere	25351
	Holenarsipur	20219
	Channarayapatna	16297
	Belur	13590
	Sakleshpur	12025
	Arkalgud	11069
	Konanur	6931
	Banvar	6601
	Shravanbelgola	5441
	Gorur	5237
	Alur	4177
Kodagu	Madikeri	24724
	Virajpet	11676
	Kushalnagar	6936
	Somvarpet	6936
	Gonikoppal	5391
	Kudmangalur	4522
	Ponnampet	4367
	Sanivarsante	2691
	Kodlipet	2254
	Suntikoppa	2166
Kolar	Kolar Gold Fields	77679
	Kolar	65834
	Robertsonpet	61099
	Chikballapur	40096
	Chintamani	39208
	Mulbagal	26762
	Bangarapet	22570
	Sidlaghatta	22490
	Gauribidanur	18738
	Malur	15093
	Srinivaspur	12433
	Bagepalli	7923
	Gudibanda	6419
	Manchenahali	5880
	BEML Nagar	5607
Mandya	Mandya	100285
	Malvalli	25114
	Srirangaptanna	18137
	Maddur	17402
	Pandavapura	14164
	Krishnarajpet	12800
	Nagamangala	11084
	Belakavadi	6396
	Hongahalli	6247
	Belluru	5438
	Melikote	2958
Mysore	Mysore	479081
	Chamrajnagar-Ramasamudram	40422
	Kollegal	36109
	Nanjangud	34939
	Hunsur	27727
	Gundlupet	19965
	Krishnarajanagara	18860
	Bannur	15108
	Piriyapatna	10039
	Tirumakudal-Narsipur	8910

	Sargur	7544
	Yelandur	6710
	Heggadadevenkote	6135
Raichur	Raichur	124762
	Gangavati	58735
	Koppal	35975
	Sindnur	25575
	Manvi	21345
	Lingsugur	16878
	Devadurga	11935
	Kushtagi	11781
	Mudgai	11458
	Hatti Gold Mines	9962
	Yelbarga	7551
	Munirabad	7471
Shimoga	Shimoga	151783
	Bhadravati New Town	77055
	Bhadravati	53551
	Sagar	35648
	Shikarpur	22485
	Jog Falls	16276
	Tirthahalli	12174
	Channagiri	11869
	Honnali	10942
	Siralkoppa	10518
	Nyamti	7669
	Sorab	6686
	Kumsi	4963
	Khosanagara	4561
Tumkur	Tumkur	108670
	Tiptur	30468
	Sira	27665
	Madhugiri	18082
	Kunigal	18076
	Chiknayakanhalli	15596
	Pavagada	14435
	Gubbi	11667
	Turuvekere	8988
	Korotagere	8085
	YN Hosakote	7508
	Adityapatna	3044
Uttar Kannad	Dandeli	47625
	Karwar	47210
	Sirsi	38907
	Bhatkal	25665
	Kumta	23385
	Haliyal	15655
	Honavar	15124
	Ankola	12153
	Yellapur	11792
	Siddapur	11289
	Mundgod	10332
	Ambikanagar	7734
	Ganeshgudi	4922

Source: District Census Handbooks and Town Directory, Census of India 1981

TABLE 2.15: KARNATAKA INDICES OF URBANISATION, 1981

DISTRICTS	URB1	URB2	URB3
BANGALORE	1.82012	7518.76	2145681.46
BELGAUM	0.29078	3304.22	551800.45
BELLARY	0.49361	1126.58	109438.6
BIDAR	0.21682	4087.93	480018.46
BIJAPUR	0.31738	1805.96	83638.77
CHIKMAGALUR	0.21264	2368.58	32507.88
CHITRADURGA	0.30722	7419.95	109883.36
DAKSHIN KANNAD	0.32400	1494.76	77353.05
DHARWAD	0.54438	1374.08	290524.53
GULBARGA	0.29642	3889.88	116104.91
HASSAN	0.17131	4240.85	35542.64
KODAGU	0.18365	1800.58	12969.27
KOLAR	0.28953	4145.65	46469.46
MANDYA	0.18365	3606.97	54199.04
MYSORE	0.37762	4540.95	331304.64
RAICHUR	0.23868	3906.00	96541.82
SHIMOGA	0.34633	3037.63	8107.59
TUMKUR	0.15964	5127.76	54928.06
UTTAR KANNAD	0.33964	1580.19	30511.78

Source: URB1 and URB2 compiled from Table 2.1
URB3 compiled from Table 2.2

TABLE 2.16: KARNATAKA DATA ON WORKFORCE (MALE, FEMALE & MALE CHILD)

DISTRICTS	WORKFORCE PARTICIPATION RATES (%)		MALE CHILD (AGE GROUP 0 - 14)		
	MALE (WPRM)	FEMALE (WPRF)	WORKERS	POPN	WK PARTCN RT (WPRCH)
BANGALORE	52.8	18.1	47032	921242	5.1
BELGAUM	55.2	16.0	52145	595307	8.8
BELLARY	54.4	27.2	32512	313060	10.4
BIDAR	51.5	20.3	19850	214848	9.2
BIJAPUR	53.7	19.9	50035	501493	10.0
CHIKMAGALUR	55.8	20.9	12060	173965	6.9
CHITRADURGA	54.5	22.3	33155	357160	9.3
DAKSHIN KANNAD	48.8	31.7	15350	453628	3.4
DHARWAD	54.2	20.8	6032	79918	7.5
GULBARGA	54.6	25.8	55747	442696	12.6
HASSAN	55.6	25.2	21682	274719	7.9
KODAGU	59.6	34.1	5284	82784	6.4
KOLAR	54.3	24.3	30623	377175	8.1
MANDYA	55.9	17.0	24707	283990	8.7
MYSORE	56.5	18.1	44598	501154	8.9
RAICHUR	56.9	30.7	44265	375489	11.8
SHIMOGA	54.2	21.0	25681	332701	7.7
TUMKUR	57.7	26.5	26645	382758	7.0
UTTAR KANNAD	53.7	22.4	9921	210042	4.7

Source: Primary Census Abstract for WPRM and WPRF and General Economic Tables for WPRCH
Census of India, Karnataka Series, 1981.

TABLE 2.17: KARNATAKA DATA ON MAIN MALE WORKERS SECTORWISE

DISTRICTS	CULTIVATORS	AGRI LAB	AGRI HUNTG FORSTRY FISHG	MINING QUARRYING	MANUFAC REPAIR	ELECTRICITY GAS WATER	CONSTRUCTION	WHOLESALE & RETAIL TRADE	TRANSPT COMM STORAGE	FIN. INSUR. REAL ESTATE	COMM SOCIAL PERS SERVICES	TOTAL MALE POPULATION
BANGALORE	321241	90355	22286	1784	368791	11491	54575	145810	89399	30160	194369	2582539
BELGAUM	410365	161018	19369	802	99639	3256	19100	50128	20967	7852	49092	1523311
BELLARY	163585	110454	6391	11529	37139	2443	8257	23506	13953	4065	29242	750901
BIDAR	104463	81334	9838	328	20535	995	4703	17909	7440	1842	17954	506043
BIJAPUR	269472	176171	19381	447	75722	2723	13865	36458	13769	5025	38134	1211536
CHIKMAGALUR	117378	38745	82882	1962	14458	1342	4691	15405	5675	1838	16255	466918
CHITRADURGA	227553	108244	18200	1648	52789	2320	10185	32304	11993	4136	28958	914214
DARSHIN KANNAD	151153	98323	42024	1114	113095	3077	14367	55780	33645	9211	46304	1154122
DHARWAD	21847	24089	16733	1982	91214	2766	14679	62467	35283	11139	58817	201934
GULBARGA	221375	152107	28646	8155	52989	1725	17703	34717	14594	3609	37600	1050187
HASSAN	241308	32866	19282	1226	20009	2298	7027	18693	9480	2525	19790	683036
KODAGU	35793	19322	43467	62	9557	420	4259	9948	4583	1593	11419	238893
KOLAR	286507	87776	15059	13559	38876	2489	6690	27464	11077	2776	27140	966653
KANDYA	252464	66735	5023	31	24606	1753	4838	17402	4855	2035	21275	723674
MYSORE	379300	122929	18930	793	70819	2695	18084	46440	22616	5922	54241	1330807
RAICHUR	224396	151995	10585	5399	35645	1760	11019	26906	10207	3940	25546	897241
SHIMOGA	203408	107770	10929	1709	48075	3372	11998	30217	10024	3346	25251	850929
TUMKUR	352567	76940	11066	736	37744	2460	6522	24652	9111	2324	29884	1008522
UTTAR KANNAD	107635	33522	36873	4128	33091	4196	7812	21864	13508	3019	20977	547413

Source: Census of India, Karnataka Series, 1981, General Economic Tables.

TABLE 2.18: KARNATAKA DATA ON MALE WORK PARTICIPATION SECTORW

DISTRICTS	MALE WORK PARTICIPATION RATES (IN PERCENTAGES)		
	PRIMARY (WPRMP)	SECONDARY (WPRMS)	TERTIARY (WPRMT)
BANGALORE	16.87	16.84	17.80
BELGAUM	38.83	8.01	8.41
BELLARY	38.88	6.37	9.42
BIDAR	38.72	5.18	8.92
BIJAPUR	38.42	7.62	7.71
CHIKMAGALUR	51.61	4.39	8.39
CHITRADURGA	38.90	7.14	8.47
DAKSHIN KANNAD	25.35	11.31	12.56
DHARWAD	32.02	53.81	83.05
GULBARGA	39.07	6.90	8.62
HASSAN	43.14	4.29	7.39
KODAGU	41.29	5.96	11.53
KOLAR	41.68	4.97	7.08
MANDYA	44.81	4.31	6.30
MYSORE	39.22	6.88	9.71
RAICHUR	43.73	5.40	7.42
SHIMOGA	38.05	7.46	8.09
TUMKUR	43.76	4.63	6.54
UTTAR KANNAD	33.28	8.24	10.85

Source: Compiled from Table 2.5

TABLE 2.19: ORISSA DATA ON URBANISATION

DISTRICTS	URBAN POPN	RURAL POPN	TOTAL POPN	URBAN AREA (square km)
SAMBALPUR	353433	1927543	2280976	290.5
SUNDARGAR	409333	928538	1337871	22.4
KENDUJHAR	126356	986266	1114622	167.6
MAYURBHANJ	90538	1491335	1581873	70.9
BALESHWAR	18596	2066845	2085441	145.9
CUTTACK	475993	4152807	4628800	212.6
DHENKANAL	123714	1459073	1582787	110.8
PHULBANI	37716	679519	717235	49.9
BELANGIR	133225	1352588	1485813	122
KALAHANDI	80541	1258651	1339192	80.6
KORAPUT	280962	2203043	2484005	329.6
GANJAM	380389	2289510	2669899	275.6
PURI	237573	1252638	1490211	207.9

Source: Census of India, Orissa Series, 1981;

"Final Population Figures" for urban rural and total popn

"Primary Census Abstract" for urban area

TABLE 2.20: TOWN POPULATION IN ORISSA

DISTRICT	TOWN	POPULATION	
Sambalpur	Sambalpur	112631	
	Jharsuguda	54859	
	Brojrajnagar	54033	
	Bargarh	35400	
	Burla	27882	
	Hirakud	21701	
	Barapali	13639	
	Debgarh	13581	
	Padmapur	10337	
Sundargarh	Kochinda	9370	
	Rourkela Steel Township	214521	
	Rourkela Civil Township	96000	
	Rajgangapur	31925	
	Biramitrapur	31099	
	Sundargarh	23699	
	Jalda	12089	
Kendujhar	Barbil	30030	
	Kendujhar	28059	
	Joda	26303	
	Anandpur	24605	
	Balagoda	9515	
	Daitari	4844	
Mayurbhanj	Baripada	52989	
	Rairangpur	15503	
	Karanjia	14910	
	Udala	7136	
Balেশwar	Balেশwar	65779	
	Bhadrak	60600	
	Basudebpur	20031	
	Soro	18599	
	Jaleswar	13146	
	Chandabali	7808	
	Cuttack	Cuttack	295268
		Paradip	33042
Chaudwar		32144	
Kendropara		27564	
Jajapur		22232	
Jagatsinghapur		21126	
Jajapur Road		20935	
Banki		12595	
Athagad		1108	
Dhenkanal		Dhenkanal	35635
		Anugul	18060
	Talcher	16227	
	Bhuban	15517	
	Rangali Dam	13213	
	Kamakshya Nagar	10154	
	Talcher Termal Township	5371	
	FCI Township	5067	
	Dera Colliery Township	4452	
	Phulbani	Phulbani	18326
Baudh		12589	
G.Udaigiri		6846	
Balangir	Balangir	54943	
	Titlagar	21486	
	Kantabanji	14818	
	Patnagar	13597	
	Binika	11004	
	Sonapur	10451	
Kalahandi	Tarbha	6926	
	Bhavanipatna	37821	
	Khariar Road	11448	
	Kasinga	11133	
	Junagar	10193	
Koraput	Khariar	9946	
	Jeypur	53981	
	Sunabeda	40375	
	Rayagada	35838	
	Koraput	31665	
	Nabarangapur	19084	
	Gumupur	16712	
	Malkangiri	15575	
	Umarkote	14309	

	Chandili	12487
	Kotpad	11604
	Falimdanga	9454
	Chitakonda	7756
	Parapahandi	6424
	Gudari	5698
Ganjam	Brahmapur	162550
	Parlakhemundi	32317
	Asika	16394
	Bhanjanagar	15324
	Chhatrapur	14150
	Hinjili	13761
	Polasara	13039
	Kavisuryanagar	11870
	Surada	11269
	Purusottampur	10739
	Kashinagra	11870
	Baguda	8703
	Kodala	8537
	Khalikote	8340
	Rambha	8196
	Chikiti	8177
	Bellagunta	7915
	Digapahandi	7853
	Ganjam	7550
	Gopalpur	4503
Puri	Bhubaneswar	219211
	Puri	100942
	Jatani	4175
	Khordha	22386
	Banapur	12003
	Nimapada	11406
	Pipili	8739
	Kantilo	7877
	Nayanagar	7760

Source: District Census Handbooks and Town Directory, Census of India 1981

TABLE 2.21: ORISSA INDICES OF URBANISATION, 1981

DISTRICTS	URB1	URB2	URB3
SAMBALPUR	0.18336	1216.64	61327.95
SUNDARGAR	0.44084	18273.79	1327641.94
KENDUJHAR	0.12786	753.91	300000.65
MAYURBHANJ	0.06071	1276.98	36685.23
BALESHWAR	0.00900	127.46	48290.16
CUTTACK	0.11462	2238.91	2055906
DHENKANAL	0.08479	1116.55	19823.83
PHULBANI	0.05550	755.83	14332.06
BELANGIR	0.09850	1092.01	70582.79
KALAHANDI	0.06399	999.27	44200.58
KORAPUT	0.12753	852.43	157905.55
GANJAM	0.16614	1380.22	19214.14
PURI	0.18966	1142.73	1275724.41

Source: URB1 and URB2 compiled from Table 2.1
 URB3 compiled from Table 2.2

TABLE 2.22: ORISSA DATA ON WORKFORCE (MALE, FEMALE & MALE CHILD)

DISTRICTS	WORKFORCE PARTICIPATION RATES (%)		MALE CHILD (AGE GROUP 0 - 14)		
	MALE (WPRM)	FEMALE (WPRF)	WORKERS	POPN	WK PARTCN RT (WPRCH)
SAMBALPUR	59.3	27.6	35610	429573	8.3
SUNDARGAR	54.9	21.9	17817	270207	6.6
KENDUJHAR	55.9	22.4	12854	223324	5.8
MAYURBHANJ	57.6	37.8	26665	311887	8.5
BALESHWAR	51.3	6.2	17220	467746	3.7
CUTTACK	51.7	6.1	28724	904495	3.2
DHENKANAL	55.5	16.9	22674	323876	7.0
PHULBANI	61.2	33.8	15315	138736	11.0
BELANGIR	60.0	22.1	31205	284050	11.0
KALAHANDI	61.6	22.4	43893	274056	16.0
KORAPUT	61.0	34.2	63601	491820	12.9
GANJAM	53.9	30.6	44944	553093	8.1
PURI	53.8	7.2	27304	566559	4.8

Source: Primary Census Abstract for WPRM and WPRF and General Economic Tables for WPRCH
Census of India, Orissa Series, 1981.

TABLE 2.23: ORISSA DATA ON MAIN MALE WORKERS SECTORWISE

DISTRICTS	CULTIVATORS	AGRI LAB	AGRI HUNTG FORSTRY FISHG	MINING QUARRYING	MANUFAC REPAIR	ELECTRICITY GAS WATER	CONSTRUCTION	WHOLESALE & RETAIL TRADE	TRANSPT COMM STORAGE	FIN. INSUR. REAL ESTATE	COMM SOCIAL PERS SERVICES	TOTAL MALE POPULATION
SAMBALPUR	318631	167620	12329	9538	64173	3297	6275	24217	13590	3046	46920	1156469
SUNDARGAR	147735	52988	5788	9081	70740	2403	7714	18329	1524	1925	35249	692749
KENDUJHAR	165148	54945	7099	13713	16120	1145	4685	8391	4985	1319	21795	526157
MAYURBHANJ	235474	112303	1006	1641	27689	1369	2841	11510	4449	1471	31774	795364
BALESHWAR	321256	131724	14351	197	22789	2527	3887	19742	9830	2488	42002	1139355
CUTTACK	565306	253670	26628	3995	98718	7538	9350	61443	30004	8305	126515	2346690
DHENKANAL	214643	102893	13868	9001	26736	4934	11066	13082	4944	1624	33618	808450
PHULBANI	123892	49227	5869	71	9172	526	2247	5879	156	553	14352	358862
BELANGIR	254434	110993	8745	516	22852	1517	1814	9516	4493	1654	13675	732438
KALAHANDI	226362	122554	5050	46	13241	1045	3967	7628	2893	1012	17824	666163
KORAPUT	451952	158339	15588	518	27757	3250	13304	22771	8449	1779	46619	1246378
GANJAM	323568	159145	25879	4028	44356	3605	6492	40891	12093	3593	58380	1314520
PURI	371608	162855	32936	2150	44685	5372	10516	41373	19800	6243	88408	1490211

Source: Census of India, Orissa Series, 1981, General Economic Tables.

