INDUSTRIAL GROWTH AROUND METROPOLITAN CITIES- THE CASE OF DELHI

Dissertation submitted to the Jawaharlal Nehru University in partial fulfilment of the requirements for the award of the Degree of MASTER OF PHILOSOPHY

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I, Vinoj Abraham certify that the dissertation entitled **"INDUSTRIAL GROWTH AROUND METROPOLITAN CITIES – THE CASE OF DELHI"** submitted by me for the award of the Degree of **Master of Philosophy** is my bonafide work and may be placed before the examiners for evaluation.

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CONTENTS

CHAPTER 1

INTRODUCTION

Economic well being of the people in a country is dependent on growth as well as distribution of income. Growth without equitable distribution accentuates income and employment disparities among different classes of population and among different regions. Widening regional disparities in a developing economy causes 'backwash' effects that are generally much stronger than the 'spread' effects, across the regions. The developed pockets in an economy would be in an advantageous position since it could extract resources from the less developed regions. This creates a circular causation of widening regional disparity. If this process is not checked through active state intervention and corrective measures are not taken the consequences would be structural backwardness of some regions. It could also create social and political rift within a region which may be manifested through social unrest and violence.

The colonial rulers had left behind a legacy of 'Enclave' type of growth pattern within India. They had developed a few metropolitan cities like Calcutta, Bombay and Madras that would act as satellites of the colony. These were port cities that functioned as production and collection points from where goods could be transported to the mother country. At the eve of independence India inherited an economy that

was bestowed with extreme regional inequalities with developed metropolitan cities on one side and a poverty stricken under developed nation on the other. To control and revert the regional imbalances had been one of the objectives of planning since the 1st plan period. This goal was to be achieved through state intervention in many sectors like rural development, agricultural development industrial development, development of backward areas etc. however industry being the most dynamic and productive sector of the modern economy it acquired a special place in the process of planning for regional development.

The government introduced many programmes for industrial dispersal through its policy of industrial location like establishment of public sector undertakings in backward areas, imposing location specifications for private industries through licensing, rural industries development etc . in various plans. However the studies done by different scholars (Goldar and Seth in 1989, Dhalokia, H.R, Shetty.S.L.in 1982) reveal that after a brief period of declining regional disparities in Industrial location from the 50's to late 60's there had been widening of regional disparities. Industrial growth is getting concentrated to developed states like Maharashtra, Gujarat, Andhra Pradesh and Tamil Nadu While the under developed states like Bihar, M.P. and Orissa continue to be backward and poor .

Along with widening regional disparities another trend in the industrial location is the concentration of industrial activity in and around large cities (Kundu, A; (1986); Kundu. A and Sharma R.K., (1983);). Within the states there has been concentration of industrial activity within a few large cities due to their industrial base and incentives and subsides provided by the state governments. This has widened the intra regional disparities.

However, in the metropolitan cities, i.e., million plus cities, there has been a reversal of trend in the growth of workers within the cities. During the period 1971-81 the metropolitan cities recorded an average growth rate of 9% of total workers but during 1981-91 there was a negative growth of -9%.[1] This decline in workers was most evident in the case of manufacturing activity within metropolitan cities. This phenomena is not due to dispersal of industries to the other regions of the country as there is no evidence for dispersal of industrial activity to the smaller towns. It is possibly due to the shifting of the industries from the city to the peripheries of the city. The industrial location policy specifies that for establishing industries within a radius of 25 kms of the city limits the establishment has to acquire a licence from the government.

Apart from the national policy the local governments are also trying to decongest the large cities through various means like slum clearance,

[1] Calculated form Census tables, 1991, 1981, 1971.

city beautification programmes etc. The Master plans of various metropolitan cities also try to impose restrictions on the growth of industrial activity in the city. The environmental lobbies that have sprung up in the cities are also pressurizing the city authorities to push out industrial activity from within the city. Thus 'the idea of city' is changing form being centres of productive industrial activity to that of beautiful residential complexes with surging trade and commercial activity that would meet the needs of the affluent sections of the society.

The growth of industries at the periphery of the city gives the entrepreneur with double advantage. On the one hand, the manufacturing activity can be done at the peripheries of the city which would evade him the problems of location policy and environmental specifications at the same time it is possible to have his residence and corporate office within the city itself . Also his products could find market in the city. Thus he is able to get the best of both. With the liberalisation of all location policy regulations under the new economic policy, except that of the policy on metropolitan cities, irrespective of the size of the factory whether small or large, whether Indian owned or foreign owned it is only natural that large firms would get located in the peripheries of the city, competing directly with the smaller firms. The MRTP firms and large MNC's

could establish plants at the periphery to expropriate the advantages accrued due to the new liberalized policy.

But the condition of the workers in the city and its periphery is very alarming. With the decline of manufacturing activity in the cities the share of workers engaged as casual workers and in the informal sector has increased. The urban employment has been growing faster than the rural areas during 1972-87.. but it had been largely due to the growth of informal sector (Kundu.A, 1993). Informal sector provides employment at low wage rates for unskilled labour. The growth of informal sector is mainly due to self employment at household level and 'subcontracting' of work by the large firms at the outskirts of the city to the small petty service shops in the city which pay very low wages. This is another face of exploitative tactics used by the entrepreneurs to push further their advantages. While it creates wider disparities with the lower income group worker and middle/upper income group.

In the periphery of the city, the capitalist employs labour at lower wages in the firms as he is able to exploit the unorganised labour market. The firms that are established at the peripheries are not subjected to pollution laws as stringently as in the city. Thus it is mostly the polluting industries that would find place in the peripheries. The worker has to survive at the peripheries under poor working conditions. They are denied of basic amenities like tap water,

electric power, schools and other facilities that were more freely and readily available in the cities . Thus the peripheries of the city are facing degeneration.

Given this perspective, in this study, it is proposed to analyse the structure of industrial workers in and around the city of Delhi. Delhi has been chosen as it is one of the industrialized metropolitan cities and also the national capital.