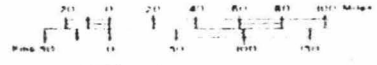
TABLE 2.24: ORISSA DATA ON MALE WORK PARTICIPATION SECTORWISE

DISTRICTS	MALE WORK PARTICIPATION RATES (IN PERCENTAGES)		
	PRIMARY	SECONDARY	TERTIARY
	(WPRMP)	(WPRMS)	(WPRMT)
SAMBALPUR	43.94	6.38	7.59
SUNDARGAR	31.12	11.67	8.23
KENDUJHAR	45.79	4.17	6.94
MAYURBHANJ	44.06	4.01	6.19
BALESHWAR	41.03	2.56	6.50
CUTTACK	36.20	4.93	9.64
DHENKANAL	42.11	5.29	6.59
PHULBANI	49.90	3.33	5.84
BELANGIR	51.16	3.57	4.01
KALAHANDI	53.14	2.74	4.41
KORAPUT	50.26	3.56	6.39
GANJAM	39.00	4.14	8.74
PURI	38.22	4.06	10.46

Source: Compiled from Table 2.5

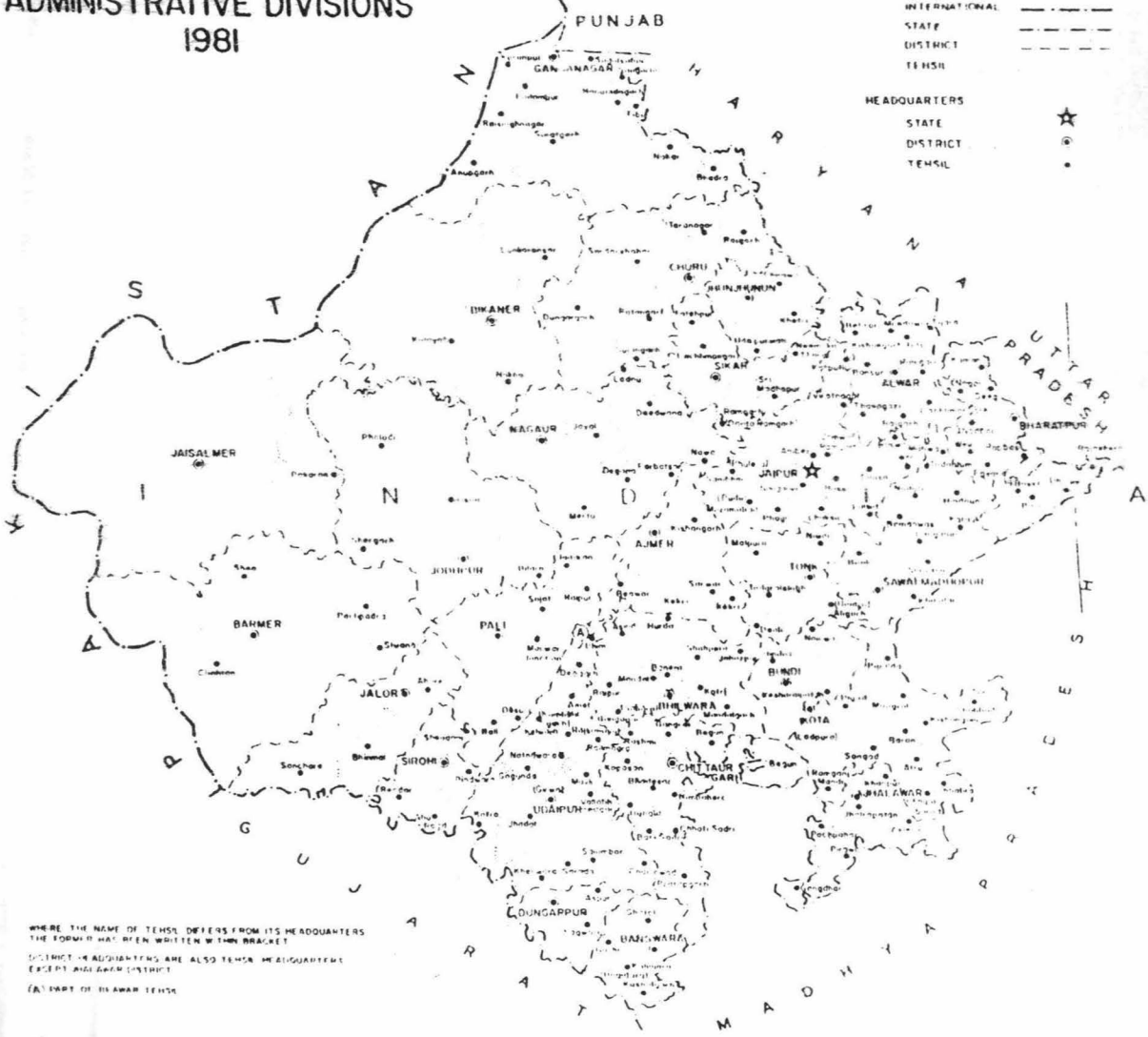
MAP 1

RAJASTHAN ADMINISTRATIVE DIVISIONS 1981



BOUNDARIES	
INTERNATIONAL	---
STATE	-----
DISTRICT	- - - - -
TENSIL

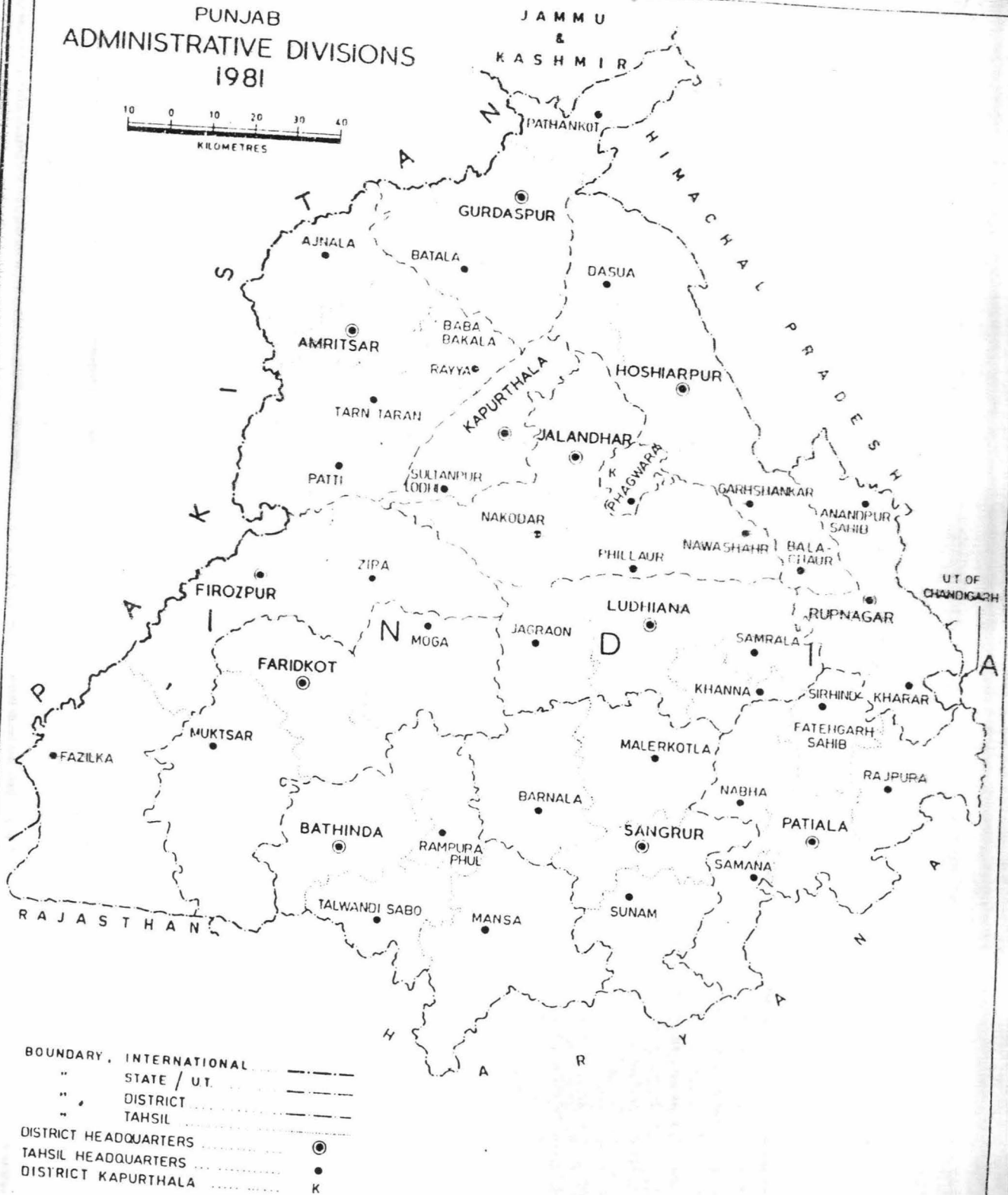
HEADQUARTERS	
STATE	★
DISTRICT	◎
TENSIL	•



WHERE THE NAME OF TENSIL DIFFERS FROM ITS HEADQUARTERS THE FORMER HAS BEEN WRITTEN WITHIN BRACKET.
 DISTRICT HEADQUARTERS ARE ALSO TENSIL HEADQUARTERS EXCEPT ANILKANT DISTRICT.
 (A) PART OF BIKANER TENSIL

70° East of Greenwich 72° 74° 76° 78°

PUNJAB
ADMINISTRATIVE DIVISIONS
1981

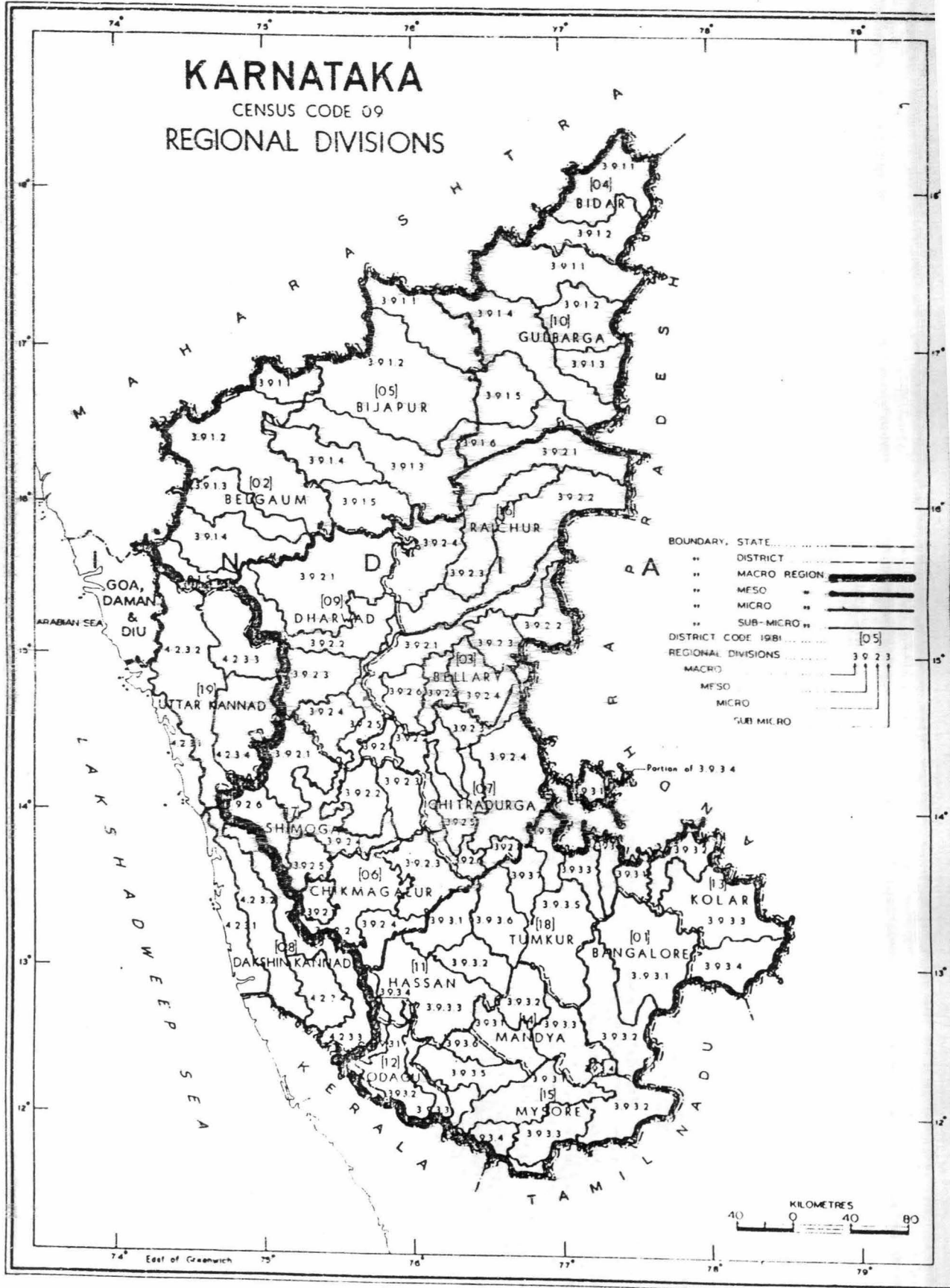


BOUNDARY, INTERNATIONAL ———
 " STATE / U.T. ———
 " DISTRICT ———
 " TAHSIL ———
 DISTRICT HEADQUARTERS ●
 TAHSIL HEADQUARTERS ●
 DISTRICT KAPURTHALA K

Note 1 District headquarters are also tahsil headquarters
 2 The administrative headquarters of Chandigarh, Haryana and Punjab are at Chandigarh

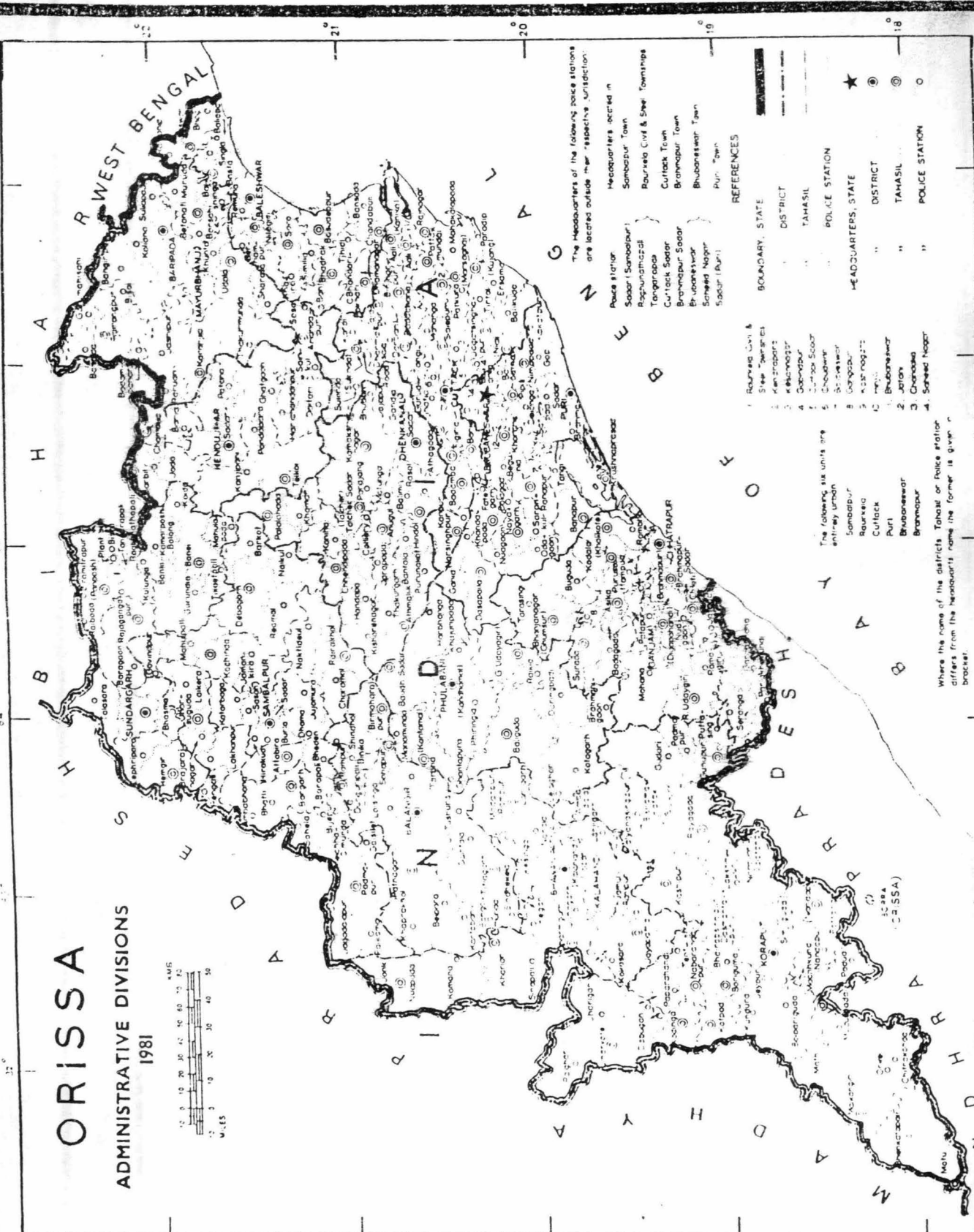
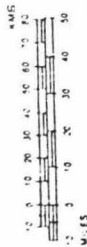
KARNATAKA

CENSUS CODE 09
REGIONAL DIVISIONS



ORISSA

ADMINISTRATIVE DIVISIONS 1981



The Headquarters of the following police stations are located outside their respective jurisdiction:

- | | |
|-------------------|-------------------------------|
| Police Station | Headquarters located in |
| Sagar (Sambalpur) | Sambalpur Town |
| Rajnandimal | Rajnandimal |
| Tongarpada | Rajnandimal & Sagar Townships |
| Cuttack Sadar | Cuttack Town |
| Bhubaneswar Sadar | Bhubaneswar Town |
| Sagar (Puri) | Puri Town |

REFERENCES

- 1. Boundaries & State Statistics
- 2. Headquarter
- 3. District
- 4. District
- 5. District
- 6. District
- 7. District
- 8. District
- 9. District
- 10. District
- 11. District
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- 42. District
- 43. District
- 44. District
- 45. District
- 46. District
- 47. District
- 48. District
- 49. District
- 50. District

The following six units are army units:

- 1. Sambalpur
- 2. Rajnandimal
- 3. Cuttack
- 4. Puri
- 5. Bhubaneswar
- 6. Brahmapur

Where the name of the districts Tahasil or Police station differs from the headquarters name the former is given in bracket.