1.2 STATEMENT OF PROBLEM

The metropolitan city of Delhi has experienced a decline of the growth rate of manufacturing workers during 1981-91 compared to the earlier decades. The decadal growth rate of 1981-91 was 28.72% while it was 103.07% in 1981-71.[2] The decadal growth of Non- Household manufacturing workers in the urban areas was by 110.56% while in rural areas it grew by only 16.14% in 1981-71. But during 1991-81 the rural areas grew by 136.04% while the urban growth declined to 23.62%. There is a shift of the manufacturing activity, particularly non-household manufacturing to the outskirts of the city. The growth of industrial workers at the outskirts suggest the growth of industrial activity at the peripheries of the city. The Industrial location policy for industries specific to metropolitan cities, the Master Plans of the city and the regional plans for National Capital Region discourage the

[2] Calculated from census tables, 1991,1981,1971

growth of manufacturing industries in the city. The judiciary has taken an active position by ordering the non-confirming (to the pollution norms) industries to either shut down or find alternate location outside Delhi. All these factors may be causing the decline of industrial activity within the city while it is picking up momentum in the peripheries of the city.

The growth of the manufacturing industries in the periphery could cause the decline of traditional industries in the periphery region. The new industries that find place in the periphery could be the non-confirming industries of the city. While within the city as well as in the periphery there could be growth of the informal sector. Within the city this is due to the 'Subcontracting' of work given by the large firms in the peripheries to the petty service firms in the city which are not included in the 'Factory Act'. Here the workers are not covered under any kind of social safety nets like provident funds., gratuity etc. They are left at the whim of the owner of the firm. Another form of informalisation takes place is through 'self employment' at the household level.

At the peripheries there could be de-structuring of industrial activity and concentration of workers into a few industrial activities that would promote elitist consumption needs in the city.

In the light of this phenomena, it would be proper to analyse the structure of industrial workers within Delhi and its periphery.

1.3 OBJECTIVES OF THE STUDY

From the problem set above, the following objectives are put forward.

- To study the changes in the composition of manufacturing workers in the Delhi U.T with emphasis on the issues of subcontracting of work, informal sector growth and growth of pollution related industries

- To study the composition and its changes of the manufacturing sector in the peripheries of the city focussing on the type of industries that are newly emerging at the peripheries.

- To compare the composition of the industrial activity and its changes over time, in the city to that of the periphery, in order to explore the kind of manufacturing activities that are shifting from the city to the periphery .

- To explore the interrelationships among the various regions of the periphery and the city in order to bring out the emerging trends in manufacturing activity in the whole region.

1.4 SCOPE OF STUDY

The study is to analyze the core-hinterland relationship in industrial activity. Delhi U.T was taken as the core region as it one of the largest metropolitan cities in the country. The districts that lie in the periphery of the city was taken as the hinterland. They are Ghaziabad, Meerut and Bulundshahr in U.P, Alwar in Rajasthan, Mahendragarh, Karnal, Sonepat , Rohtak, Gurgaon and Faridabad in Hariyana. These districts also are part of the National Capital Region (NCR) of Delhi.

The period of study is taken from 1961 to 1991. Thirty years period is sufficiently long to analyse the dynamics of core-hinterland relation. This study is based on secondary sources. Census being the only data source at district level and the last year of Census being 1991 further development after 1991 has not been attended to.

1.5 METHODOLOGY AND DATA SOURCES

This study is based on secondary data. For the purpose of analysis the three digit classification of National Industrial Classification(NIC) was used. The data was collected from General Economic tables of various census publications for the periods 1961, 1971, 1981 and 1991. The classification of NIC 1991 is followed. There are some differences in the classification of manufacturing sector in the earlier NIC classification for 1971 and 1981. In 1961 a system called 'Indian

Standard Industrial Classification' (ISIC) was followed. All these three systems namely ISIC-1961, NIC-1971 and NIC-1991 has been made comparable at three digit level and classified as per NIC 1991. In making the data comparable there had been some limitations. In some classes of 1991 a corresponding class may not be there in 1961, 1971, 1981. In this case, only the 1991 has been taken. Similarly, more categories of industries were introduced in the classification of 1991. In this case the classsification of 1961 is followed and all the items of 1991 that correspond to the other Census years are clubbed together. The table for comparison between the various census years is added in the Appendix-I

The data is taken for the districts of Delhi U.T, Meerut, Ghaziabad and Bulandshahar in U.P, gurgaon, Faridabad, Rohtak, Sonepat, Mahendragarh and Karnal in Haryana and Alwar in Rajastan.

The districts of Ghaziabad, Faridabad, and Sonepat were formed after 1971. Hence separate data for these districts is available only for 1981 and 1991. To include these districts in the analysis they have been added to their original districts. So the analysis pertains to Eight units

(1) Delhi U.T (2) Meerut + Ghaziabad(3) Bulndshahar (4) Gurgaon + Faridabad (5) Rohtak + Sonaput (6) Mahendragarh (7) Karnal (8) Alwar.

To study the trends in the structure of workers in all metropolitan cities the 9 digit classification of workers were taken for all the 23 metropolitan cities in 1991. The time period from 1971 to 1991. The data source is the Primary Census abstract and general population Tables' for the three Census years 1971, 1981 and 1991. The percentage share of workers in each of the nine digit category was calculated to analyze the trends over time.

To study the trends and composition fo manufacturing workers in Delhi and its periphery the three digit Level NIC classification was used for the periods 1961, 1971, 1981 and 1991. The percentage share of workers in each category was calculated for the eight districts units. The share of household workers and non-household workers in each class was also taken. The percentage of household workers to total workers in each class was calculated to analyze the structure of household workers and non-household workers in each district. They were further categorised into two classifications based on input and use. These classifications were suggested by Ahluwalia1.J in her book 'Industrial growth in India (1985)'. Some modification have been made to this system to suit this study.

To analyse the inter dependencies of the districts temporally as well as spatially a set of correlation matrices were calculated. Spatial correlation matrices were calculated for all districts for the three period 1961, 1971 and 1991 with household workers, non-household

workers and total workers as the variables. Correlation for 1981 could not calculated as district level data at three digit for 1981 is not published for h.h and n.h.h separately. Similarly temporal correlates were calculated for each districts.