CHAPTER 3

CHARACTERISTICS OF URBANISATION

In this chapter we intend to take a closer look at the indicators of urbanisation calculated for each of the districts in the selected four States of our study. The indicators have been elaborately discussed and the data and calculations have been presented in chapter 2. From these calculations, we would locate for each State, the district(s) with the highest degree of urbanisation and try to understand the patterns of urbanisation of these districts, suggesting factors that might have led to such a pattern. We also take a look at the Town Directory and the District Census Handbooks to substantiate our conclusions.

RAJASTHAN:

Indicators of Urbanisation:

In Rajasthan the highest proportion of urban to rural population comes from the district of Ajmer (0.74), followed by Bikaner (0.65) (see table 2.3, chapter 2). The next highest figure comes from Jaipur (0.53) and Kota (0.40) respectively. The two least urbanised districts in this State, according to this indicator of general urbanisation, are Barmer (0.09), and Dungarpur (0.06).

From the same table (table 2.3) we can rank the districts according to the next indicator of urbanisation, namely urban density. The highest on this scale is Ganganagar (3924.01), followed by Jodhpur (3124.16), Jaipur (2634.36), Dungarpur

(2565.47), Bharatpur (2413.45). The lowest are Jaisalmer (250.78) and Pali (375.06).

By our next indicator, namely the average size index, the highest index of urban accretion can be found in the district of Jodhpur (9227076.77) followed by Jaipur (8276608.92). Next highest but quite far behind are Ajmer (251368.09), Bikaner (29381.75) and Kota (263502.86). The lowest figure for this indicator comes from the district of Chittaurgarh (2607.47).

The above ranking brings forth certain interesting characteristics, which we shall pick out, and try to find an explanation by looking at Table 2.2 which gives us the list of all towns in each district of Rajasthan and their respective populations. Next, we shall see how our observations are borne out by the facts recorded in the Census (1981).

The most interesting feature is that Ajmer and Bikaner have the highest proportion of urban population among the districts, but in these two districts the incidence of crowding (urban density) and that of urban accretion (average size index) is relatively low. From Table 2.1 we find that the urban area in both these districts is on the higher side, compared to the urban population. This means that the high urban population is spread over a high area. In Ajmer there are as many as eight towns, ranging from class 1 to Class 5, but when arranged according to decreasing order of population the drop in population from one town to the other is gradual. In Bikaner we find only four towns, but one of them is an urban agglomeration encompassing a Class 1 city (Bikaner), and two small towns (Gangashahar and Bhinasar

of classes 3 and four respectively). The remaining towns belong to classes 3 and 4. Therefore the urban area is large and there is no discrepancy in town size. A very interesting feature which can be observed about the district of Dungarpur, is that it is the least urbanised in terms of the proportion of urban to rural population. At the same time it is among the more urbanised in terms of the indicator on urban crowding. From table 2.1 we see that the urban area in this district is very small. Table 2.2 tells us that there are only two towns called Dungarpur (class 3) and Sagwara (class 4). This speaks of an urban population, which though small, is crowded into only two small towns. We get a similar picture from the district of Banswara.

The district of Bharatpur shows a high degree of urbanisation in terms of the urban density indicator. This is indicative of the fact that in this district there is high urban crowding. Table 2.2 tells us that in this district there are a large number of towns (thirteen). All of them are small, belonging to classes 3 or 4, with the exception of Bharatpur city which is of size class 1. Now Table 2.1 shows us that the urban area of Bharatpur district is comparatively small. A small urban area housing as many as thirteen towns therefore shows a high urban density of population.

The district of Jaipur has a large urban population relative to rural population, but according to this indicator, the extent of urbanisation, though high, is not as high as that of some other districts (Bikaner and Ajmer). In terms of urban density, this is a highly urbanised district. According to the average

size index it is among the most urbanised districts in the State. These facts are suggestive of a high degree of urban accretion. This is corroborated by table 2.2 which shows us that this district has one class 1 city (namely Jaipur) towering over a large number of very small towns. There are no class 2 and class 3 towns. There are as many as ten class 4 towns and one class 5 town. Crowding is high in spite of large area since the number of towns is large.

In the district of Jodhpur the urban area is not very large. There are only four towns, three of which are small, belonging to category class 3, and only one very large class 1 city namely, Jodhpur. This explains the high incidence of urban crowding (urban density), and urban accretion (average size index).

The lowest figure for average size index comes from the district of Chittaurgarh suggesting a low degree of urban accretion, which is to say that towns are more or less of uniform size. Table 2.2 confirms this view. There are eight towns in this district all of which are small belonging to size classes 3 and 4.

Further Census Information:

Now we shall take a fresh look at the 1981 Census to see how far our above observations are corroborated by facts, and to what extent they can be explained for the above mentioned districts. The sources we now tap are the respective District Census Handbooks, and the Town Directory of Rajasthan .

In the district of Ajmer, by the end of December 1980, there were 1130 registered factories which provided employment to 23309

persons. Among the large scale industries of Ajmer City are Carriage and Wagon Workshop, Locomotive Central Workshop, Machine tools Corporation of India Ltd., Central Workshop of Rajasthan State Roadways Transport Corporation, Electric Repair Workshop and Power House, Western Railway Ticket Printing Press which alone provided employment to 8629 persons in the year 1980. Of these, the first two are railway establishments. The Central Locomotive Shop was the first in the country for manufacturing locomotives. Regarding the cotton mills in the district, the Krishna Mills Ltd located at Beawar provides employment to as many as 1174 persons (in 1980). The two other large cotton mills at Beawar are the Edward Mills Ltd., and the Mahalaxmi mills Ltd.

The other registered factories in this district are concerned with cotton ginning, spinning, cleaning and weaving, weaving of cotton textiles by powerlooms, oil mills, sawing, printing and publishing, wool cleaning, thread and thread ball making, manufacture of structural stone goods, stone crushing and dressing, manufacture of Humepipes and other cement products

The main small scale and cottage industries of this district are cotton ginning and bailing, wool and cotton pressing, spinning and weaving and manufacturing of bidi and gota, shoe and toy making, dying and printing, pottery and lac bangle making carpentry, blacksmithy, goldsmithy etc. Most of the wool cleaning factories are centralised around Beawar because it is an important mandi for wool trade.

The district abounds in mineral wealth. There is sufficient scope for industries to be established in this district. The

district has efficient communications and is connected by rail and road to important centres of the country. Labour is available in plenty. there is an employment exchange located in Ajmer city.

All this shows that urbanisation in this district has followed a healthy trend. It has a highly diversified industrial base ranging from heavy industrial products to village industries. Many of these industries have rural linkages. Urban growth has taken place along industries of all sizes that have provided employment to a wide section of the district population.

The District Census Handbook on Ajmer also discusses trade and commerce in the district. "In ancient times Ajmer was the entrepot for all trade between Bombay and Upper India. The transit trade of the district was formerly carried on by camels and banjara bullocks. It is now mostly rail borne and done by motor trucks. There is still a certain part of goods transported by bullock carts in the interior of the district. With the coming of the railways the trade in the district increased." There are many marketing centres in the district. Certain villages have well developed local markets. This again shows us that urbanisation has followed a healthy pace by gradual strengthening of rural linkages as can be seen by the gradual development of the modes of transit of trade. The figure for average size index is lower because in this district urban growth has taken place on a broad base of small towns, which in turn have rural bases. There is no incidence of one or two colossal towns growing side by side with emaciating small towns.

The District Census Handbook of Jodhpur give us the

following information on industry, labour, trade and commerce in the district:

"Jodhpur district has been declared an industrially backward area by the Government of India. The largest in the district is the Northern Railway Workshop. The other large registered factories are the Alcobex Metals Pvt Ltd., Jodhpur Woollen Mills, Pashchim Rajasthan Dugdh Utpadak Sahakari Sangh Ltd., and Heera Crushing Pvt Ltd. The other registered factories worth mentioning in this district mainly concern various types of edible oils, cotton textiles, spinning weaving and finishing of other textiles, synthetic fibres, rayons, nylons etc., sawing and planing of wood, manufacturing of sizing materials, dyeing of cloth and yarn, printing, publishing and allied activities etc."

There are many small scale industries, for example tie and dye, embroidered shoes, bangles and toys. There are also many village industries like skin hides and blacksmithy. Khadi Gramodyog provides employment to village folk in the production of cotton and woollen Khadi.

Jodhpur city is the main trading centre in the district. It has an old Dhan Mandi situated in the heart of the city. A new Mandi has also been constructed. The principle commodities brought to this mandi are wheat, barley, jowar, and other cereals and spices from all over the district and from other districts for example Jalor, Jaisalmer, Barmer, Nagaur. Besides betelnut is brought from Bombay and Assam, copra from Kerala and Tamilnadu and various goods from various parts of the country. Bilara and Pipar, the other towns of this district, have regulated markets

which are mainly connected with the Jodhpur mandi

Our calculations have shown that the incidence of urban crowding and urban accretion are high. To illustrate this we can use further Census information telling us that "out of 10 cinema houses functioning in the district, 7 are running in the city of Jodhpur, and one each at Phalodhi, Bilara, and Pipar".

It happens that in this district urban accretion and urban crowding has not occurred as a result of any wide-based employment generating , or forward linkage stimulating large industry. Disproportionate growth of Jodhpur city, and resultant urban crowding has occurred largely around large scale trading and marketing in this city. The smaller towns might have developed around some insignificantly small industry. They also have markets, but these markets have links with the main markets at Jodhpur. It is common knowledge that Jodhpur is the traditional home for most families belonging to the Marwari business community.

The District Census Handbook of Bikaner offers the following information. "The district of Bikaner has not yet come up on the industrial map of the State perhaps because of lack of infrastructure required for industrial growth. Large-scale industry is almost non existent. However there is a spurt of small scale industries due to intensive efforts made by the Rural Industrial Scheme. Many of the small scale and medium scale industries have come up in the vicinity of Bikaner city. J.J.Woollen Mills are prominent among them. Wool is the main raw material available in rich quality in the district. The annual

production of wool is in thousand quintals. The yield of milk from cattle in this district is fairly good and sweets produced from it are being exported in large quantities outside the district."

"In this district urbanisation is fair, but not top-heavy or disproportionate. There is very little urban crowding. As in the district of Ajmer urbanisation in this district seems to have occurred along a healthy path. The growth of cities is based on a host of medium and small scale industries that have linkages (in terms of labour and raw materials) with the rural hinterland."

The district of Jaipur, according to the District Census Handbook, is the leading industrial district in the State. This is mainly due to the location of Jaipur being the capital city as also its convenient approach by rail and road from all important trade centres of the State and the country.

Among the large scale industries in the district are National Spinning and Weaving Industries, Sambhar Salts, etc. The main small and cottage industries of the district relate to manufactures of printed textiles, marble statues, precious stone cutting, brass and lacquer works wool carpets, spinning and weaving on handlooms, etc.

To avoid unhealthy competition amongst the farmers and exploitation by the middle men and other agencies efforts have been made to establish "Krishi Upaj Mandies" at the important trading centres. These are located mainly in Jaipur and other towns. There is no market in the rural areas except for a few

shops in the villages.

By our calculations there is evidence of urban accretion in the district. This is because of heavy industry in and around the city of Jaipur. Engineering and Electrical industries are less likely to have a rural base. The other small towns have evolved around a host of handicraft industries, that may not essentially have a rural base. Again, another purpose served by these towns that might have led to top heavy urban growth and crowding, are to act as trading centres. As we have seen there is no regular market in the rural areas except for a few shops in the villages. From the District Census Handbook we find that there are many urban facilities around which further urbanisation might have occurred which is a characteristic feature of urban accretion.

PUNJAB:

Indicators of Urbanisation:

In the State of Punjab, the highest figures for the ratio of urban to rural population come from the district of Ludhiana (0.72), followed by Jalandhar (0.62), Amritsar (0.49), Kapurthala (0.42) and Patiala (0.42) respectively.

The indicator on urban crowding gives us a slightly different ranking of the districts. According to this indicator the most urbanised district, the district that shows the highest urban crowding is Gurdaspur followed by Ludhiana, Kapurthala, Amritsar and Jalandhar respectively.

The average size index by which we can rank the districts

according to the degree of top-heavy, disproportionate urbanisation gives us the following ranking of the districts of Punjab. The highest urban accretion is in Amritsar, followed by Ludhiana, Jalandhar and Patiala.

Let us try to explain the above rankings by whatever figures we have and by the results of our own calculations. We shall then proceed to cross-check our explanations by whatever further information we can get from the Census Town Directories and the respective District Census Handbooks. Among all the three sets of rankings the most noteworthy feature is the district of Ludhiana which ranks first or second by all indicators of urbanisation. Table 2.7 tells us that though the urban area is high, the urban population is also proportionately high, to the extent of causing urban crowding. Table 2.8 tells us that in the district of Ludhiana there are as many as 10 towns. The town of Ludhiana is very large. It towers over 9 other much smaller towns. This accounts for the high figure of average size index suggesting urban accretion and also high urban density suggesting high urban crowding.

Amritsar ranks third in urbanisation by the indicator of proportion of urban population, fourth by the indicator of urban density but first by the indicator of average size index. This suggests that most of the high urban population of the district crowds into a few large towns. It may also mean that the number of towns is small. Let us look at table 2.8. This table confirms our observation. Here we see that in this district there is one colossal town which is Amritsar (municipal corporation) that

towers over nine very small towns ranging from classes 3 to 6. By Table 2.7 the urban area in this district is large but the urban population is proportionately large, leading to high urban crowding.

Among the other more urbanised districts in Punjab, Jalandhar ranks high in terms of proportion of urban to rural population but lower in terms of urban density and average size index. This is suggestive of a healthy trend of urbanisation where though the urban population is high it is evenly spread over a high area and no one town has grown disproportionately at the expense of smaller impoverished towns. This observation of ours is slightly contradicted by Table 2.8 where we see that a high urban population is indeed spread over covering as many as sixteen towns, there is in fact one very large city, namely Jalandhar which does tower over smaller towns which range from size class 3 to class 4. We shall find an explanation from the District Census Handbook.

The district of Kapurthala ranks high in urbanisation by the indicators of proportional urban population and urban density but does not feature at all by the indicator of average size index. Table 2.7 tells us that the urban area of the district is the smallest in the State. The urban population is the smallest and the rural population is the smallest too. In fact this district is the least populated among all the other districts in the State. In spite of this, from Table 2.8 we find that this district has as many as 8 towns all of which are small.

The district of Patiala deserves mention among the more

urbanised districts in the State. This is so by the indicator of proportional urban population to rural population and the average size index, but not so by urban density. By Table 2.8 there are as many as 13 towns, all of which are small excepting Patiala city which towers over the rest of the towns. This tells us that the urban population is high, the urban area is big and there is one very big town among as many as 12 small towns.

Further Census Information:

From the Town Directory we gather the following information about the district of Ludhiana. The city of Ludhiana seems to have grown around heavy industry, generating high urban population and resultant urban crowding. Statement 6 which is a table on trade, commerce, industry and banking tells us that in Ludhiana city the main industries are bicycles, sewing machines, hosiery goods and auto spares. None of these industries is likely to have a rural or agricultural base. All the other towns in this district are much smaller and seem to have grown around small rural based industries. For example, the main industry in the towns of Khanna, Jagraon, Raikot, Payal, and Hatur, are agricultural implements, cotton yarn, jam, pickles and sauce, groundnut, vegetables, gur, fuelwood etc. Therefore urbanisation seems to have been rural based except for the city of Ludhiana which seems to tilt the whole urban balance towards urban accretion, by virtue of its sheer size.

We now come to the district of Amritsar. A look at the Town Directory and the District Census Handbook tells us why the district ranks lower in terms of proportion of urban to rural

population. This district is both industrially and agriculturally very prosperous. To quote the District Census Handbook : "On the agricultural front the district has earned quite a distinction. There are three regulated markets of the district. "

The urban centres here seem to have developed not only around urban industry but also around trade and commerce, and places of religious and historical importance. This accounts for high urban crowding. The Town Directory tells us that the main industries in Amritsar are woollen and silken textiles, machine parts and pharmaceutical goods. Industries in the smaller towns are not very dissimilar in nature but seem to be very much smaller in size. For example, industries in Tarn Taran, Chola Shahib, Patti and Ramdas, are agricultural implements, cotton cloth, cycle tires, hand woven cloth, and cotton ginning machines. But the District Census Handbook at the same time tells us that the main industrial units are located at Amritsar, Chhehatra, Verka and Govindwal. In this context none of the small towns of the district are mentioned. This has prompted us to draw the above conclusion.

The main reason for the disproportionate growth of Amritsar town is its great importance as a Trading centre. To quote the District Census Handbook, "Amritsar stand head and shoulders above the other towns as a centre for trade and commerce. The town serves as the main trading centre for green tea, dry fruits, textiles, woollen cloth, etc, even though the town has suffered after Partition. The town monopolises all trade with Afghanistan and Pakistan. The transport facilities have been so developed

that perishable commodities like vegetables and milk products can be marketed." In this district we see that though urban accretion has occurred for its own reasons, it has certainly not occurred as a result of impoverishment of the rural hinterland.

The district of Patiala according to the District Census Handbook is surplus in agricultural produce and there are good markets in Patiala. "Patiala is predominantly agricultural but is catching up in industries now". All towns seem to have developed around heavy and light industries. The most important industry in Patiala district is the Milkfood Ltd in Patiala city. The Goetz India Ltd is an important factory that manufactures auto spares and rings. The government of India with the collaboration of the Punjab government is establishing a diesel component workshop at the northern fringe of Patiala City.

The industries in Jalandhar city are agricultural implements, twine, pipe fitting hand tools, rubber goods, iron bars rubber goods, iron bars and sports goods. The industries in the other towns, eg., Lohian, Adampur etc are khadi cloth, furniture, agricultural implements etc. The District Census Handbook tells us that this district is agro-based. agriculture is commercialised there are important grain and vegetable markets. There are many industries on sports goods and repairs. In the city of Jalandhar, there is tremendous progress in educational facilities. This explains the kind of urban accretion that we see from our data and our calculations.

The district of Kapurthala, according to the District Census Handbook, is conducive for industrial development.

Infrastructure, especially in terms of railway connections and cheap electricity are good. many industries have developed like cotton mills, iron and steel rolling mills, sugar mills, glass factories and auto spare parts, especially in and around the cities of Kapurthala and Phagwara.

KARNATAKA:

Indicators of Urbanisation:

In the State of Karnataka all our indicators show the district of Bangalore to be by far the most urbanised. By the indicator of ratio of urban to rural population, the next in rank are Dharwad and Bellary. By the indicator of urban density the district of Chitradurga and Mysore feature among the more urbanised. By the average size index Belguam features after Bangalore.

In Bangalore district the city population is very high. This is the only district whose urban population is higher than its rural population. There are as many as 27 cities. All of them are much smaller than Bangalore City. There seem to be quite a few industrial towns. Urban accretion is very high.

The district of Darwad has a large number of cities , as many as 22, some of which are quite large though none of them are inordinately larger than the others. The district of Bellary has a small number of towns and all of them are large. The rural population is small. The district of Mysore has a smaller number of large towns. The urban area is large, but the urban population

is also very high:

Further Census Information:

According to the Town Directory of the Census, Bangalore district is the most highly urbanised district in the State. Bangalore city which dominates the industrial map of the State (the main industrial activities being cotton, silk and woollen fabrics, iron goods, electrical equipment and incense sticks that are world famous), also happens to be the centre of trade and commerce, transport and administration, being the State capital. Besides, a number of industrial townships have come up contiguous to the city. This district has, in addition, a few medium sized towns known for industrial and commercial activities.

Next to Bangalore, the most highly urbanised district is Dharwar. The Hubli-Dharwar Corporate area happens to be very important commercial educational and industrial centre in the North Karnataka region.

Third in rank comes Bellary. Bellary city and Hospet are the two important urban areas of the district, as industrial complexes that have developed around the Vijaynagara Steel Plant located in between them.

The urban population of Mysore is well above the State average. Its urban population must have grown around industries which manufacture traditional products of international fame, i.e., incense sticks, handloom and powerloom fabrics, soaps and sandal oil.

The urban proportion in the 14 other districts is below the average for the State. The districts of Shimoga, Bijapur, Belgaum

(which shows high urban accretion because of the huge town of Belgaum that has developed around industries manufacturing cotton textiles, hosiery goods, machine tools and machine spare parts, brass utensils), Dakshin Kannad, Chitradugra and Kolar (known for the Kolar Gold Fields, now a public sector industry (Bharat Gold Mines Ltd) may be regarded as moderately urbanised. The least urbanised district in the State is Tumkur.

ORISSA:

Indicators of Urbanisation:

In Orissa the proportion of urban to the rural population is the highest in the district of Sundargarh (0.4408) as we can see from Table 2.21. The next highest figure for this indicator comes from the district of Puri (0.1897) followed by Sambalpur (0.1833), Ganjam (0.1661). The figure for Cuttack is only 0.1146.

The figure for the next indicator, Urban Density, is the highest for the district of Sundargarh (18273.79 persons per square kilometer). The next highest is from the district of Cuttack, which compared to Sundargarh is only 2238.91. Close behind come Ganjam (1380.22), Mayurbhanj (1276.98) and Baleswar (1274.59). Puri is also comparatively high by this indicator (1142.73).

The figures for the third indicator, namely, the average size index, are highest for the districts of Sundargarh (1327641.94) and Cuttack (2055906). It is also high for the district of Koraput and Puri. It is surprisingly low for the

district of Ganjam considering that this district has the highest number of towns in the entire State.

In the overall sense it appears that Sundargarh is the most urbanised district in the State. Cuttack, Puri and Ganjam are more urbanised compared to the other districts.

One may wonder why the district of Cuttack which shows high figures for average size index and urban density should show a lower figure for the first indicator, namely, the proportion of urban to rural population. From Table 2.19 we find that the absolute figure for the urban population is indeed the highest figure for this district, but at the same time, the absolute figure for the rural population for this district is also the highest. Therefore this district must be the most populous within the State. This fact is corroborated by the total population for each district. Here we find that among all the districts of Orissa, Cuttack has the highest population.

Another peculiarity appears to be the district of Ganjam, which shows high figures for the first two indicators (proportion of urban to rural population, and urban density), but a comparatively lower figure for the average size index. This phenomenon can be interpreted from Table 2.20 which lists the towns in each district with their respective populations. While it is true that the district has the highest number of towns and a comparatively high urban population, this urban population seems to be evenly spread over the towns, which is to say that, if the towns were arranged by decreasing order of population the drop in population from one town to the next, would be gradual,

rather than sharp. This is exactly what we can see from Table 2.20. There is no incidence of coexistence of a few inordinately large and populous towns along with sparsely populated small towns.

Further Census Information:

The Census Town Directory, 1981 states that "the degree of urbanisation in the State is very low when compared with other States of the country. Nine out of thirteen districts have a lower urbanisation than the State average. Only four districts have a higher than average urbanisation namely Sundargarh Puri Ganjam, and Cuttack. Sundargarh has retained its pride for having the highest degree of urbanisation in the State since 1961 (as against a very low level of urbanisation in 1951). This sudden spurt is due to the establishment of the Steel Township in Roulkela." Here we observe the essence of the phenomenon of a Public Sector investment creating a local spurt of industrial employment and urbanisation, leaving the surrounding area untouched - a characteristic feature of the phenomenon of "urban accretion" as described in chapter 1. From the same source we see that in the town of Roulkela, the most important commodities manufactured are iron sheets, iron plates, iron pipes, steel plates, steel pipes and chemical fertilizers. There are as many as 16 banks. At the same time agricultural credit societies in a town as big as Roulkela are conspicuous by their absence. This indicates that urban accretion in this town has been top-heavy and has had little effect on the rural hinterland.

The town of Cuttack, to some extent also shows a similar

trend of urban accretion, as we see from the last two indicators, namely urban density and average size index. They reflect the fact that in this district a large town has grown disproportionately with respect to other smaller towns and there is evidence of high urban crowding. This is corroborated by the fact that the main industries in the biggest town Cuttack are urban-based. The town directory tells us that the main commodities manufactured in Cuttack are clothes, steel pipes, filigree works, wood furniture, aluminum utensils, medicines, horn-works, iron ore, shoes, etc. The number of banks is 37, the number of non-agricultural credit societies is 97, whereas the number of agricultural societies is only 5. These features are all indicative of top-heavy, industrial employment based urban growth devoid of healthy rural linkages.

As we move down our ladder of urban growth along our urban indicators, after Sundargarh and Cuttack, we have to stop at Puri. The extent of disproportionate urban growth appears to be less. This is corroborated by the fact, mentioned in the Town Directory, that the main commodities exported and manufactured, are sea-prawn, coconut, stone statues, sea shell products and ayurvedic medicines. All these industries are rural-based, so here urbanisation seems to have occurred through healthy rural linkages. The number of banks is 13. The number of non agricultural societies is 9 and the number of agricultural societies is 3. The latter figure is not as less than the former as in the districts of Cuttack and Sundargarh.

Next, on our downward move along the ladder of urbanisation

we come to the district of Ganjam which has the highest number of towns. Though the proportion of urban population, and urban density are on the higher side, the average size index is comparatively low. This shows that the urban growth in this district, though high is not disproportionate. Theoretically, this should be indicative of a process of healthy urbanisation characterised by rural linkages. This is corroborated by the fact that most of the industrial products are village-based, for example, the town of Brahmapur produces limestone, dolomite, furniture, biscuits; Chhattarpur produces kewra water, fish, green coconut, cashew nut, wood furniture. These two are the largest towns in the district. Among the smaller towns of the district are Chikiti and Ganjam. Chikiti produces paddy, vegetables, canned fish and Ganjam produces sea-fish, sea-shells, coir ropes and coconuts. A noteworthy feature of this district is that among the many towns, a large number has been recognised as towns for the first time in the 1981 Census. The names of these towns are, Kashinagra, Kodala, Chikiti, Bellagunta, Digapahandi, and Ganjam.

CONCLUSION:

Urban growth in the districts analysed above has taken place in response to many kinds of stimuli. Industries, big or small, have acted as nuclei for urban growth. Centres for trade and commerce have grown into big or small cities. Also places located on important transport networks might have grown into cities, thus increasing the degree of urbanisation of a district.

Urban crowding has occurred either when a large urban population has crowded into a city or a limited area or when there have been many small towns in a district whose total urban area is small.

Unbalanced urban growth or urban accretion has occurred when a large town has developed around an economic activity with little or no linkage with the rest of the district. However, urban accretion has not necessarily been accompanied by impoverishment of the rural surroundings and other smaller towns of the district.

CHAPTER 4

CHARACTERISTICS OF WORK FORCE

In this chapter, we attempt to identify the salient characteristics of the work force in the four States of our analysis, namely Rajasthan, Punjab, Karnataka and Orissa. We shall also try to explore the factors that have led to these characteristics. At this juncture it is important to recapitulate how we quantify work force in our study. We use work force participation rate which in Census documents is defined as the proportion of workers in total population. In chapter 2, we have discussed the definition of workers and work at length.

We now glance through some of the factors that are likely to affect work force participation rate, as discussed in the existing literature. These factors sometimes affect the entire population and sometimes only parts of it.

Work force participation rates are highly sensitive to natural calamities, like famines, floods, epidemics, etc. Sen (1967), for instance, shows that between 1911 and 1921 the area under cultivation declined sharply in three States that were worst affected by the influenza epidemic, which affected mostly females in the working age group.

Work participation rates are likely to be affected by the creation of new and more remunerative jobs. People wanting to earn more money can do more work; but once they earn a certain amount, they may prefer leisure to work. Among the marginal groups the effect may be more clearly determined. With higher income, the children can stay longer in school. For females the

non-participation in economic activity is often treated as a mark of social status so that increasing income is likely to depress their participation rates.

The sex composition of the population is one of the prime factors that would influence work participation rates. Work participation of males is significantly higher than that of females in each decade of the Census and in each State. Man is the chief bread earner and social conventions require nearly universal participation of economic activity among all adult males. The economic role of females is subsidiary to their functions connected with child bearing and house keeping. The extent to which they are gainfully occupied depends both on cultural sanctions and availability of employment opportunities appropriate to their inclinations and attitudes. Work participation of females is therefore likely to show striking variations, both in time and space.

Urban or rural residence is another factor likely to affect work participation rates. Using 1961 Census data Sinha (1961) observes that all over India the work participation for rural population is 45 percent as against 34 percent for urban population. The rural-urban difference is narrower in case of males (ranging from 58 percent in rural areas to 54 percent in urban areas) than for females (ranging from 31 percent in rural areas to 11 percent in urban areas). Taking the figures State by State Sinha (1961) concludes that in rural areas the work participation rates for males and females are more or less similar across the country. But in urban areas the rates differ

across the States, the difference being more pronounced for females than for males. For urban females work participation rates in the southern States and Orissa are higher compared to that in the northern States.

Sinha (1961) using 1961 Census data finds an interesting relationship between the degree of urbanisation (as measured by size class of towns) and work force participation. All towns are classified into four sizes: those with population less than 50,000; between 50,000 and 1,00,000; between 1,00,000 and 5,00,000; and above 5,00,000. There is a declining trend in male work participation rate with increasing urbanisation which is reversed for the largest size class of towns. These towns with population of 5,00,000+ show highest work participation for males. This, according to Sinha (1961) may perhaps be due to a higher relative proportion of adults among them. In case of females, we observe a uniform tendency for the work participation rate to decline with the increasing degree of urbanisation. A complex set of factors could account for this observed inverse association between work participation and degree of urbanisation.

The more urbanised a certain region, the more specialised are the available jobs. These jobs require higher skills, training and human capital and also regular working hours. This makes it more difficult for women to work because most of them do not get the opportunity to acquire the necessary skills and training. Also women have to look after their home and families, and regular working hours of urban jobs reduces their flexibility

to shuttle daily between household and professional duties. Therefore, female work participation rate declines with increasing urbanisation.

For men, the job market acquires certain features with increasing degree of urbanisation. On the demand side, more and more skilled labour is demanded and vocational training is preferred. On the supply side, men in urban areas have acquired urban values, attitudes and dignity which makes them shun menial jobs and desire white collar jobs which are in limited supply. At the same time their vocational skills (as demanded by urban jobs) are low. All these result in lower male work participation rate with increased urbanisation. However, the picture is different in case of very large towns. A probable reason for this is that these towns have grown in size due to the influx of migrant labour who left their families in the villages. Therefore the majority of male population in these towns are adults who clearly have a much higher work participation rate. Moreover, migrants (with roots in the village) would have little stigma against low paid manual jobs. They would not be very choosy about the job they get and easily accept and adapt to unskilled jobs.

In fact the educational level attained by individuals is another important cultural factor likely to affect work force participation. Sinha (1961) uses 1961 Census data to show that work participation rates are highest among illiterates. The rates are low for those who are literate but have not completed schooling, possibly because low paid manual jobs are no longer acceptable to them. But for matriculates and above, the work

participation rate is again higher, possibly because they are willing and able to fill the white collar technical jobs. In this respect the same trend is observed for both males and females.

Now let us make some observations regarding female work participation rates. According to Ambannavar (1979), female activity rates form an U-shaped pattern in relation to economic development. In the early stages of development, scope for female employment narrows down as a result of the shrinkage of the agricultural sector and household industries. Growing employment opportunities in the modern sector accrue mostly to men. On the supply side, higher family incomes lessen the pressure on women to go out to work. The trend is reversed in the later stages when the growth of demand for labour in the modern sector rises faster than the rate of shrinkage of the traditional sector and women, particularly those with higher education, are motivated to work, by higher wages.

Urbanisation has largely been responsible for reduction in crude female work participation rate. In rural areas household industries account for nearly all activities. These are combined mostly with family enterprises where women continue to work with child care and household chores. Urban activities are usually conducted in large scale enterprises where employment requires some education and daily travel away from home for regular hours. This causes traumatic conflict with child-bearing, child rearing, and housework.

In India housework is not mechanised and child care is not institutionalised. Social conventions governing women's contact

with men prompt husbands to discourage their wives from taking up employment. According to Gulati (1975) most agricultural operations are simple and do not require any skills or training. Wages paid to females in agriculture, are lower than those paid to men. Therefore it is profitable for employers to employ more women than men.

Structural changes in employment failed to accompany urbanisation. The growth of the modern sector in the towns was a death blow to rural household industries. Industry shifted from rural to urban areas. These changes were unfavourable to women's work participation rate.

Mechanisation of food grain processing increased work participation rate for males but decreased that for females. With increased pressure of population on land men encroached on some of the activities that were traditionally performed by women. Employment in electricity, gas and water supply sectors have grown with urbanisation. In these sectors men always have more scope than women.

Female employment in traditionally low paid manual services decreased with urbanisation. Laundry, hairdressing, etc, were becoming mechanised. The religious element in festivities declined as the village community disintegrated. In trade and commerce women's participation declined sharply with the virtual disappearance of rural weekly village fairs. Sanitation became mechanised and reduced the demand for sweepers. Construction jobs with their intrinsic bias against women, were on the increase.

Gulati (1975) uses 1971 Census data to test the hypothesis

that the male work participation rate may have an impact on the female work participation rate. The relevant correlations are all statistically insignificant. Therefore, it can be concluded that male and female work participation rates are not correlated with each other.

Having discussed some of the general issues regarding male and female work force participation rates in India, as they appear in the existing literature, we now take each of the four States of our study and look at the district level profile of work force participation rates for men and women. Three clarifications need to be made at this point.

First, the main focus of our study is the interrelation between work force and urbanisation. We shall discuss this in detail in the next chapter as the main thrust of our analysis. In this chapter we shall not discuss urbanisation as a factor influencing work force participation. Here we shall focus on other determinants of the characteristics of work force.

Secondly, although Census data are available on various levels of educational attainment, the limited scope and time of this study make us unable to discuss and analyse them in detail. For the present, we shall divide our population only into two groups: literate and illiterate.

Third, data on income or GDP are not easily available at the district level. Therefore we are constrained from analysing income as a determinant of work force characteristics, although we recognise its importance.

In the discussion that follows for each of the four States,

we first rank the districts according to work force participation rates. We then explore the factors that might have led to such a ranking, trying as far as possible to substantiate our statements from available Census data at the district level. We also explore the profile of the districts as given in the District Census Handbooks with the objective of finding some intrinsic characteristic of the district (historic, social, cultural, economic, climatic or geographical), that might have had an influence on the characteristics of its work force.

RAJASTHAN

Ranking:

As we look at the district profile of work force participation rates as obtained from the Primary Census Abstract (series 18) 1981 (see table 2.4, chapter 2), the first thing that strikes us is that the work participation rates for males vary across districts only marginally as compared to that for females. This corroborates the literature suggesting that forces that compel men to work are not very sensitive to extraneous factors which tend to affect work participation rates of females. This means that irrespective of the district level differences in sex-ratio, education, urbanisation and other such factors, man has to work as the bread earner of the family.

To the extent that male work participation rates vary, though within a narrow range, one can rank the districts as follows. Bhilwara shows the highest male work participation rate (57.7 percent) followed by Chittaurgarh (57.5 percent) and

Jaisalmer (56.2 percent). The lowest figure come from Jaipur and Alwar (both 48.1 percent).

Female work participation rates vary more widely. The district of Dungarpur shows the highest female work participation rate (38.1 percent) and the district of Ganganagar shows the lowest (10 percent).