1.6 CHAPTERISATION SCHEME

The introduction chapter gives the out line for the research second chapter provides review of relevant literature. The third chapter overviews industrial location policy. The fourth chapter deals with trends and structure of workers in metropolitan cities. It analyses the composition of workers by taking the average of Nine digit classification of workers for all the 23 metropolitan cities.

The fifth chapter provides a broad outline fo the demographic pattern and trends in Delhi U.T and its peripheral districts.

The sixth chapter analyses the trends and structure of manufacturing sector workers in Delhi and its hinterland using the 'input based' and 'use based' classification.

The seventh chapter tires to bring out the interdependencies among the districts both spatially and temporally using correlation analysis.

The last chapter provides the conclusions that are drawn from the analysis.

CHAPTER 2

DEVELOPMENT DYNAMICS AND REGIONAL IMBALANCE IN INDIA : AN OVERVIEW

Balanced regional development has been an objective of planning from the earliest plan periods. Various policies were formulated to achieve this goal. However, the regional disparities seem to be widening after an initial phase of narrowing down till the early 1960s.

2.1 REGIONAL DISPARITIES IN INDIA

The study done by Ashok Mathur (Mathur A., 1983)[1] on the period 1950-51 to 1975-76 puts forward that after an initial decline there has been a continuous increase in the regional inequalities since 1955-56, though its pace was slow during 1960s. The income from Agriculture sector and Services sector displayed a marked narrowing down tendency till the early sixties thereafter regional disparity started widening, on the other hand, industry based secondary sector showed a decline in the trend of disparity.

In a more recent study done by the same author (Mathur, A)[2] he concludes that the regional disparities reveals a rising trend in the case of per capita state domestic product from mid sixties till 1980-

[1] Mathur. A., (1983), "Regional Development and Income Disparities in India : A Sectoral Analysis Economic Development and Cultural Change

[2] Mathur, Ashok, "Regional Economic Development and Policy in India in 'Regional perspectives in a developing economy edited by Chadha, G.K.

81. This is also true for consumption per capita and incidence of poverty. While government policy has helped in poverty reduction to some extent they have been more effective in better off states than in the poor states.

Intra regional disparity, in this case the disparity among districts within each state, show a positive relation to intra-development, i.e. as a state is more developed the levels of intra regional disparity is wider. The most disparate levels of development occurs within Bengal, Maharashtra and Tamil Nadu all of which are well developed states. Most equitably distributed are Assam, Orissa and Kerala of which the first two have the lowest per capita income among states. Employment generation among states, also show widening gap with greater employment possibilities opening up in the better off states.

S.L. Shetty's (Shetty, S.L., 1978)[3] study on the economy has also argued in the same lines that there had been widening of regional disparities since the 1960s. he argued that the agricultural development in the 1960s has begun to hinder the growth power through three types of imbalances :

(i) Accentuation of disparity in economic development between region and within regions, between irrigated and non irrigated areas.

[3] Shetty, S.L. (1978), Structural Retrogression in the Indian Economy since the Mid Sixties, EPW, Annual Number, February 1978.

(ii) Further widening of inequality in the distribution of income and wealth among households within the farm sector.

(iii) Gradual extension of farm mechanization resulting in reduced employment per unit of output.

2.2 INDUSTRIAL GROWTH : INTERREGIONAL CONCENTRATION IN INTRA-REGIONAL DISPERSAL

Dispersal of industries to the underdeveloped regions was one of the prime policy option open to the planners to reduce regional dispariteis as industrial sector is the most dynamic sector of the modern economy. But evidence show that disparities in regional industrial growth had been widening.

The study on regional distribution of factories by S.L. Shetty (Shetty, S.L., 1982)[4] finds that the statewise distribution of factories brings out the nature of extreme concentration of factories in a few states. The four industrialized states of Maharashtra, West Bengal, Gujarat and Tamil Nadu together had 44.7% of factories, 37.9% of the fixed capital and 40.8% of productive capital. While Bihar had only 5 to 6% share of all attributes whether relating to employment or output. The five above mentioned states and U.P, M.P., A.P. and Karnataka had a share in the Value added at about 4.0% or more, each. These nine

[4] Shetty, S.L. (1982), "Industrial Growth and Structure", EPW, 1982.

states accounted for 78.4% of total number of factories, 79.0% of fixed capital and productive capital, 82.4% of factory employment. And over the years the concentration in a few states continue to be rising. Taking the 23 industrial groups, Maharasthra, occupies the top position in 16 groups. U.P. dominated food products, while cotton textiles production was concentrated in Maharasthra, Gujarat and Tamil Nadu. They also account for 70.6% of the Value added in 'chemical products'.

The growth experience of Indian manufacturing in the period since 1956, was divided into three distinct sub periods by Goldar and Seth. They were 1956-65 (period of rapid industrial growth) 1965 to 1975 (period of industrial stagnation) and finally from 1975 onwards (period of recovery and acceleration) (Golder, B and Seth, V., 1989)[5]. Comparing the growth rates for the first two sub-periods all states experienced a deceleration in the rate of industrial growth after the mid-sixties. The extent of deceleration however varied from state to state. Industrial growth rate fell sharply in Orissa, West Bengal, Kerala and Rajasthan, while Andhra Pradesh and Maharashtra experienced only a marginal diminution in the rate of industrial growth. During the period of recovery after mid 1970s the growth rate rose sharply in Orissa, Bihar, West Bengal and Uttar Pradesh while Kerala, Madhya Pradesh and to a lesser extent Karnataka and Andhra

[5] Goldar, B and Seth V., (1989), Spatial Variations in the Rate of Industrial Growth in India", EPW, June 3rd.

Pradesh continued to decelerate beyond 1975-76. Thus inter temporal analysis of growth rates provides evidence for widening regional disparities in industrial growth.

If one looks at Net Value added in industry the southern states, without exception have grown at a rate lower than the national growth rate during the period 1979-84 (Dhalokia, H.R., 1989)[6]. The northern states, except Rajasthan and Punjab, on the contrary have grown at a rte higher than the national growth rate during the same period. Deliberate policy alone can give rise to such sharp regional differentiation. Again the Southern region (plus West Bengal and Assam) has a considerably above average capital productivity in manufacturing but has significantly less capital per worker. The northern region, on the contrary, has high capital per worker but is far below the national average in terms of capital productivity. One of the reasons for high capital intensity in manufacturing of the northern region during the mid-eighties is that the north has secured a much larger share in the investments in the new undertakings of the central government.

While interstate regional disparities had been widening there had been also a case of concentration of industries around large cities. The intrastate rural to urban migration is growing faster than the

[6] Dhalokia, H.R., Regional Aspects of Industrialization in India", EPW, Nov 18, 1989

interstate component (Kundu. A, 1986)[7]. It suggests that urban centres are drawing larger proportion of migrants from within the state. The fast rate of urban growth in the backward states of U.P, Orissa, Rajasthan and M.P. can be explained by this phenomenon. Each state has identified one or two industrial centres and provided subsidized input at these places only. This has sharpened intrastate inequality and encouraged migration of people from rural to urban areas within the state.

Despite evidences of general rise in regional disparity, interstate migration in particular and migration in general has declined (Kundu, a. and Gupta, Shalini, 1996)[8]. The developed states in the 1990s report a much lower percentage of inmigrants than in the previous decades. This is probably due to the rise of a few large cities – usually the state capitals – emerging as centre of industrial investment as they had an advantage of having an industrial base and high level of basic services while very little investment go to the smaller town. This resulted in people moving from backward areas to developed areas. While industries aregetting concentrated to urban areas there is also a case of dispersal of industries from the large metropolitan cities to its peripheries.

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[7] Kundu, A., (1986), "Migration, Urbanization and Inter regional Inequality", EPW, Nov 15th, Vol. XXI, No. 46.

[8] Kundu, A. and Gupta, Shalini (1996), Migration, Urbanization and Regional Inequality, EPW, December 28.

The industrial base of the three largest imperial cities of India, namely Calcutta, Bombay and Madras, had reached a saturation level within the municipal limits and a few manufacturing units moved out of these centres to the neighboring areas even before 1961 (Kundu, A., and Sharma R.K., 1983)[9]. The same process of industrial dispersal although weak and spatially fragmented seems to be in operation during the sixties in other regions as well.

The growth of large metropolitan cities has been curbed by physical planning controls on location of economic activities, urban land use through master plan etc. (Kundu, a;, 1997)[10]. As a result most of the industries are coming up in the rural settlement or small towns around a few big cities. This is primarily because of easy availability of land, access to unorganised labour market and lesser awareness and less stringent environment regulation in these settlements.

2.3 TRENDS AND PATTERNS OF EMPLOYMENT IN URBAN INDIA

The urban employment had been growing at a faster pace than rural areas during the period 1972-87 (Kundu, A., 1993)[11]. However, this had been largely due to the growth of informal sector. The rapid growth of short term jobs during this period points to concentration of work within informal sector. Another significant trend is the casualisation of urban male work force. The sectors that have relatively higher

[9] KUNDU, A and SHARMA, R.K (1983) "Industrialisation, Urbanisation and Economic Development in India"

[10] Kundu, A, (1997), "Trends and Structure of Employment in the 1990s", EPW, June 14th.

[11] Kundu. A (1993) "Growth and Changing structure of Urban Employment in India" IJLE, Vol. 36

growth rates of employment during 1972-89 are electricity, gas etc, construction and transport. Manufacturing which claims about 25% of the workforce has registered a decline in its employment share in the total urban work force. Growth in the urban employment is partly in the modern dynamic services activities including electricity, gas etc catering to the needs of the urban elites many of the manufacturing, trading and service activities that have reported high employment growth have a significant component of self employed/casual workers.

An overview of the literature by different scholars suggests that for widening regional disparities

The percent of workers in manufacturing has gone down significantly in urban areas during the period 1977-79 to 93-94 (Kundu., A, 1997). This is due to subcontracting of work by large forms done at household level. The slowing down of industrial employment in partly be attributed to location of large units outside the municipal limits.

An overview of the literature by different scholars suggest widening regional disparities. Concentration of industries within a few developed states is only further accentuating the imbalances. The concentration of industries in a few large cities even in poor states is creating intra regional imbalances. While there has been a case of inter regional concentration there is also a case of intra regional

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[12] Kundu, (1997)

dispersal. The industries within large cities are shifting out to the peripheries of the city due to locational advantage at the periphery. The entrepreneur can have his production unit at the periphery. At the same time he can have his corporate office and residence within the city. Thus he is at an advantage while the peripheries of the city are degenerating. Polluting industries shift to the peripheries. The workers are faced with lack of basic amenities like water, power, schools etc. Within the city there is a rise of 'informal sector' employment and casualisation of labour.

It would be appropriate to analyse the occurrence of this phenomena in Delhi and its periphery.

CHAPTER - 3

OVERVIEW OF THE INDUSTRIAL LOCATION POLICY

At the eve of independence India inherited a Industrial structure exhibiting high spatial concentration Industries were concentrated at a few large cities like Bombay, Calcutta and Kanpur. Manufacturing was concentrated in a few goods. Dispersal of industries was imperative for equitable resource allocation and employment generation. Decentralisation and dispersal of industries was one of the objectives of industrial development from the earliest plan period. To realise this objective location of Industries in the backward regions were done through various policies. The most important of them were:

(i) Location of Public Sector Enterprises

(ii) Industrial Licensing

(iii) Backward Areas Development Programme

(iv) Growth Centres Approach.

(v) MRTP Industries Location

(vi) Small Scale Industries Location

(vii) Location Policy for Metropolitan cities.

In this chapter, the above policies are discussed in brief. It is attempted to broadly draw the growth and shifts in these policies

during the various plan periods. In the last section some implications of the changes in policy is derived.

3.1 LOCATION POLICY OF PUBLIC SECTOR ENTERPRISES

In the location of public sector projects, the claims of relatively backward areas were kept in view wherever this could be done without giving up essential technical and economic criteria. This was manifested in the location of many public sector units in Madhya Pradesh, Bihar and Orissa during the Second plan period.