We shall now analyse the districts highlighted above and try to see how some of their features might have been instrumental in placing them in our rankings as mentioned above.

Sex Ratio:

As already noted, social and economic forces compel a man to work as bread earner of the family. But women are never quite treated as bread winners and their earnings are regarded as supplementary. Therefore social, cultural and climatic obstacles could work as major deterrents to women's motivation to work. Consequently, lower the sex ratio of a district, the higher the number of males and hence the higher would be the male work participation rate and lower would be the female work participation rate.

Table 4.1: Sex Ratio in Rajasthan, 1981

Area	No of females per 1000 males
Ganganagar	874
Alwar	892
Jaipur	894
Jaisalmer	811
Bhilwara	942
Chittaurgarh	955
Dungarpur	1045
Rajasthan (State Average)	919

Source: District Census Handbooks, Rajasthan, 1981

Compared to the State average, Dungarpur has a higher sex ratio which partially explains why the female work participation rate is high. The low female work participation rate in Ganganagar may also be a reflection of the very low sex ratio compared to the State average. Thus our hypothesis regarding female work participation rate is confirmed from available evidence.

Alwar and Jaipur have low male work participation rates, but their sex ratios are also lower than the State average. Likewise, Bhilwara and Chittaurgarh have higher sex ratios but also higher male work participation rate. In both cases our hypothesis regarding male work participation rate is contradicted. However, for Jaisalmer we observe a low sex ratio along with male work participation rate being on the higher side as hypothesised.

We are tempted to conclude that sex ratio has an unambiguous effect on female work participation rates but not on male work participation rates.

Literacy:

It is our contention that the illiterate population is more amenable to agricultural jobs, even if the jobs are manual. Agriculture is the primary sector of our country and dominates the rural scenario. Hence lower the literacy, the higher the work participation rates are likely to be both for men and women. This should be true particularly with respect to rural literacy.

From table 4.2 we notice that the three districts Bhilwara, Chittaurgarh and Jaisalmer which have the highest male work

participation rates are characterised by overall and rural literacy rates which are lower than the State average. This is perfectly in line with our hypothesis outlined above.

Table 4.2: Male Literacy (Percent) in Rajasthan, 1981

	Overall	Rural
Bhilwara	29.70	25.06
Chittaurgarh	33.91	28.86
Jaisalmer	24.35	17.93
Alwar	40.05	36.44
Jaipur	44.11	33.47
Rajasthan (State average)	36.30	29.65

Source: Primary Census Abstract, Rajasthan, 1981.

Likewise, table 4.3 shows less than average female literacy rates for Dungarpur district with the highest female work participation and more than average female literacy rates for Ganganagar with lowest female work participation, thus confirming our hypothesis once again.

Table 4.3: Female Literacy (Percent) in Rajasthan, 1981

	Overall	Rural
Dungarpur	7.97	5.68
Ganganagar	14.16	8.68
Rajasthan (State average)	11.42	5.46

Source: Primary Census Abstract, Rajasthan, 1981.

Sector Size:

In each district the primary sector (agriculture) employs the highest proportion of the work force, followed by the tertiary sector (services) while the secondary sector (industry)

has the lowest share. A district with a larger primary sector, we believe, is likely to have a higher work participation rate both for men and women. Similarly, a district with a larger tertiary or secondary sectors is likely to have a lower work participation rate for males and females. The underlying contention is that the primary sector is capable of generating more employment than the other sectors, because agriculture in our country is still mostly labour intensive and most agricultural jobs do not require much of skills. Therefore this sector is capable of absorbing the majority of workers.

The size of a sector can be measured by the percentage of the total district population it employs. The Primary Census Abstract, 1981 gives the percentage of population in each district employed as cultivators and as agricultural labourers. Both categories represent the primary sector. It also gives the percentage of the population engaged in industry (division Va of the NIC comprising household industries, manufacturing, processing, repairs) which represents the secondary sector. The percentage of the population employed in services ("other workers" corresponding to divisions III, IV, Vb, VI-IX of the NIC) gives us an idea of the size of the tertiary sector. The information is summarised in table 4.4.

The size of the primary sector in Ganganagar, Alwar and Jaipur is smaller than the State average. At the same time, Ganganagar shows low female work participation while Jaipur and Alwar show low male work participation. Jaipur also has a larger than State average industrial and services sectors. Now when we

look at Bhilwara, Chittaurgarh and Dungarpur, we observe that the size of the primary sector is much larger than the State average. The sizes of the secondary and tertiary sectors are large too. This, in conjunction with the high work participation rates for men and women in these districts, leads us to conclude that the size of the primary sector is a strong determining factor in inflating or deflating work participation rates of a district, irrespective of the size of the other sectors.

Table 4.4: Relative Sector Size in Rajasthan, 1981

	Percentage of population employed			
	Cultivators	Agri Lab	Industry	Services
Ganganagar	17.01	1.34	0.59	7.54
Alwar	17.87	1.41	0.80	6.65
Jaipur	14.39	1.15	1.48	12.35
Jaisalmer	18.77	1.07	0.83	11.42
Bhilwara	26.35	2.25	1.03	8.87
Chittaurgarh	26.42	2.67	7.80	10.18
Dungarpur	19.53	2.19	0.65	4.82
Rajasthan	18.77	2.23	1.00	8.48

Source: Primary Census Abstract, Rajasthan, 1981

Intrinsic Characteristics:

In the district of Ganganagar, there are two sets of factors that have tended to depress the female work participation rates. Social attitudes playing against women going out to work are usually the result of the history of a place. The history of Ganganagar bears out this fact. There is archeological evidence to suggest that the history of Ganganagar dates back to Indus Valley Civilisation. Ever since the district has witnessed political turbulence. The Aryans came in as invaders in the

ancient period. In the medieval period the Delhi Sultanate took over. The latter is known for their atrocities against women. The district has been the venue for constant strife between Muslims and Rajput leaders. Therefore there is a strong traditional bias for women to be home bound which is likely to have turned into a social taboo, continuing up to the present day. The second factor is that the district has a very hostile desert climate which makes it very difficult for women to go out to work.

In contrast, Dungarpur shows high female work participation rate. History suggests that it has been a politically quiet and stable district. It was always under the rule of local Rajput leaders until the Moghul period when the Rajput King Maharana Askaran accepted the sovereignty of Akbar but maintained very cordial relationship. The climate and vegetation of this district are much friendlier than in other districts. Dungarpur is rich in forest resources. All these factors are conducive to women going out to find work especially the rural poor.

The district of Jaisalmer has a high male work participation rate. Its climate and vegetation are typical of the Thar desert. Agriculture is dependent on erratic rainfall and minor irrigation, making it more male labour intensive. There is extensive animal husbandry and livestock farming. Cattle are reared for milk, goats for milk and meat and sheep for wool. The district is famous for raw wool products. These jobs are also likely to need male labour. This, in conjunction with low literacy, tends to push up male work participation rate.

The district of Alwar shows low work participation rate for

males. Here the stress is more on industrial activity than on agriculture. Higher literacy deters dryland agriculture which demands more unskilled menial work, even if industrial jobs are hard to get. In the district of Jaipur similar reasons depress the male work participation rate. The production scene is dominated by heavy industry and handicrafts. The orientation is towards urban living. Climate and vegetation are not conducive to agriculture. Quoting the District Census Handbook, "impressive progress has been made in the field of education after independence." Literacy and education are high. All these factors work towards reducing male work participation.

The district of Chittaurgarh has regular south-west monsoon and plenty of irrigation. Therefore agriculture is prosperous. the district is rich in minerals like clay, limestone and ochre. It has many small scale industries most of which are likely to be male labour intensive, e.g. cotton spinning, cleaning and baling; stone dressing, crushing, and polishing. All these factors account for high male participation rate.

In the District Census Handbook of Bhilwara, one cannot find any particular characteristic of this district that may account for the very high male work participation rate.

PUNJAB

Ranking:

As we look at the district profile of work participation rates in Punjab (table 2.10, chapter 2), we again see that male work participation rates do not vary across districts. This

reason for this may again be attributed to the age old social bias that compels man to be the chief the breadwinner of the family. But when we look at female work participation rates, we find that even here the range of variation is surprisingly low across districts. Female work participation rates are all very low and more or less similar. The probable reason for this is that the districts of Punjab may be more or less uniform in terms of sex ratio, literacy, sector size and other factors that are likely to affect work participation rates.

To the extent that the work participation rates vary, the following ranking can be made among the districts of Punjab. Sangrur and Bhatinda districts have the highest male work participation rates (57.60 and 56.65 percent respectively). Hoshiarpur and Amritsar have the lowest male work participation rates (49.83 and 49.68 percent respectively). Bhatinda also has the highest female work participation rate (10.81 percent). Amritsar and Kapurthala have the lowest female work participation rates (3.20 and 4.34 percent respectively). We shall now analyse these district to see what factors might have placed them in their respective positions in our ranking.

Sex Ratio:

As before, we hypothesise that higher the sex ratio, the higher will be female work participation rate and lower the male work participation rate.

Table 4.5: Sex Ratio in Punjab 1981

Area	No. of females per 1000 males
Amritsar	871
Kapurthala	898
Hoshiarpur	915
Sangrur	860
Bhatinda	864
Punjab (State average)	879

Source: District Census Handbooks, Punjab, 1981

Our hypothesis is not unambiguously confirmed in the cases of Amritsar and Bhatinda. Both have sex ratios lower than the State average, but Bhatinda has high work participation while Amritsar has low work participation for both men and women. Our hypothesis is supported by the data of Hoshiarpur with high sex ratio and low male work participation rate and of Sangrur with low sex ratio and high male work participation rate. Our hypothesis is rejected in the case of Kapurthala where sex ratio is high but female work participation rate is the lowest. From the above set of confusing results, we conclude that sex ratio is not a strong determining factor influencing work participation rates either for males or females, at least in the districts highlighted.

Literacy:

We hypothesise as explained earlier that higher literacy rates, particularly in the rural sector, are associated with lower work participation rates for both males and females.

Table 4.6: Male Literacy (percent) in Punjab, 1981

Area	Overall	Rural
Amritsar	46.83	39.78
Hoshiarpur	58.24	56.68
Sangrur	35.56	31.64
Bhatinda	34.14	28.30
Punjab (State average)	47.94	41.91

Source: Primary Census Abstract, Punjab, 1981

Table 4.6 shows that Bhatinda and Sangrur, the two districts with highest male work participation rates, have low male literacy overall as well as rural. However Hoshiarpur has very high male literacy rate compared to the State average, particularly in the rural sector and the male literacy of Amritsar, though lower than the State average, is higher than that of the other two districts. Note that both Hoshiarpur and Amritsar have low male work participation. All this is largely consistent with our hypothesis stated above.

Table 4.7: Female Literacy (Percent) in Punjab, 1981

Area	Overall	Rural
Bhatinda	20.29	14.72
Amritsar	34.40	26.08
Kapurthala	38.27	33.19
Punjab (State average)	33.70	27.63

Source: Primary Census Abstract, Punjab, 1981

The female literacy figures reported in table 4.7 also lend support to our hypothesis. Bhatinda has very low female literacy and here the female work participation rate is the highest.

Amritsar and Kapurthala, with low female work participation, show higher literacy. So our hypothesis that literacy and work participation for both male and females are inversely related to each other is established in the districts analysed.

Sector Size:

We again hypothesise that if a district has a larger primary sector compared to other districts, its work participation rates are likely to be high for both males and females. As before we measure the size of each sector by the proportion of total population it employs, obtaining it from the Primary Census Abstract, Punjab (see table 4.8)

Table 4.8: Sector Size in Punjab, 1981

Area	Percentage of population employed			
	Cultivators	Agr Lab	Industry	Services
Amritsar	9.3	7.5	0.6	8.7
Kapurthala	1.0	5.6	1.0	10.3
Hoshiarpur	9.5	4.7	1.0	13.0
Sangrur	14.6	7.0	0.7	8.9
Bhatinda	14.3	8.4	0.6	8.8
Punjab (State av)	10.5	6.5	0.8	11.6

Source: Primary Census Abstract, Punjab 1981

Table 4.8 shows that the percentage of population employed in the primary sector (cultivators and agricultural labourers) is much higher than the State average in the districts of Sangrur and Bhatinda where the work participation rates are the highest for males and females. At the same time the secondary and tertiary sectors in these districts are much smaller than the

State average. In the districts of Amritsar, Hoshiarpur and Kapurthala the primary sector is smaller than the State average. These districts have the lowest work participation rates for males and/ or females. So we observe that a larger primary sector is unambiguously associated with higher work participation rates.

Intrinsic Characteristics:

Now we shall take a look at each of the above districts featuring in our ranking to look for any special characteristics of the district that might have led to high or low work participation rates.

The district of Bhatinda is comparatively backward and its economy is primarily agricultural. Industrially it has always been backward although some industries started prospering since 1971. The incidence of females coming out to work is ever on the increase. The staple products of this district are wheat, gram and cotton and it is an important centre for wholesale cloth business. All this provides plenty of scope of unskilled employment for both males and females accounting partially for the high work participation rates in Bhatinda.

From the District Census Handbook of Amritsar, one gets the general impression that low participation rates here could be the result of a backward bending labour supply schedule. This district appears to be relatively more prosperous which means that there is less pressure on women and children to leave home for work. (At present we do not have any concrete numerical evidence to support this point). Moreover, the district is very prosperous in agriculture which is capital intensive and

supported by abundant major and minor irrigation facilities. Industry is also very well developed. The State is advanced in terms of education, civic amenities and transport and communication. All this goes to show that labour intensive unskilled employment is limited in scope and low in demand causing low work participation rates for men and women. The District Census Handbook also suggests that Amritsar has witnessed political unrest and "the occupational pattern is likely to receive a boost if peace prevails on the border".

The district of Kapurthala is very prosperous. Industry forms a very important part of the economy and tends to lower female work participation. To quote the District Census Handbook, "some females have joined services in the district which had not seen women at work either in the field or in the office." Another reason for low female work participation rate appears to be the hostile and extreme climate.

The district of Hoshiarpur is advanced in terms of education and transport and communication. Since the population is likely to be more educated, they would not want to take up unskilled agricultural jobs, causing low work participation rate for males.

KARNATAKA:

Ranking:

The district level profile of Karnataka's work force participation shows that male work participation rates are fairly uniform across all district but females work participation rates vary widely (table 2.16, chapter 2). To the extent that the male

work participation rates vary, we find that Kodagu and Tumkur have the highest rates (59.6 and 57.7 percent) and Bidar and Dakshin Kannad have the lowest (52.8 and 48.8 percent). For females, Kodagu and Dakshin Kannad have the highest work participation rates (34.1 and 31.7 percent) while Mandya and Belgaum have the lowest (17 and 16 percent). We now look at each of the above district to understand which factors might have been instrumental in placing them in their respective positions in our ranking.

Sex ratio:

Our hypothesis is that the higher the sex ratio, the higher would be the female work participation rate and lower the male the male work participation rate.

Table 4.9: Sex Ratio in Karnataka, 1981

Area	No. of females per 1000 males
Belgaum	957
Bidar	968
Dakshin Kannad	1059
Kodagu	933
Mandya	960
Tumkur	961

Source: District Census Handbooks, Karnataka series, 1981

In the districts of Bidar and Dakshin Kannad, the sex ratio is higher than the State average. In Bidar, the male work participation is low and in Dakshin Kannad the female work participation is high. These two districts confirm our hypothesis. The hypothesis is also confirmed for Kodagu and Belgaum with lower than average sex ratio, the former having the

highest male work participation rate and the latter having a low female work participation rate. For Tumkur and Mandya we can not draw any unequivocal conclusion as their sex ratios are close to the State average.

Literacy:

As before we hypothesise that higher literacy rates, particularly in the rural sector, are associated with low work participation rates for both men and women, and vice versa.

Table 4.10: Male Literacy (percent) in Karnataka, 1981

Area	Overall	Rural
Bidar	38.74	33.75
Dakshin Kannad	61.61	57.42
Kodagu	56.09	53.30
Tumkur	48.23	45.11
Karnataka (State average)	48.61	41.88

Source: Primary Census Abstract, Karnataka, 1981

Table 4.10 shows that Dakshin Kannad has a higher than average literacy rate, while Bidar has a lower than average literacy rate. But both of them have low work participation rates for males. Kodagu has a higher than average literacy rate while Tumkur has a lower than average literacy rate. But both districts have high male work participation rates. These facts are not consistent with our hypothesis. Perhaps in these districts literacy is not a strong factor influencing male work participation.

Table 4.11: Female Literacy (percent) in Karnataka, 1981

Area	Overall	Rural
Belgaum	41.70	19.04
Dakshin Kannad	44.99	40.15
Mandya	19.82	16.10
Kodagu	43.31	40.61
Karnataka (State average)	27.83	20.04

Source: Primary Census Abstract., Karnataka, 1981

For females, Kodagu and Dakshin Kannad have higher than average literacy rates and both have high female work participation (see table 4.11). This contradicts our hypothesis. Belgaum and Mandya have low female work participation, but the former has high and latter has low literacy rates. All these imply that even for females literacy is not a strong determinant of work participation in the districts under consideration.

Sector Size:

Our hypothesis states that if a district has a larger primary sector, its work participation rates will be higher for males and females. As described earlier we measure the sizes of primary, secondary and tertiary sectors from the employment data obtained from the Primary Census Abstract, 1981 (see table 4.12).

Kodagu has a slightly smaller primary sector compared to the State average, a very small secondary sector and a very large tertiary sector (more than twice the State average). This district has high male and female work participation rates. An explanation for this could perhaps be the fact that the services sector may predominantly intensive in the use of unskilled labour which is abundant in supply. This would be the case if there is

scope for mining, construction, extraction etc. We shall come to this point again in the next subsection.

Table 4.12: Sector Size in Karnataka, 1981

Area	Percentage of Population employed			
	Cultivators	Agr Lab	Industry	Services
Belgaum	16.3	9.4	1.6	8.8
Bidar	12.1	15.5	1.0	8.2
Dakshin Kannad	10.0	7.8	6.4	16.8
Kodagu	10.5	7.2	0.4	27.1
Mandya	20.1	7.3	0.7	5.9
Tumkur	21.2	7.5	1.2	6.3
Karnataka	14.1	9.8	1.5	11.3

Source: Primary Census Abstract, Karnataka, 1981

The district of Tumkur has a large primary sector and very small secondary and tertiary sectors compared to the State average. The district has high male work participation rates which is consistent with our hypothesis.