During the Fifth Plan period (1974-79) the Schedule 'A' of the Industrial Policy Resolution of 1956 was expanded. The public sector was also to make contribution in consumer industries like cement, paper, drugs, textiles and pharmaceuticals. But during the sixth plan period, it was remarked that the 'ripple effect' that central sector projects was supposed to stimulate small and ancillary units did not succeed in backward states like M.P, Orissa, and Bihar. By blocking basic infrastructure like power and water these states they could not put the infrastructure to alternate use also.

The mounting losses, inefficient management of public sector units and absorption of sick private units into Public sector led to 'sickness' of public sector enterprises.

During the Eighth plan period the sectors that were exclusively demarcated for public sector investments were reduced. The Industrial policy of 1991 brought down the reserved items from 29 to 17. In 1992 it was further cut short to 8 items which was again reduced to 6 items.

Public sector units were subjected to Sick Industrial companies Act 1985 (SICA) and sick units were referred to institutions like Board for Industrial and Financial Reconstruction1987 (BIFR) for revival or rehabilitaion. During 1996-97, the disinvestment commission was set up for equity disinvestment of PSE's.

The public sector units as an agent to level regional imbalances does not exist any longer. In the initial stage of PSE development (50's and 60's) it was actively used for correcting regional disparities in industrial location. Till 1979 the public sector occupied decisive position in the industrial sector. During 1974-79 plan period its potential was boosted by increasing the items for public sector production. But after the era of liberalization began in the VIIth plan period the public sector has been losing importance. The government first deregulated the exclusivity of the public sector , threw open most items to the private sectors. and then there was disnvestment of the whole sector itself. The "rationalization" of the public sector has thus made it impotent of any capacities for balancing regional disparities.

3.2 LICENSING POLICY AS A TOOL FOR INDUSTRIAL LOCATION

The Industrial (Development and Regulation) Act 1951, popularly known as the licence Act, was designed to be used for regulating location of private industrial units. All undertakings that satisfied the criteria of 'factory' came under the Act. 'Factory' is an undertaking which uses electric power and has Ten or more workers or does not have electricity but has twenty or more workers. Regional dispersal was taken into account when considering application for licence for industries which were not so raw material oriented. Application was accepted or rejected on the basis of regional dispersal that was contemplated on that particular industry..

In 1960, Government exempted all undertakings that employed less than 100 workers and whose fixed assets did not cross Rs10 lakh in value. In 1962, the criteria of number of workers was deleted. In 1964, the exemption limit was further raised to Rs25 lakh. In 1966 a few industries were delicensed as private investment was sluggish. By 1969 , 41 industries was delicensed.

The industrial policy 1977, decided that licenses would not be issued for new establishments within the peripharies of metropolitan cities.

From 1980, the starting of the VIth plan period the scope and reach of licensing declined. A large number of industries comprising 25 groups were exempted from licence during the VIth plan period.

The New Industrial Policy of 1991 drastically changed the licensing policy. Industrial licensing was abolished for all projects except for a short list of industries related to security and strategy concerns, social reasons, environmental reasons. Even MRTP/FERA companies were exempted from licence requirements. Licensing was required only if the firm was to be established in the vicinity of a metropolitan city. Also large firms were restricted from entering in production of items reserved for small scale and ancillary units. Small scale industries and ancillary undertakings were exempted from all locatonal regulations.

The IDRA no longer is being used as a tool for industrial dispersal. From being a positive agent with powers to direct where to establish industries it has become a negative tool with powers just to direct where not to establish firms. It has no control over size of the undertakings which are established anywhere in the country.

3.3 BACKWARD AREAS DEVELOPMENT

Widening regional income disparities had been a cause for concern from the 1st plan period. Industrial growth was getting concentrated to a few developed states like Maharashtra, Gujarat and Tamil Nadu. Other states lagging in infrastructural facilities were unable to grow at the rate of the developed states .

To negate this anomaly the IIIrd plan proposed setting up of 'Industrial development Areas' in backward regions. In selected areas basic facilities like power, water and communication were to be provided . During the Fourth plan period a scheme for concessional finance and subsidies were introduced in the backward areas.

In 1978, the Planning Commission set up the National Committee on Development of Backward Areas(NCDBA) to study industrial dispersal. NCDBA submitted its "Report on Industrial Dispersal' in 1980. A total of 229 districts were identified as backward. The policies for encouraging industrial growth was through many incentives like (a) capital Investment Subsidy (b) Transport Subsidy (c) Income Tax Concessions, (d) Concessional finance from financial institution (e) state government incentives.

During the seventh plan period starting from 1985 there had been some reservations about the policy on backward area development. It was felt that industries will not be attracted to backward areas by mere subsidies, incentives and concessions. A more realistic policy would have be to develop the basic infrastructure in the backward regions. Policy should be oriented towards attracting industries to small district towns which has not been industrailised so far. Towards realisation of this objective the 'growth centres approach' was introduced in the VIIIth plan simultaneously with the Backward Areas Development Programme.

In 1990, seventy two industries were delicensed for MRTP/FERA companies if they were set up in notified backward areas. For Non-MRTP and non-FERA companies the investment limit was increased to Rs.50- crores in backward areas against Rs.15crores in the other regions. In 1993 a Five year tax holiday was introduced for new industries in industrially backward states. This facility was available irrespective of the size of the firm.

3.4 THE GROWTH CENTER APPROACH

The 'growth center' approach was introduced in 1988. Its objective was to develop the infrastructure of centers that could act as magnets for attracting industries to these areas. These centers were to be endowed with basic facilities like power, water, telecommunication and banking. Seventy growth centers were adopted during the Eighth plan period. The growth centers were adopted on the basis of population, Area and industrial backwardness.

A review of this program in the Ninth plan draft states that " the schemes has not been able to make much headway during the VIIIth plan period and not a single center out of the 66 approved had become functioned upto 31.3.1998"[1]. Resources have become thinly spread over a large number of centres. In the IXth plan it was decided that work on new growth centers should not be taken up. However the

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[1] Ninth Five Year Plan, Draft; Planning Commission, Govt. of India.

North-East states were given an exception. A special package involving integrated infrastructure development centers, transport subsides, strengthening of institution concerning enterpreneurship, and human resource development etc were announced during the period.