Dakshin Kannad has a small primary sector and large secondary and tertiary sectors. Here the female work participation is low confirming our hypothesis, but the male work participation rate is low contradicting our hypothesis. We shall explore the reason for this in the next section.

Mandya has a large primary sector and small secondary and tertiary sectors. It also has low female work participation confirming our hypothesis. Belgaum and Bidar also have large primary sector and small secondary and tertiary sectors, but both have low work participation rates for females and males respectively. This again contradicts our hypothesis.

Intrinsic Characteristics:

Now we take a look at each of the above districts to find some intrinsic characteristics from their District Census Handbooks that might explain their high or low work participation rates.

Belgaum is a primarily agricultural district where forests, mineral and water resources have been channelised to a considerable extent for achieving its overall economic development. The agricultural economy rests equally on food crop as well as cash crop (cotton, tobacco, groundnut etc.) production. Irrigation facilities are in abundance. In the industrial sphere it is not so advanced but has the oldest spinning mills of the State, an aluminum factory and a chain of sugar factories. Handloom weaving is important. Overall, it is a prosperous district and therefore women do not need to go out to work, resulting in low female work participation rate.

Moreover, there may be a social bias deterring women from working because of a long history of political turmoil right up to independence. From 550 to 1208 AD, the district was ruled periodically by Rashtrakutas, Chalukyas and Yadavas, constantly at war with each other. They were all overthrown by Alauddin Khilji in 1320. Then came Mohammed-bin-Tuglaq in 1327. The kingdom was then conquered by the Vijayanagar kings who succumbed to the Bahamani Kingdom. The Moghuls ruled the district since early eighteenth century and constantly fought with the Marathas. Then came Hyder Ali of Mysore and his son Tipu Sultan who constantly fought with the British. Marred by political turmoil

the district is very likely to have developed a social bias against women from leaving home for work.

In the district of Mandya, the history, climate or physiography has nothing to suggest any reason for low female work participation. The reason for this, as we shall see, is economic prosperity which relieves women from the need to seek work. To quote the District Census Handbook, "Mandya district is the most prosperous in the State and has an economic base which has been established by meticulous efforts over several decades." Economic prosperity comes from minerals, rivers, forests and agricultural land. Canal irrigation is significant. It has the Krishnasagar dam which is a part of the Cauvery Power Scheme. It is important in horticulture, especially fruits. It is also rich in livestock. Industry is well developed. The main industries are sugar, distilleries, fertilizers, paper, plastics, and scooter. The district is a pioneer in hydel power, sericulture and very important in handloom weaving. Trade and commerce are well developed.

In the district of Tumkur, there is high male work participation. Agriculture is the backbone of the district. Rainfall is scanty and unreliable and there is no canal irrigation. Agriculture is dependent on tank and well irrigation only. This makes agriculture in this district highly labour intensive, particularly male labour. The district is rich in minerals such as gold, manganese, iron, limestone, granite, quartz, soapstone, china clay and silver sand. The extraction of these minerals is also likely to demand male labour.

In the district of Dakshin Kannad, the sex ratio is high because of migration of male workers to the neighbouring Malnad district. In the coastal districts, there is scope for marine and fishing activities. Forests are important for their resources. The district is industrially progressive. The main industries are cashew and bidi making, where there is a lot of scope for female employment. There is a large proportion of marginal workers in the female population. Agriculture is seasonal and there is high demand for labour in the peak seasons. Lots of women and children do this work as marginal workers. All these lead to high female work participation and low male work participation.

In the district of Kodagu, mining and industry are low profile. Transport and communication are confined to urban areas. Forests and plantations support the economy and agriculture provides sustenance to the economy, since soil is fertile, rainfall is abundant and the relief is undulated. The main crops are paddy, coffee, oranges and cardamom. Therefore there is ample scope and need for agricultural unskilled employment on a large scale for both men and women. Thus we have high male and female work participation rates in Kodagu.

ORISSA:

Ranking:

When we look at the district profile of the work participation rates (table 2.22, chapter 2), we see the same phenomenon that male work participation rates vary only within a narrow range while female work participation rates vary widely.

To the extent that the rates vary, we can rank the districts in the following manner. The highest male work participation rates for come from the districts of Kalahandi (61.6 percent) and Phulbani (61.2 percent) while lowest rates are from Baleswar and Cuttack (51.7 percent) and (51.3 percent). For females, the highest work participation rates come from Mayurbhanj (37.3 percent) and Koraput (34.2 percent) while the lowest come from again Baleswar (6.2 percent) and Cuttack (6.1 percent).

Sex Ratio:

Our hypothesis is that higher the sex ratio, the higher would be the female work participation rate and lower the male work participation rate.

Table 2.13: Sex Ratio in Orissa, 1981

Area	No. of females per 1000 males
Mayurbhanj	989
Baleswar	977
Cuttack	972
Phulbani	999
Kalahandi	1010
Koraput	993
Orissa (State average)	981

Source: District Census Handbooks, Orissa, 1981

In Kalahandi and Phulbani, the sex ratio is high but the male work participation is also high, contradicting our hypothesis. In Mayurbhanj and Koraput, the sex ratio is high while the female work participation is also high, confirming our hypothesis. Cuttack and Baleswar have low sex ratios and low work participation rates for males and females. The result on females

is consistent with our hypothesis but not the result on males. We may conclude that sex ratio in these Orissa districts has an effect on work participation of females but not of males.

Literacy:

Higher literacy, particularly in the rural sector, is associated with lower work participation for men and women. From table 4.14, we observe that Baleswar and Cuttack have higher than State average male literacy rates and both these districts have low work participation rates for males. Kalahandi and Phulbani have low male literacy and high male work participation. All this is consistent with our stated hypothesis.

Table 4.14: Male Literacy (percent) in Orissa, 1981

Area	Overall	Rural
Baleswar	55.55	55.09
Cuttack	58.12	56.68
Phulbani	42.70	40.94
Kalahandi	31.28	29.47
Orissa (State average)	47.10	44.51

Source: Primary Census Abstract, Orissa, 1981.

Table 4.15: Female Literacy (percent) in Orissa

Area	Overall	Rural
Mayurbhanj	13.90	12.09
Baleswar	28.26	27.48
Cuttack	32.27	30.65
Koraput	8.57	5.31
Orissa (State average)	21.12	18.45

Source: Primary Census Abstract, Orissa, 1981

For female literacy reported in Table 4.15, Baleswar and

Cuttack have high rates compared to the State average and both districts have low female work participation rates. In Mayurbhanj and Koraput, the female literacy rates are low but work participation is high. This is consistent with our hypothesis.

Sector Size

We hypothesise that larger the primary sector of a district compared to that of the other districts, the higher would be the work participation rates for males and females. The sector size, measured by the proportion of the population employed is reported in table 4.16.

Table 4.16: Relative Sector Size in Orissa, 1981

Area	Percentage of population employed			
	Cultivators	Agri Lab	Industry	Services
Mayurbhanj	17.95	12.86	2.04	5.41
Baleswar	14.55	6.97	0.47	5.21
Cuttack	12.36	6.56	1.87	7.86
Phulbani	20.60	11.50	1.29	5.49
Kalahandi	18.24	12.79	0.91	4.00
Koraput	20.97	11.06	0.71	6.11
Orissa	15.37	9.09	1.08	7.21

Source: Primary Census Abstract, Orissa, 1981

In the districts of Mayurbhanj, Phulbani and Koraput, the primary sector is larger than the State average while the secondary and tertiary sectors are smaller. Each of these districts have high work participation rates for males or females, thus confirming our hypothesis. In Cuttack and Baleswar the primary sector is smaller than the State average and their work participation rates for males and females are low. This is

also consistent with our hypothesis.

Intrinsic Characteristics:

The District Census Handbooks of Orissa do not have a comprehensive State profile as the other District Census Handbooks do. So we are unable to capture any intrinsic feature of the district that might have placed them in their respective positions in our ranking.

CONCLUSION

The first conclusion that we can draw is that the male work participation rate is primarily determined by the conventional factors that compel a man to work, namely his position as the breadwinner of the family. Other factors affecting work participation are of secondary importance for males. But in case of females these other factors appear to be important.

Sex ratio does not seem to have any unambiguous association with work participation rates, except in the districts of Karnataka where we have a case of out migration of male labour. Literacy however has an unambiguous negative association with male and female work participation rates. Again the districts of Karnataka are the exceptions. Regarding sector size, we find that a larger primary sector in district is usually associated with a higher work participation there for males and females. This is true for all States except the districts of Karnataka.

Among the intrinsic characteristics of the districts, we notice certain common features explaining high or low work participation. Economic prosperity of a region lowers work

participation of females, possibly due to the operation of the backward bending labour supply curve. Wherever agriculture is dependent on scanty rainfall and non-canal minor irrigation, it tends to be more male labour intensive, pushing up work participation rates for men. The same is true for districts rich in minerals. Hostile climate and sparse vegetation deter women from working, and female work participation is usually low in such cases. Female work participation rate is higher for districts with forest resources and friendly climate. It is also high where there is scope for marginal employment during peak agricultural seasons and also where there are specific industries like handicrafts and bidi. Finally, a district with a history of political turbulence is usually characterised by low female work participation.

CHAPTER 5

URBANISATION AND WORK FORCE

In this chapter we try to examine interaction between urbanisation and work force in our chosen four States. We expect each dimension of work force to be affected by various aspects of urbanisation. We seek to capture these relationships by the various hypotheses which we develop on the basis of our detailed discussion of the characteristics of urbanisation and work force presented in chapters 3 and 4.

HYPOTHESES

Urbanisation has a depressing effect on male work participation rate. General urbanisation, which is the ratio of urban to rural population (URB1), depresses the male work participation rate in the following manner. Urban jobs are usually more demanding in terms of skills, vocational training, education and work discipline. These qualities are rare among the masses of the Indian work force. Therefore higher the number of people living in the urban sector compared to the rural sector, higher the number of males likely to be without jobs.

Urban crowding or urban density (URB2) has negative effect on male work participation rate. This happens in the following manner. The existence urban crowding indicates that to some extent rural male population of the district has migrated to the urban areas, leaving their rural jobs behind. Therefore, on the one hand, rural male employment has declined. On the other hand, all of these rural migrants are unlikely (for reasons discussed

in the earlier chapters) to get jobs in the urban areas where they have migrated to. Thus, there is a decline in rural employment with no corresponding increase in urban employment. This implies that the overall WPRM of a district is likely to register a decline with greater incidence of urban crowding.

Urban accretion, or disproportionate urban growth of one or few cities over other very small towns (measured by URB3), also has a negative effect on male work participation rate. The largest towns usually have a large proportion of adult males in their population. This usually means that men have left their rural jobs and moved into large metropolises, making them grow in size and spread. After living in very big cities, they are likely to acquire urban attitudes, values and ways of life which make them look down upon petty unskilled jobs. They prefer to remain temporarily unemployed and wait for skilled and dignified jobs.

Female work participation rate is also negatively affected by urbanisation. As discussed earlier, urban jobs do not have flexible working hours which women need to attend to their household duties. The jobs demand technical and vocational skills which most women have not had the opportunity to acquire. The impersonal work environment in the urban sector make women more vulnerable to harassment.

Higher general urbanisation measured by URB1 implies a larger ratio of urban to rural population. Therefore higher would be the number of women in the urban sector facing the above difficulties of going out to work and hence lower would be the

female work participation rate.

Higher urban density (URB2) would imply that more people would be competing for few urban jobs. Here men are likely to out-compete women because of the latter's disadvantages with urban jobs, thus lowering female work participation rate.

Higher the urban accretion (URB3), greater the size of the largest town(s) compared to the smaller towns. Big cities are usually more impersonal and unfriendly. here the usual difficulties of a prospective working woman are likely to be much greater. In the likely case that the population of these cities is dominated by adult males, the urban work participation of women is low. At the same time, women in the rural sector may not be able to take up the jobs vacated by male migrants to an extent that could significantly raise the rural work participation rate for women. Therefore the overall female work participation rate is likely to decline with rising URB3.

The male child work participation rate declines with the increase in the degree of urbanisation. In the rural/agricultural sector there is more flexibility of work and there is lot of light, unskilled work for children to do. Primary schooling is not as easily available in the rural sector as in the urban sector. Moreover, because of lack of awareness of the rural poor, they prefer to send their children to the fields to work as marginal workers to sending them to school. Therefore higher the ratio of urban to rural population (URB1), less would the male child work participation rate. Wherever urban crowding is high (URB2), there is a large urban population competing for

a small number of urban jobs and clearly male child job seekers are out-competed by adult males. A region where urban accretion (URB3) is high, there would be big cities where literacy education and social awareness should act as deterrent to child labour and promote primary education among them. Here male child work participation is expected to be lower.

Higher the degree of urbanisation, the lower is the work participation rate of male main workers in the primary sector (WPRMP). With a higher general urbanisation (URB1), a higher proportion of population reside in the urban areas and lower the proportion of rural residents to take up agricultural jobs which constitute the primary sector. This results in a lower primary sector work participation rate. Higher the extent of urban crowding (URB2), more is the urge for people to leave the rural areas to crowd into small urban areas in quest for whatever the latter might have to offer. There the work participation rate in the primary sector is bound to fall. Higher the urban accretion (URB3) higher is the size of few large towns. Usually such top heavy urban growth is devoid of rural linkages and often represents a deteriorating rural hinterland that people want to leave, given the opportunity. This is likely to have a negative effect on primary sector work participation rate.

The work participation rate of male main workers in the secondary sector (WPRMS) is expected to be positively related to the degree of urbanisation. With a higher proportion of population in the urban sector (high URB1), more people are there to take up urban jobs which are primarily industrial jobs

constituting the secondary sector. Hence secondary sector work participation rate is likely to increase. For the same reason urban density (URB2) is expected to have the same effect on secondary sector work participation rate. High urban accretion (URB3) occurs when a few large towns have grown disproportionately large around some economic activity that is not agriculture related. It is very likely that some industrial activity has led to such urban growth. Therefore urban accretion should boost employment in the secondary sector and thereby raise work participation rate in this sector.

Wherever there is large urban population, certain services are needed to sustain it. These services constitute the tertiary sector. They range from whole and retail trade, transport, real estate, insurance to business, social and personal services. This sector exists in the rural areas too, but to a very limited extent compared to the urban areas. Hence higher the degree of urbanisation, higher would be the work participation rate of male main workers in the tertiary sector. This is clearly so when we measure urbanisation by the URB1, the ratio of urban to rural population. Greater the extent of urban crowding (URB2), more the number of people living per unit of area, and so more people are needed to cater to their personal and other needs. Therefore higher employment is generated in the tertiary sector. This should definitely push up the tertiary sector work participation rate for male main workers. The same factors operate to push up this rate when urban accretion (URB3) is high. This is more so because some towns often grow disproportionately large because

of expansion of a tertiary sector activity alone, for example, wholesale and retail trade.

ECONOMETRIC ESTIMATION

In order to test the above set of hypotheses, we estimate the following set of bivariate linear regression models:

- 1) $WPRM = A_{1M} + B_{1M} (URB1)$
- 2) $WPRM = A_{2M} + B_{2M} (URB2)$
- 3) $WPRM = A_{3M} + B_{3M} (URB3)$
- 4) $WPRF = A_{1F} + B_{1F} (URB1)$
- 5) $WPRF = A_{2F} + B_{2F} (URB2)$
- 6) $WPRF = A_{3F} + B_{3F} (URB3)$
- 7) $WPRCH = A_{1C} + B_{1C} (URB1)$
- 8) $WPRCH = A_{2C} + B_{2C} (URB2)$
- 9) $WPRCH = A_{3C} + B_{3C} (URB3)$
- 10) $WPRMP = A_{1P} + B_{1P} (URB1)$
- 11) $WPRMP = A_{2P} + B_{2P} (URB2)$
- 12) $WPRMP = A_{3P} + B_{3P} (URB3)$
- 13) $WPRMS = A_{1S} + B_{1S} (URB1)$
- 14) $WPRMS = A_{2S} + B_{2S} (URB2)$
- 15) $WPRMS = A_{3S} + B_{3S} (URB3)$
- 16) $WPRMT = A_{1T} + B_{1T} (URB1)$
- 17) $WPRMT = A_{2T} + B_{2T} (URB2)$
- 18) $WPRMT = A_{3T} + B_{3T} (URB3)$

We use the method of ordinary least squares to estimate the above regression models. We have clearly specified in the

previous sections that the work participation rates are a function of URB1, URB2 and URB3 and not the other way round. Therefore we stick to a single equation estimation as opposed to simultaneous equation estimation. According to our hypotheses, the regression coefficients can be expected to have the following signs:

$$B_{1M} < 0$$

$$B_{2M} < 0$$

$$B_{3M} < 0$$

$$B_{1F} < 0$$

$$B_{2F} < 0$$

$$B_{3F} < 0$$

$$B_{1C} < 0$$

$$B_{2C} < 0$$

$$B_{3C} < 0$$

$$B_{1P} < 0$$

$$B_{2P} < 0$$

$$B_{3P} < 0$$

$$B_{1S} > 0$$

$$B_{2S} > 0$$

$$B_{3S} > 0$$

$$B_{1T} > 0$$

$$B_{2T} > 0$$

$$B_{3T} > 0$$

From the estimated values of the coefficients, we calculate the t-values (by dividing them by their respective standard error). We have to compare this calculated t value with the

tabulated value of t for the given degrees of freedom at the desired level of significance (5 percent and 10 percent). If the calculated value of t is greater than the tabulated value, we reject the null hypothesis that $B = 0$ and accept the alternative hypothesis that $B \neq 0$. If on the other hand the calculated t value is smaller than the tabulated t value, we accept the hypothesis that $B = 0$ and declare the coefficient to be statistically insignificant. The analysis is carried out for each of the four States of our study in turn and the regression results are tabulated in tables 5.1 to table 5.4 for each State respectively which are discussed in the following sections.