3.5 LOCATION OF MRTP INDUSTRIES

The monopolies and Restrictive Trade Practices Act (MRTP) was passed in 1969 for the purpose of controlling the growth of economic power in very few hands. Companies that exceeded a total asset worth of Rs. 20 crore was included in MRTPA. These undertakings were eligible to participate in industries that were not reserved for small sector public sector, and were of basic, critical and strategic importance for the growth of the economy. During the 7th plan period the exemption limit was raised to Rs. 100 crore. Also 83 industries were exempted from MRTP Act for entry of dominant industries. The MRTP/FERA companies were also delicensed in backward area for 72 industry groups. The MRTP Act was later amended to remove the threshold limits of assets of MRTP companies. Emphasis was laid on actual practices of large undertakings rather than having a pre-entry scrutiny.

The large industrial houses has thus become on par with small and medium size industries. They were not subjected to any locational restrictions except that of licence requirements in metropolitan cities.

3.6 LOCATION OF SMALL INDUSTRIES

Village and small industries were spread all over the country even during the independence period. They consisted mostly of traditional household industries. Various schemes of the Central and State government were provided to the development of this sector.

The Fourth Plan had emphasised in its objectives to promote decentralization and dispersal of industries and to promote agro-based industries in this sector. This was to be achieved through a combination of incentives and disincentives. The approach paper to the plan states "The operation of the industrial licensing system has not been effective in preventing competition from the large industries and in providing the required degree of initial protection. Nor has it been possible to prevent concentration of industries in large cities and towns".[2]

During the Fifth Plan period new programmes were initiated with thrust on enterpreneurship development, promotion of industries in rural and backward areas, ancillary development, and modernization.

[2] Fourth Five Year Plan Draft, Planning Commission, Govt. of India,

During the VIth Plan the 'tiny' sector within the small industries were demarcated. Special attention was to be given to this sector if they were situated within towns of population less than 50000.

In the VIIth plan promotion of SSI's at growth centers was envisaged. It was done by location of "nucleus plants' at growth centers which would encourage ancilliarisation at this region.

The investment limit in plant and machinery of SSIs, ancillary units and Export Oriented Units was increased to Rs. 60 lakhs, Rs. 75 lakhs and Rs. 75 lakhs respectively. The limit for Tiny industries was raised to Rs. 5 lakh.

The government announced many programmes like preference in land allocation, power connection to SSI's in 1991. Tiny sector was given special emphasis with institutional finance and relaxation in labour laws.

SSI's and ancillary undertakings were exempted from licensing for all articles of manufacture which were not reserved for public sector or which required compulsory licence. Also SSI's were exempt from all locational conditions subject to the provisions of the central and state environmental laws and land use laws.

Since the liberalisation policy many items reserved for SSI's are allowed to be imported under Ordinary General Licence (OGL) which

means the SSI have to face competition from MNC's and large units from abroad whereas it is not produced in the country. The Abid Hussain Committee has recommended complete deregulation of the products reserved for the SSI's.

3.7 LOCATION POLICY AND METROPOLITAN CITIES

Though, in 1956 Industrial Policy Resolution (IPR) the problem of unplanned urbanization' was taken not of, was only in 1977 during the Vth plan concrete action was taken. It was decided that industrial licenses would not be issued to new industrial units for location within a certain limits of large metropolitan cities having a population of more than a million and urban areas with a population of more than 5 lakhs as per the 1971 census.

During the VIth plan the decay of small and medium towns in terms of population was noticed while the metropolises were expanding. De-industralising metropolitan cities was one among the strategies to decongest large cities. To develop the small and medium towns, the Integrated Development of Small and Medium Towns (IDSMT) was introduced to provide infrastructure and other facilities.

Since the delicensing era, starting from 1985 companies that did not come under the purview fo MRTP and FERA acts were subject to only two conditions.

i) they should not be located within the standard urban area of a million city

ii) they should not be located within the municipal limits fo a city with more than 5 lakhs

Further in 1989, both MRTP/ FERA companies and non-MRTP/ Non-FERA companies were subjected to a uniform location policy. All undertakings irrespective of size were not given the facility of producing goods in the delicensed items if they were established within 50 kms of standard urban area of cities with 25 lakh population, 30 kms for cities with 15 to 25 lakh, and 15 kms for cities with 7.5 to 15 lakh population. However, if the industry was non-polluting in nature and was in an industrial area established by the state government then it was not subject to the above policy.

The industrial policy of 1991 abolished the industrial licensing totally except for a small list of industries. No licence was required for industries except for locating in million cities. In million cities, the differentiated scheme was simplified into a single distance specification of 25 kms from the city periphery if they were not in a designated industrial area within the city and were polluting industries.

The location policy reveals that while large industrial houses that came under the MRTP and FERA acts were subject to legislation

regarding location through licensing prior to 1988 and were not allowed near the cities, by the policy shift in 1989, these large firms could be located at a distance of 50 kms of from the city limits. Further, when the distance specification was reduced to 25 kms, and with no licence requirements these firms could be established even nearer to the metropolises. This provides them the opportunities to establish large firms at the peripheries of the city, at the same time have their corporate offices and houses within the city.

3.8 IMPLICATIONS OF POLICY SHIFTS

In the liberalised era, the public sector cannot play any decisive role in location of industries due to deregulation of the exclusivity of the sector and disinvestment of PSEs. The provisions of Industrial licensing has also become impotent in the wake of liberalisation as industrial licence isrequired only for a very small list of industries. Even MRTP/FERA companies has been excluded from licensing requirements. Licensing holds good only for those industries that are to be established within 25 kms of large cities. With the removal of threshold for MRTP companies and entry allowed in many sectors these companies have become competitors to small industries. MRTP companies are also subjected to similar location constraints as the Non-MRTP companies are. Opening up of the economy has made it neccesary for the SSI's to compete with international MNC's and foreign large firms for many products. There are proposals that the

list of industries reserved for SSI's should be deregulated. This would make the whole industrial sector a single unit with no protection for the smaller units from competing larger units.