RESULTS FOR ORISSA

As we can see from table 5.1, coefficients B_{1m} , B_{2m} and B_{3m} are all negative but only b_{3m} is statistically significant (10 percent level). This means that general urbanisation and urban crowding do not have any significant effect on male work participation rate. But this rate is indeed negatively affected by disproportionate urban growth or urban accretion.

The trend is somewhat same for females. Only b_{3f} is significant at (5 percent level) and is negative indicating that disproportionate, top heavy urban growth has a strong negative effect on female work participation rate.

The trend is once again repeated in case of male child labour. The coefficients b_{1c} and b_{2c} are negative but insignificant while b_{3c} is negative and significant at 10 percent

level which means that urban accretion has a significant lowering effect on male child work participation rate.

Coefficients B1p, B2p and B3p are all negative and significant at 5 percent level. This means that general urbanisation, urban crowding and urban accretion all have a definite detrimental effect on the work participation rate for male main workers in the primary sector.

Coefficients B1s, and B2s are positive and significant at 5 percent level. B3s is positive but insignificant. This means that general urbanisation and urban density have a positive and significant effect on the work participation rate for male main workers in the secondary sector.

In the tertiary sector, B1t is positive and significant at 10 percent level, B2t is positive but insignificant and B3t is positive and significant at 5 percent level. This means that general urbanisation and urban accretion have a definite positive effect on the work participation rate for male main workers in the tertiary sector.

Suggested Explanations:

Male work participation rate is not significantly associated either with the degree of general urbanisation or with urban density, perhaps because other factors have a greater influence. As we have seen, socio-economic factors have traditionally put pressure on men to support themselves and their families and breadwinners. Especially when there is lack of overt affluence, the above factor is the prime motive for a man to seek work. Its

influence on the overall male work participation rate is so strong that the influence of other factors like urbanisation is obliterated.

Even so, the rate is lowered by increased urban accretion. This possibly suggests that top heavy urban growth, wherever it has occurred, has taken place at the expense of a corresponding impoverishment of the rural areas. This happens when a few large cities grow around an economic activity that has no linkages with and sometimes little relevance to the surrounding region. As the rural areas have impoverished and small towns have not grown adequately, the scope for employment might have declined. At the same time, big cities have attracted men from rural areas to migrate to them. These poor and unskilled migrants have often not found employment in the big cities. All this has worked towards diminishing the work participation rate for males.

General urbanisation and urban crowding does not seem to have made a difference to the female work participation rate in Orissa. This perhaps suggests that even though the proportion of people in the urban areas may be high and many of them may crowd into small areas, among them there are very few women. It means that in urbanised regions there is a significant proportion of male population who have migrated there, leaving their womenfolk behind in their homes in the smaller towns or adjoining villages. Therefore even with greater urbanisation there has been no reason for women's work participation rates to change. Where there are disproportionately large towns, female work participation rate has significantly declined. One reason for this could be that the

adult males in these highly populous agglomerations have out-competed the urban women from the job market. The other reason suggests that with the growth of huge towns, the surrounding rural region and small towns have been impoverished. This has perhaps led to unemployment among rural females leading to an overall decline in the female work participation rate. The overall picture that emerges is one of male overcrowding in urban areas, often in huge towns and of females mainly residing in impoverished countryside and small towns.

General urbanisation and urban crowding does cause male child work participation rate to decline, but this impact is not statistically significant. This is in line with the picture of urban population profile emerging so far. Among the people who live in the urban areas, most are adults. Thus, increased urbanisation has had no significant effect on the male child work participation rate. Only where there has been high urban accretion, male child work participation rate is seen to be significantly low. The reason for this is two-fold. The population in huge towns has more adults who out-compete male child job seekers from the few urban jobs that are hard to get. Moreover, these large towns have many more facilities for primary schooling. The social awareness of the population here can also be presumed to be higher. These factors deter families from sending their out to work under hard factory conditions.

All the three indicators of urbanisation have a negative and significant effect the work participation rate for male main workers in the primary sector. Higher the degree of urbanisation

whether in the form of a higher proportion of urban population or greater urban density or growth of a few large towns, more male main workers have left their agricultural jobs. This unambiguous preference for non- primary sector jobs perhaps suggests an impoverished agriculture whose returns are not very high. It looks as though a prime cause for urban growth is rural poverty.

It is interesting to note that in the secondary sector, representing industry, the work participation rate for male main workers has significantly increased with general urbanisation and with urban crowding, but not significantly with urban accretion. This perhaps suggests that industry (at whatever scale) has grown more in towns that are relatively small in population and area rather than in huge sprawling cities.

This picture is again visible in case of the tertiary sector. General urbanisation significantly boosts the male work participation rate for main workers and this effect is even more significant in case of urban accretion. Urban crowding has no such significant effect. This could have occurred because of inordinate growth of a few towns around some tertiary sector activity, for example, tourism, trade, education etc.

Our findings suggest the following features for the State of Orissa. Agriculture seems to be backward and unremunerative. This causes rural people to migrate to urban places in search of non agricultural jobs. In the process, they leave their wives and children behind. They migrate even though they may be unemployed in the towns. The smaller towns offer more industrial jobs to

these poor and probably unskilled workers. Therefore industries are likely to be related to agriculture, mining etc. The very big towns are more likely to offer tertiary sector jobs in the form of personal services.

If we refer back to chapter 3 of our study, we do in fact see that in a host of small towns, for example in the districts of Ganjam and Puri, industries are village based and small scale (e.g. coconut products, seafood, cashew nuts, limestone, dolomite etc). Heavy industries, for example those in Cuttack and Sundargarh, have not benefitted their rural surroundings through healthy linkages. They have probably employed skilled urban population, and to serve them a large tertiary sector has grown providing employment to unskilled rural migrants.

RESULTS FOR RAJASTHAN

Table 5.2 presents the regression results for Rajasthan. Coefficients B1m, B2m and B3m are all negative but none of them is statistically significant. This implies that urbanisation, in all its three dimensions, tends to have no significant effect on male work participation.

B1f is negative and significant at 10 percent level, while B2f and B3f are negative but insignificant. This means that general urbanisation has a negative effect on female work participation but urban density and urban accretion have no significant effect.

Among B1c, B2c and B3c, only B2c is significant at 10

percent level and its sign is negative. This means that general urbanisation and urban accretion have no significant effect on male child work participation rate but urban density has a negative effect.

Coefficient B1p is negative and significant at 5 percent level, but B2p is insignificant. Again b3p is negative and significant at 10 percent level. This means that general urbanisation and urban accretion have a negative effect on primary sector work participation rate of male main workers.

Coefficients B1s and B3s are positive and highly significant (5 percent level) but B2s is insignificant. This implies that general urbanisation and urban accretion have a positive and significant effect on secondary sector work participation of male main workers

Coefficients B1t and B3t are positive and highly significant indicating that general urbanisation and urban accretion have positive effect also on tertiary sector work participation rate of male main workers.

Suggested Explanation:

Male work participation rates are not significantly affected by urbanisation, whether in the form of general urbanisation, urban crowding or urban accretion. It appears that men, as sup[porters of the themselves and their family, always have a motivation to find work, despite the difficulties imposed by urbanisation.

In case of female work participation rates, only general urbanisation has a significant negative effect, not urban

crowding or urban accretion. Higher the proportion of urban population, lower is the possibility of women finding jobs, since greater are the difficulties of urban women going out to work. At the same time, it appears that wherever there is urban crowding or the presence of disproportionately large towns, the females do not come into the picture. It is the rural men who crowd into towns in search of urban jobs leaving their womenfolk behind and thus having no significant effect on female work participation rate.

General urbanisation and urban accretion do not have any significant effect on the male child work participation rate. This probably shows that male child workers probably work in agriculture. With increase of general urbanisation and urban accretion the child workers probably remain in the rural areas and so their work participation rate does not undergo any significant change. But wherever there is urban crowding, the male child work participation rate declines. Children work in the urban sector usually on a temporary ad hoc basis. When urban crowding increases they are outcompeted by adults.

In the primary sector general urbanisation has a significant negative impact on the work participation rate for male main workers. This shows that the increase in the general urbanisation has caused adult male main workers in the primary sector to leave their jobs and migrate to urban areas. This perhaps suggests that the agricultural sector is not very affluent. The guiding factors causing male workers to migrate may be poverty. Urban accretion, i.e. disproportionate growth of few large towns has been

accompanied with significant decline in primary sector work participation. This suggests that a few huge towns have grown in the midst of a rural area that is agriculturally poor and the urban accretion has not benefitted the latter in terms of linkages. The effect of urban crowding on primary sector work participation rate is insignificant. The reason for this may be that urban crowding has more often been caused by only a small urban population concentrating in towns whose geographical area is proportionately smaller.

In the secondary sector the positive effect of general urbanisation and urban accretion on the work participation rate for male main workers is very significant, whereas that of urban crowding is insignificant. The urbanisation appears to be centred around industrial activity that has generated employment for male main workers. This appears to be particularly true in cases where a few towns have grown very large. In towns with small population and proportionately smaller area, industrial activity does not seem to have generated significantly higher employment for male main workers.

It is interesting to note that in the tertiary sector the same pattern is repeated. Higher the proportion of urban population, higher is the work participation rate in the tertiary sector for male main workers. This effect is more pronounced where the level of urban accretion is high. It is insignificant where there is urban crowding. This suggests that the tertiary sector has generated employment for male main workers where giant size towns have grown in spread and population. The sheer volume

of urban population in populous sprawling cities is likely to generate demand for services in the tertiary sector. Such effects are insignificant where small towns have housed small populations in small geographical areas.

The above set of results helps us identify the following features of the pattern of urban growth and its effect on work force in the State of Rajasthan. Urban growth has significantly affected the work force participation rates wherever it has occurred in the form of a few large towns growing disproportionately compared to other towns. These giant towns have generated employment in industry and services. The proportion of adult males in the big towns is much higher than females or children. Male workers have left their agricultural jobs in the rural sector in quest for urban jobs in the secondary or tertiary sectors. In the process they have left their families behind, even to face the likelihood of temporary unemployment. This indicates that the rural economy dominated by agriculture is backward and unremunerative leading to poverty. The latter seems to be a driving force for rural-urban migration leading to disproportionate growth of large towns. The economic activities of these cities do not seem to have benefitted the surrounding rural areas. The smaller towns are of little importance. It appears, as we have already seen in chapter 4, that in case of females traditional social and climatic conditions are strong guiding forces governing their decision to work. Urbanisation appears to have a less powerful effect.

If we refer back to chapter 3, we see that some of the above

features do show up in certain districts of Rajasthan. Jaipur and Jodhpur are highly urbanised. Jaipur city is huge and has generated employment in industries with no relevance to the rural surroundings. Similar is the case of Ajmer district where there is heavy industry in Ajmer city. In Jodhpur district the city of Jodhpur has grown tremendously. Its main economic activity is wholesale and retail trade which has generated large scale employment in the tertiary sector. Even towns which employ skilled urban personnel in heavy industry generate employment in the tertiary sector to serve them.

RESULTS FOR PUNJAB

Table 5.3 shows that for male work participation rates in Punjab, coefficients B1m and B3m are positive but insignificant whereas B2m is negative and insignificant. This means that urbanisation in any form has not significantly affected male work participation rates.

For females, the B1f, B2f and B3f are all negative but only B2f is significant at 5 percent level. This means that only urban crowding significantly reduces female work participation rate.

For male children, it appears that urbanisation in all its forms has very little effect on the work participation rate. Coefficients B1c, B2c and B3c are all positive but statistically insignificant.

For male main workers work participation rate in the primary sector seems to be largely unaffected by urbanisation.

Coefficients B1p, B2p and B3p are all negative and statistically insignificant. For the corresponding work participation rate in the secondary sector, coefficients B1s and B3s are positive and highly significant while B2s is positive but insignificant. This means that general urbanisation and urban accretion have boosted work participation rate in the secondary for male main workers but urban crowding has no such significant effect.

The same pattern is seen in the tertiary sector, where general urbanisation and urban accretion does have a positive effect on the work participation rate for male main workers. Coefficients B1t and B3t are positive and significant while B2t is not. Urban crowding does not have any significant effect on work participation rate for male main workers in the tertiary sector.

Suggested Explanation:

Urbanisation does not seem to have any significant effect on overall male work participation rate. The main reason for this is, as usual, that the prime guiding force for a man to work is his responsibility to support himself and his family. Urbanisation is not able to act as a deterrent to this motivation. If at all, there seems to be positive, although statistically insignificant, effect of urbanisation on male work participation rate in Punjab. This perhaps suggests that urbanisation is creating employment in the urban sector as well as in the rural sector through the feed back effects that the urban activity might have on the adjoining rural areas through linkages of demand and raw materials. This gives us a hint that

urbanisation in Punjab has occurred along a healthy path that tends to enrich the adjoining rural areas.

In case of females, general urbanisation and urban accretion do not have any significant effect on the work participation rate. This suggests that women who work outside their homes are mostly employed in agriculture. It makes little difference to their employment if more people live in towns or if more people live in a few huge towns that grown over other small towns. Only in the case of urban crowding we see that the overall female work participation rate declines. This means that employment of urban females in urban jobs decreases because of competition from males wherever there is urban crowding.

Urbanisation seems to have a very slight effect on the work participation rate of male children. The probable reason for this is that most male child workers work as marginal labourers on their family farms in the rural sector. The extent of urbanisation does not affect them. But the positive sign of the coefficient may be hinting at the fact that more child labour is employed in agriculture with urban growth. The agricultural jobs left behind by city bound migrants may be taken up to a very small (insignificant) extent by children. This again hints that agriculture is remunerative and so there is an opportunity cost of moving from the land.

Urbanisation does not have a significant depressing effect on the work participation rate for male main workers in the primary sector. This strongly suggests that people working in the agricultural sector are sufficiently well off. So they not pushed

by poverty to the urban sector. Perhaps, they refrain from taking up urban jobs because they do not want to risk losing the high income they earn in agriculture. This shows that urbanisation in Punjab has not occurred in accompaniment with rural poverty and unremunerative agriculture.

In the secondary sector, general urbanisation has created employment opportunities for male main workers. Industrial employment has been enhanced by urban accretion, but urban crowding does not seem to have generated significant additional employment in industry. The likely reason for this is that industries have grown around urban areas, more so in large cities since those places are likely to be better endowed with infrastructural resources, marketing facilities and human capital.

In the tertiary sector, we see the same pattern. Higher the urbanisation and urban accretion, significantly higher the work participation rate for male main workers. This means that tertiary sector activities have sprung up in and around urban areas, particularly in big cities. In the previous paragraph we have seen that industrial activities have flourished in urban areas, particularly in large cities. It looks as though tertiary and secondary sector employment have grown hand in hand in big cities. Industrial and service sector employment do not seem to have significantly grown because of urban crowding. This perhaps means that places where small population is crowding in small urban areas, i.e. in small towns, there has been no significant spurt of industrial or tertiary sector activities.

The general features that emerge about Punjab from the above results are listed as follows. Employment generating industrial activity has resulted from urbanisation, particularly in big cities. Growth of industry and services seem to have perpetuated each other in the urban areas, especially where huge towns have grown in relation to other very small towns. There is no evidence to suggest that small towns declined as bigger cities grew. At the same time employment in agriculture did not decline significantly. Urbanisation must have created fresh employment opportunities in agriculture. The urban growth in this State has occurred together with agricultural prosperity. This speaks of healthy urban growth characterised by urban-rural linkages.

These features by and large conform to the findings of Ghosh (1987) that we have surveyed in the first chapter. The rural scenario in Punjab is characterised by general agricultural prosperity. It is dotted by many small and medium sized towns whose main economic activities are processing and marketing of agricultural products. The large cities have grown along important transport routes and trading centres. They have generated a large industrial sector, and in turn, a large tertiary sector.

RESULTS FOR KARNATAKA

As reported in table 5.4, the male work participation rate does not seem to be significantly affected by urbanisation. Coefficients B1m, B2m and B3m are all negative but insignificant indicating none of the measures of urbanisation have been able

to depress the overall male work participation rate.

Coefficients B1f and B2f are negative and insignificant while B3f is negative and significant. This means that general urbanisation and urban crowding do not have a significant negative effect on the female work participation rate. But wherever a few huge towns have grown disproportionately large in relation to surrounding towns of smaller size, the female work participation rate appears to be significantly lower.

Coefficients B1c, B2c and B3c are all insignificant. This shows that urbanisation, whatever its character and manifestation, has no significant effect on the work participation rate of male children.

Coefficients B1p and B3p are negative and highly significant. This shows that wherever there is a higher proportion of people living in the urban areas, particularly where the large cities are very much larger than the other smaller towns, the primary sector shows a significantly lower work participation rate for male main workers in the primary sector. B2p is insignificant indicating that urban crowding does not have the above effect to any significant extent.

Urbanisation appears to have no significant effect on the work participation rate for male main workers in the secondary and tertiary sector. Coefficients B1s, B2s, B3s and B1t, B2t, B3t are all insignificant.

Suggested Explanations:

Urbanisation does not affect the overall male work participation rate for the usual reasons. Being the bread winner

of the family a man can not afford to let the difficulties of urban job conditions deter him in his motivation to work.

General urbanisation and urban crowding fail to affect the overall work participation rate for females. But where there is urban accretion, for example in district like Bangalore, where one city towers over other smaller towns, there is a detrimental effect on female work participation rate because urban jobs are probably harder to get, more sophisticated, skilled and factory oriented.

Urbanisation does not affect the male child work participation rate, because in an advanced State like Karnataka, children, to a large extent, may not have been sent to work anyway.

It appears that urban growth in terms of general urbanisation and urban accretion does draw male main workers away from the primary sector. This perhaps suggests that agriculture is not remunerative enough to hold workers to the land when there is a lure of job opportunities in urban regions.

In the secondary and tertiary sectors, urbanisation does not generate significantly more employment for male main workers.

The overall picture that emerges is difficult to explain. Urban growth draws people away from agriculture. At the same time, employment opportunities in industry and services do not increase. A probable explanation for this is that industries in the urban region are highly capital intensive. But this process should lead to significant unemployment, but that has not been the case, since the overall male work participation rate has not

declined. Male main workers leave agriculture but do not get absorbed in industry or services of the urban sector. Yet they are not unemployed. At present we are unable to understand where they are employed. We may suggest one possible explanation. In the NIC, there is a division called "activities not adequately defined". We have not included this division in our definition of the tertiary (service) sector. This is probably where the migrant labour from agriculture is employed.

SUMMARY

In all the States we find that urbanisation has failed to affect male work participation rate. Therefore the traditional and social pressure, compelling a man to work operates universally as the prime guiding force to motivate him to find employment. Urban growth and its associated difficulties of work by and large fail to dampen this motivation.

Female work participation rate tends to be adversely affected by urbanisation, although different aspects of urbanisation seem to have this negative effect on female work participation rate in different States. In Orissa and Karnataka, urban accretion has a significantly negative effect on female work participation rate, in Rajasthan it is general urbanisation while in Punjab it is urban crowding which has the same effect.

By and large, the male child work participation rate remains unaffected by urbanisation in all four State with the exception of Orissa where urban accretion has a significant negative

effect.

Regarding the sectoral work participation rates for male main workers, we find that urbanisation has a significantly negative effect on the primary sector work participation rate in all the States except Punjab. On the other hand the work participation rates in secondary and tertiary sectors have by and large been positively affected by urbanisation, here the exception being Karnataka.

In the two backward States of Rajasthan and Orissa, we see that urban growth has attracted rural worker away from an impoverished agriculture to town, mostly big cities and have offered them employment in the industrial and service sectors. In these two States, we can sense that urban growth has been accompanied by impoverishment of the rural surroundings. The growth of very large cities has little or no beneficial effects on the surrounding rural regions. The adult male migrants who have moved out of an impoverished agriculture to the urban centres have left their families behind in their rural homes.

In the agriculturally affluent State of Punjab urbanisation has not occurred simultaneously with the impoverishment of the surrounding rural regions. Huge cities are devoid of rural linkages, but in the surrounding regions small towns have flourished on their own right. The latter have linkages with rural regions which have not been adversely affected.

In the case of Karnataka, we have not been able to draw any definite conclusion that would have enabled us to compare its experience with that of the other three States.

We are tempted to conclude that in regions where agriculture is poor, urban growth does not help towards rural development, but further enhances rural poverty. On the other hand, regions with a prosperous agriculture tend to further benefit from urbanisation, both on the urban industrial front and on the rural agricultural front.

TABLE 5.1: Regression Results for Orissa

Dependent Variable	Intercept (std err)	Independent Variables			R ²
		URB1 (t-value)	URB2 (t-value)	URB3 (t-value)	
WPRM	57.47 (3.73)	-5.45 (-0.54)			0.026
WPRM	57.06 (3.72)		-0.0001 (-0.57)		0.029
WPRM	57.95 (3.18)			-0.000002 (-2.13)**	0.291
WPRF	22.21 (11.24)	0.29 (0.01)			0.000
WPRF	22.11 (9.16)		-0.00003 (-0.56)		0.000
WPRF	26.10 (9.16)			-0.000009 (-2.36)***	0.336
WPRCH	9.07 (3.83)	-6.34 (-0.61)			0.033
WPRCH	8.50 (3.85)		-0.0001 (-0.49)		0.022
WPRCH	9.49 (3.25)			-0.000003 (-2.17)**	0.300
WPRMP	48.01 (5.40)	-38.31 (-2.69)***			0.397
WPRMP	45.50 (5.27)		-0.0008 (-2.52)***		0.366
WPRMP	46.26 (4.98)			-0.000007 (-3.06)***	0.459
WPRMS	1.99 (0.99)	20.07 (7.44)***			0.834
WPRMS	3.56 (0.97)		0.0004 (7.72)***		0.844
WPRMS	3.99 (2.18)			0.000002 (1.69)	0.207
WPRMT	5.94 (1.73)	8.26 (1.77)*			0.221
WPRMT	6.82 (1.91)		0.00009 (0.80)		0.055
WPRMT	6.21 (1.35)			0.000002 (3.35)***	0.504

All regression have d.f. = 11

*** indicates statistical significance at 5% level

** indicates statistical significance at 10% level

TABLE 5.2: Regression Results for Rajasthan

Dependent Variable	Intercept (std err)	Independent Variables			R ²
		URB1 (t-value)	URB2 (t-value)	URB3 (t-value)	
WPRM	52.47 (3.18)	-4.09 (-1.20)			0.057
WPRM	53.18 (3.83)		0.0013 (-1.55)		0.186
WPRM	51.61 (3.20)			-0.0000003 (-1.03)	0.042
WPRF	25.91 (7.22)	-16.09 (-2.07)**			0.152
WPRF	25.86 (7.56)		-0.003 (-1.36)		0.071
WPRF	22.26 (7.62)			-0.0000008 (-1.18)	0.055
WPRCH	1.28 (1.06)	1.36 (1.19)			0.055
WPRCH	2.43 (1.02)		-0.0005 (-1.92)*		0.133
WPRCH	1.67 (1.09)			-0.0000000 (-0.45)	0.008
WPRMP	43.68 (6.33)	-22.40 (-3.29)***			0.311
WPRMP	40.13 (7.53)		-0.0001 (-0.76)		0.023
WPRMP	38.72 (7.03)			-0.000001 (-2.05)*	0.149
WPRMS	3.84 (1.19)	7.51 (5.85)***			0.588
WPRMS	5.70 (1.86)		0.00005 (0.13)		0.000
WPRMS	5.55 (1.67)			0.0000003 (2.39)***	0.193
WPRMT	4.69 (1.13)	13.38 (11.05)***			0.836
WPRMT	6.53 (2.65)		0.001 (1.55)		0.091
WPRMT	7.82 (2.49)			0.0000005 (2.42)***	0.196

All regression have d.f.=24

*** indicates statistical significance at 5% level
 ** indicates statistical significance at 10% level

TABLE 5.3: Regression Results for Punjab

Dependent Variable	Intercept (std err)	Independent Variables			R ²
		URB1 (t-value)	URB2 (t-value)	URB3 (t-value)	
WPRM	53.02 (2.76)	1.64 (0.30)			0.009
WPRM	53.91 (2.77)		-0.00006 (-0.09)		0.001
WPRM	53.49 (2.77)			0.000001 (0.23)	0.005
WPRF	8.70 (2.17)	-6.52 (-1.52)			0.187
WPRF	10.93 (1.95)		-0.0012 (-2.29)***		0.343
WPRF	6.91 (2.24)			-0.000005 (-1.22)	0.130
WPRCH	0.006 (0.00)	0.008 (1.69)			0.221
WPRCH	0.007 (0.003)		0.0006 (0.59)		0.024
WPRCH	0.008 (0.002)			0.000006 (1.10)	0.109
WPRMP	39.64 (5.59)	-20.05 (-1.81)			0.247
WPRMP	36.71 (6.29)		-0.0012 (-0.70)		0.047
WPRMP	34.35 (5.72)			-0.00001 (-1.63)	0.210
WPRMS	3.01 (1.81)	14.56 (4.06)***			0.623
WPRMS	5.56 (2.18)		0.0008 (0.99)		0.090
WPRMS	7.12 (2.33)			0.000009 (2.44)***	0.372
WPRMT	9.12 (1.56)	8.54 (2.77)***			0.434
WPRMT	10.32 (1.97)		0.0005 (1.01)		0.093
WPRMT	11.28 (1.45)			0.000008 (3.24)***	0.512

All regression have d.f. = 10

*** indicates statistical significance at 5% level

** indicates statistical significance at 10% level

TABLE 5.4: Regression Results for Karnataka

Dependent Variable	Intercept (std err)	Independent Variables			R ²
		URB1 (t-value)	URB2 (t-value)	URB3 (t-value)	
WPRM	55.42 (2.28)	-1.84 (-1.25)			0.084
WPRM	54.41 (2.37)		0.00009 (0.30)		0.005
WPRM	55.03 (2.30)			-0.000001 (-1.08)	0.064
WPRF	24.73 (5.02)	-3.88 (-1.20)			0.077
WPRF	25.97 (5.02)		-0.00007 (-1.21)		0.079
WPRF	24.28 (4.82)			-0.000005 (-1.74)**	0.152
WPRCH	8.81 (2.27)	-1.82 (-1.24)			0.084
WPRCH	7.66 (2.35)		0.001 (0.44)		0.011
WPRCH	8.40 (2.30)			-0.000001 (0.99)	0.054
WPRMP	44.32 (4.84)	-16.08 (-5.14)***			0.609
WPRMP	40.40 (7.65)		-0.00006 (-0.62)		0.022
WPRMP	40.95 (5.54)			-0.00001 (-4.02)***	0.487
WPRMS	5.62 (10.8)	10.26 (1.47)			0.113
WPRMS	13.66 (11.23)		-0.001 (0.84)		0.040
WPRMS	8.16 (11.15)			0.00005 (0.98)	0.053
WPRMT	8.89 (17.15)	11.15 (1.01)			0.056
WPRMT	21.11 (17.09)		-0.002 (-1.06)		0.062
WPRMT	11.86 (17.48)			0.000005 (0.58)	0.019

All regression have d.f. = 17

*** indicates statistical significance at 5% level

** indicates statistical significance at 10% level

CHAPTER 6

SUMMARY AND CONCLUSIONS

We had begun our study with the objectives of analysing the characteristics of urbanisation in India, the ways in which various aspects of urbanisation affect various aspects of work force, and the various characteristics of work force. In this chapter we attempt to bring together the results that our study has yielded, and the conclusions they have prompted us to draw.

We divide this chapter into two sections. In the first section we summarise the results of our study, and in the second section we list the broad conclusions.

SUMMARY OF FINDINGS

In this section we shall first discuss some broad characteristics of urbanisation that our study has revealed. This will be followed by a discussion of our results on the interaction of urbanisation and work force. Finally we relate our results on the characteristics of work force.

Urbanisation

In each State of our analysis, we have picked out districts which show a relatively high degree of urbanisation by one or more of the indicators by which we measure it. We have tried to explore why and how these districts have shown a high urban growth and the relation which these urban areas have with the rural surroundings.

From the districts that we have chosen in the four States

we see that the urbanisation patterns have shown considerable variation from region to region depending on the intrinsic characteristics of the region.

To the extent that we can generalise we can identify three different patterns of urban growth in the more urbanised districts of our four chosen States.

(1) Overall urbanisation in some districts has occurred because of the existence of a very few towns that are disproportionately larger than the other towns of the district. Smaller towns seem to be very unimportant. Agriculture in the adjoining rural region seems to be impoverished and stagnant. The core of the urban economy seems to be unrelated to the adjoining rural economy. The rural regions do not act as markets for any significant part of the products of the urban economy. Nor is it able to supply to the urban economy the skills and raw materials it needs.

(2) Certain other districts show high degree of urbanisation because of the existence of a few colossal towns whose economy has little to do with that of the rest of the district. But in this case medium and small towns and the adjoining rural regions are not impoverished by the huge towns. Medium and small towns as well as the rural regions are not impoverished. The latter flourish on their own right often through symbiotic relations with each other.

(3) In yet other districts urbanisation has been high because of a large number of small to medium towns, whose sizes don't significantly differ. In this category we also place

districts where there are large, medium, and small towns, with no significant size disparity.

In the first category we can place the following districts -
- Jaipur and Jodhpur in Rajasthan, Bangalore in Karnataka, Sundargarh and Cuttack in Orissa.

The district of Jaipur is the leading industrial district in Rajasthan, most of the industries being located in and around the city of Jaipur. The industries mainly manufacture engineering and electrical goods which are not likely to have rural linkages. Jodhpur has grown and flourished as a trading centre. Therefore its economy has little to do with the rural agricultural economy except marketing agricultural goods which is unlikely to be any major part of the total volume of trade that takes place in Jodhpur.

Bangalore is the most urbanised district in Karnataka. Bangalore city dominates the industrial map of the district. The main industries are fabrics, iron goods and electrical equipment. Industrial townships have grown contiguous to the city. Being the State capital it has also flourished as an important centre for administration, trade and transport. All this is likely to have little to do with the rural economy of the district.

Sundargarh is highly urbanised because of the Steel Township of Rourkela which is unlikely to have linkages with the adjoining rural areas. The district of Cuttack has the same features. The high degree of urbanisation is dominated by the city of Cuttack whose economy is based on industries (iron ore, steel pipes, filigree works) unlikely to have rural-agricultural linkages.

In the second category we may place the districts of Ludhiana and Amritsar in Punjab, and the district of Puri in Orissa.

The city of Ludhiana has grown head and shoulders above the other towns in the district. Its economy centres around industries (bicycles, hosiery, auto parts) that have no substantial agricultural base. But the rural hinterland is linked to industries in a host of smaller towns of the district. They manufacture products like jam, pickles and fuelwood. Amritsar city is huge and towers over other small towns of the district. Amritsar city has grown around urban-based industry (textiles, machine parts, pharmaceutical), trade and commerce, and religious and historical importance. Its economy is unlikely to have a rural base. The industries in the smaller towns (e.g., cotton cloth, cycle tyres, cotton ginning, hand woven cloth) are capable of providing employment to unskilled and semi-skilled labour from the rural regions. On the other hand the district is very prosperous in agriculture. The high quality of marketing facilities in Amritsar help to transport and market the rural-agricultural products. In the district of Puri, the town of Puri is very large but its industries are rural and agro-based eg, sea-prawns, seashells and ayurvedic medicine.

Urbanisation and Work Force

By and large, in all the four States male work participation rates have not been significantly affected by urbanisation. This shows that there are other factors that determine the work

participation rate for men.

In the case of female work participation rate the effect of urbanisation has not been overwhelmingly negative. Different aspects of urbanisation have had a negative effect on different States, perhaps revealing a difference in their initial socio-economic situations. Urban crowding has a negative effect in all states except Karnataka. In Karnataka disproportionate urban growth has a negative effect and in Rajasthan, the ratio of urban to rural population has a negative effect. This shows that by and large urbanisation has not had a substantial effect on the female population who have remained where they were in their rural homes. This is especially true where a handful of very big towns exist in the presence of much smaller towns (we know that the population of these huge towns has a large proportion of adult males.) Only where a large population has crowded into a small urban area existing females in the urban job market have been out-competed by men.

In the case of male child workers urbanisation seems to have almost no effect. This on the one hand means that the economic activities that have grown with urbanisation have not employed child labour to any significant extent. On the other hand this also means that the educational attainment and the social advancement and awareness that is likely to accompany urbanisation had little dispersing effect on the surrounding rural regions. If urban centres had acted as nuclei spreading social awareness, there might have been a significant decline in the incidence of child labour in the rural agricultural regions.

In all the States that we have analysed, except in Punjab, urban growth in all its dimensions has had a negative effect on the male work participation rate of main workers in the primary sector. This means that as a town grows and develops, male main workers move away from the agricultural sector in search for employment in the industrial or tertiary sectors. Urbanisation has not created any employment opportunities in the primary sector which appears to be unremunerative. In Punjab however urbanisation has not depressed the male work participation rates for main workers in the primary sector. This shows that in spite of urbanisation, agriculture has remained remunerative. Also, (when viewed together with the fact that urbanisation has a positive effect on the work participation rate of male main workers in the secondary and tertiary sectors) the growth of the urban economy has created employment opportunities in agriculture. We can draw this conclusion because on the one hand industrial and service sector employment has grown, while on the other hand agricultural employment has been able to remain the same. This leads us to believe that the economy in the urban regions of Punjab has grown hand in hand with the grassroots of the rural economy.

With the exception of one State (Karnataka), urbanisation has been associated with a rise in the work participation rate of male main workers in the secondary and tertiary sectors. This shows that in urban areas industrial activity has generated employment. Employment in services have grown mainly as a response to industrial growth in the city, and occasionally on

its own.

Other Characteristics Influencing Overall Work Participation Rate

In each State of our study we have picked out the districts which have higher work participation rate for males and females and have tried to analyse the extent to which factors other than urbanisation, that might have led to a high work participation rates.

Broadly we see that in every State there is only very slight variation in the inter district male work participation rate. This shows that whatever the socio-economic circumstances, the drive for men to seek work remain the same.

The sex ratio of a district does not seem to have a very unambiguous effect on overall work participation rate for both men and women.

Districts with a lower literacy rate tend to have a higher work participation rate for both men and women. This leads us to believe that higher education tend to make people shun menial and unskilled jobs and compete for skilled and dignified jobs even in the face of unemployment.

Wherever we see that the agricultural sector of a district is larger than that of other districts, the overall work participation rate (for males and females) is also higher in that district. This is not true for the industrial and service sector of the economy. This supports the fact that agriculture is indeed the prime sector of the economy and generates the largest volume of employment.

Certain intrinsic characteristics of a district may also affect its overall work participation rate (male and female). For example, the prosperity of a district may lower its work participation rate especially for women. Women tend to have a higher work participation rate where forest resources are in plenty, and climate and vegetation are friendly. A history of political turbulence in a district breeds a social bias against women going out to work. Districts where rainfall is scanty and dependent on minor irrigation, agriculture requires physically harder work, generally unsuitable for women. Here the male work participation rate tends to be higher.

GENERAL CONCLUSION

The overall work participation rate for males remains largely unaffected by urbanisation and other socio-economic factors. The prime incentive for a man to work is the pressure on him to support himself and his family.

Regions with a backward and unremunerative agriculture remain at best unaffected by urban development except that adult male main workers leave agriculture in quest for urban jobs.

Regions with a prosperous agriculture tend to benefit from urban growth by way of employment generation, both in industry and services, and agriculture. Employment in industry and services grows, and at the same time, employment in agriculture does not decline. This means that new employment opportunities have been created in agriculture as a response to urbanisation.

The key to this difference in the experience of the urbanisation process seems to lie in the presence or absence of linkages (forward or backward as the case may be).

Where most of the urban economic activity has no link with the surrounding rural region, urban centres are very large and developed and the adjoining rural area is at best unaffected by the urban development.

Where urban economic has linkages with the rural surroundings, for example, if agricultural raw materials and rural labour are demanded by the urban industries, and rural population is affluent enough (because of agricultural prosperity) to buy some of the urban industrial produce, urban and rural development tend to complement each other.

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