The new growth centres approach is to develop infrastructure facilities in the small towns. The beneficiaries of the facilities provided cannot be segmented into large or small unit. Also the metropolitan cities location policy allows any size of undertakings to be established at the periphery of the metropolitan cities. This allows large industrial units to be located at the peripheries of the city that provide access to markets of the city. While the smaller firms may be driven out of market due to competition. It depends on the strength of growth center to act as counter magnets to attract enterprises to these towns. It is but doubtful that large firms MNCs etc would turn down the possibility of having their production units in the periphery of cities as the administration of the unit could be done from within the city itself. Also, they could avail the facilities of growth centres that lie close to the city. This New Industrial Policy, may not be able to arrest the growing concentration of industries. In fact it may only lead to further widening of the regional disparities.

The policy shifts has become advantageous for the entrepreneur to have his production units at the peripheries of the city. While having his corporate office and residence within the city. While the condition of the worker in the city as well as the periphery is deteriorating .

While in the city the decline of the manufacturing sector is pushing workers into informal sector in the peripheries he is forced to survive in poor living conditions. In the wake of liberalisation of the economy and the government trying to woo in foreign investors this phenomena is only bound to accentuate.

Given this perspective, I have tried to analyze the structure and growth of industries in Delhi and its periphery .

CHAPTER 4

TRENDS AND STRUCTURE OF WORKERS IN METROPOLITAN CITIES

4.1 INTRODUCTION

Metropolitan cities are cities that have a population of over one million. There were twenty-three such cities in India, according to 1991 census. The workforce structure of the million cities have been analysed by calculating the average for all cities. The study period is from 1971 to 1991. Data has been obtained from various census publications. Percent share of workers, growth rates etc. were calculated for the three census year 1971, 1981 and 1991. The tables calculated for all cities for the three years are included in the appendix (See appendix table).

4.2 DEMOGRAPHIC PROFILE

The number of metropolitan cities has increased phenomenally during the post-independence period. From 1901 to 1941 there were only two such cities (see Table - 4a). But by 1951 there were five cities. During 1951 to 1971 it increased to nine cities in 1981, there were twelve cities. But during the decade 1981-91 the number of cities almost doubled from twelve to twenty-three cities. These cities account for around 8.5% of total population of the country and 32.54% of the

urban population. However, we notice that, though, the million plus cities increased in number during 1981-91, the average population per city had declined during this decade from 3.51 million to 3.07 million.

Table – 4a

Urban Agglomeration/cities having population of more than a million, 1901-1991

Census year	No. of urban agglomerations /cities with more than one million population	Population	Average population per UA/city (in million)	Population of million plus urban agglomerations/cities as percentage of India's		Decadal variation of population (percent)
				Total population	Urban population	
1	2	3	4	5	6	7
1901	1	1,510,008	1.51	0.63	5.84	-
1911	2	3,763,586	1.38	1.10	10.65	83.02
1921	2	3,129,518	1.56	1.25	11.14	13.24
1931	2	3,406,869	1.70	1.22	10.18	8.86
1941	2	5,307,540	2.65	1.67	12.02	55.79
1951	5	11,746,616	2.35	3.25	18.81	121.32
1961	7	18,101,748	2.59	4.12	22.93	54.10
1971	9	27,831,065	3.09	5.08	25.51	53.75
1981	12	42,121,700	3.51	6.16	26.41	51.35
1991	23	70,661,259	3.07	8.37	32.54	67.76

Source : Paper 2, 1991; Provisional Population Tables; Census of India, 1991.

The metropolitan cities experienced maximum population growth during the decade 1961-71 at the rate of 41.42% (Table-4b)

After that there had been a steady decline in growth rate. During 1971-81 it grew at 40.52% while during 1981-91 it further declined to 39.59%. It suggests that immigration to the cities have slowed down during the two decades.

Table -4 b
Simple Decadal Population Growth Rates Of Metropolitan Cities

ONE DIGIT CLASSIFICATION	51-61	61-71	71-81	81-91
GREATER BOMBAY U.A	39.95	43.80	38.07	52.51
CALCUTTA U.A	28.14	24.01	23.90	18.73
DELHI U.A	64.17	54.57	57.09	46.18
MADRAS U.A	26.08	63.02	35.31	24.99
HYDERABAD U.A	10.48	43.80	41.72	68.13
BANGALORE U.A	53.49	37.88	75.56	39.87
AHMEDABAD U.A	37.46	45.31	45.40	29.42
PUNE U.A	29.93	43.53	48.55	47.38
KANPUR U.A	37.66	31.32	20.69	37.18
NAGPUR U.A	42.25	34.79	39.94	27.60
LUCKNOW U.A	31.96	24.14	23.79	62.97
SURAT U.A	33.75	55.27	85.36	66.02
JAIPUR U.A	34.82	55.17	59.42	49.18
KOCHI U.A	64.94	73.13	35.58	66.15
COIMBATORE U.A	55.99	64.26	25.01	23.38
VADODARA U.A	46.50	50.94	59.34	49.72
INDORE U.A	27.01	42.03	47.85	33.13
PATNA U.A	27.18	32.88	66.71	19.55
MADURAI U.A	32.39	44.94	27.58	20.49
BHOPAL M.C	117.87	72.62	74.35	58.51
VIZHAKHAPATNAM U.A	95.47	72.10	66.08	74.27
VARANASI U.A	36.82	25.54	25.50	28.77
LUDHIANA M.C	58.67	64.39	51.32	66.72
TOTAL	36.46	41.42	40.52	39.59

Source : Calculated from provisional population tables, Census of India, 1991, 1981, 1971.

Of the 23 cities 13 had growth rates higher in the period 1961-71 compared to 1951-61. During 1971-81only 11 cities grew at a rate higher than the previous decade. But by 1981-91 only 7 cities had growth rates higher than 1971-81. The most widespread decline in growth rate of population was during the 1981-91 affecting 15 of the 23 cities. 7 of them had experienced decline of population growth for the first time in 1981-91. The cities were Ahmedabad, Pune, Surat, Jaipur, Baraoda, Indore and Patna. Four other cities had declining growth rates since 1971. They were Madras, Hydrabad, Coimbatore and Madurai, Delhi, Bangalore, Nagpur and Bhopal had declining in growth rates during 1961-71 afterwards increased during 1971-81 but during 1981-91 the growth rates declined.

The only cities that had growth rates higher during their decade were Bombay, Ludhiana, Kochi, Varanasi, Vizhag, Lucknow and Kanpur.

Population growth within metropolitan cities had slowed down from 1971 onwards. It has become penarive during the decade 1981-91. The decline in growth suggests the slow down of migration to Metropolitan cities .

4.3 ANALYSIS OF THE WORK FORCE STRUCTURE

Sectoral classification of workers in the cities were calculated for three census years 1991, 1981 and 1971. In all the years the share of work force in each sector is by and large the same (see Table - 4c).

Tables 4 c

Sectoral Classification of Workers in Metropolitan Cities

	TOTAL WORKERS			AVERAGE NUMBER OF WORKERS			AVERAGE SHARE OF WORKERS		
	1991	1981	1971	1991	1981	1971	1991	1981	1971
PRIMARY SECTOR	643733	286025	171964	27988	23835	71526	2.90	2.24	1.98
SECONDARY SECTOR	8436766	5242292	3420611	366816	436858	937418	38.07	41.09	39.31
TERTIARY SECTOR	13081477	7231215	5108783	568760	602601	1453497	59.03	56.67	58.71
TOTAL	22161976	12759532	8701358	963564.2	554762.26	378319.91			

Source: Calculated from various Census issues, Census of India, years. 1971, 1981, 1991.

The services sector has the largest share of workers consisting of 59.07% in 1991, 56.67% in 1981 and 58.71% in 1971. The secondary sector in the next group with 38.07% in 1991, 41.09% in 1981 and 39.31% in 1971. The primary sector is very weak at 2.90% in 1991, 2.24% in 1981 and 1.98% in 1971.

However, the interesting phenomenon in that the share of primary sector has been rising gradually over the years. Metropolitan cities being, industry and service, oriented the rise in primary sector is not due to the rise in share of agricultural activities within the city, but probably due to the immigatrion of agricultural labourers to cities in search of unskilled low paid labour. They are absorbed into the informal sector when skill levels requirements are low and wages are poor.

The decline in secondary sector in 1991, could mainly be due to the strict imposition of environmental laws and City Master Plan. All metropolitan cities are bound by the 'industrial location policy' by

which new industries to be established within a radius of 25 kilometers of the periphery of the standard urban area require an industrial licence.[1] Also there are active environmental lobbies and NGO's which are pressurizing the decision makers to impose restrictions on industrial activity within the city limits. Hence the industrial activity within the city is declining. These industries are probably shifting base to the fringe areas of the city. From the fringes it is possible to access the city market at the same time be free from the regulation. The rise of population growth at the fringe areas of various cities could be due to this.

The decline in service sector in 1981 was reversed in 1991. This could be due to the rise of sub-contracting of work within the city limits. Large industries functioning at the peripheries would subcontract their work to small firms. Firms operating at less than ten workers with electricity and less than twenty workers without electricity are not included in the Factories Act. Hence the wages of workers are not subjected to the law. Thus the large industries could extract higher profits by remaining at the peripheries while exploiting the labour through subcontracting. Since such workers are recorded in the service sector this is possibly increasing the service sector within the city.

[1] As per the Industrial policy statement, July 24th, 1991, a proposed projet requires an industrial licence if it is to be established within 25kms from the periphery of the standard urban area. However, this condition will not be applicable to electronics, computer software, printing industry and other non-polluting industries that may be notified from time to time

Table 4 d
Percentage share and Growth Rate of Workers in the Metropolitan Cities

	AVERAGE SHARE OF WORKERS			SIMPLE DECADAL GROWTH RATE	
ONE DIGIT CLASSIFICATION	1991	1981	1971	1991_81	1981_71
I	0.75	0.73	0.83	34.76	17.27
II	1.35	1.13	1.10	54.33	26.01
III	0.80	0.97	0.83	-22.84	28.04
IV	0.25	0.17	0.16	34.69	48.50
Va	1.69	3.08	2.81	-40.39	49.89
Vb	30.12	33.79	32.24	-20.08	10.87
VI	6.01	4.17	3.42	29.75	34.76
VII	23.57	21.03	21.04	0.67	8.71
VIII	9.52	10.00	11.15	-15.63	-1.05
IX	25.94	24.93	26.43	-6.84	7.21
total	100.00	100.00	100.00	-9.38	9.98

Note : Averages has been calculated with 23 metropolitan cities in 1991, 12 in1981 and 9 in 1971.
Source : Calculated from Primary Census Abstracts and Population Table, Census of India, 1991, 1981, 1971.

The growth rate of workers in the metropolitan cities was by 9.98% during 1971-81. But it declined to -9.98% during 1981-91. It means that during this period there has been reduction in the total workers in metropolitan cities. There has been shifting of the working force from metropolitan cities. The rise in 1981-71 is the highest in household industrial workers at 49.89%. Non-household industrial grew at 10.87%. While construction sector grew at 34.76%. In general all sectors were found growing during 1971-81 except for Transport, storage and communication.

But during 1991-81 there was a decline in the growth rate in all sectors except cultivators and agricultural labourers. Despite a decline in the total workers in almost all cities the rise in share of agricultural labourers and cultivation indicate that there is characteristic change in type of immigration to cities. The demand for skilled labour which could be absorbed into the manufacturing sector is declining within the cities. Demand for unskilled labour which could be absorbed into the informal sector in rising. The share of agricultural labourers also has increased from 0.69% in 1971 to 1.35% in 1991.

In absolute numbers the most significant decline is that of manufacturing sector. The share of N.H.H.I declined from 34.18% in 1981 to 30.12% in 1991. There was negative growth rate during this period in both H.H.I and N.H.H.I. the declining share of workers as well as negative growth rates in the manufacturing sector implies that there is a possibility of workers getting relocated in other sectors, and out migration of workers from the city. This is probably due to the shifting of industries from city limits and mushrooming of industries at the peripheral regions of the city.

The share of workers in construction sector is rising, though the growth rate has declined. This suggests the acceleration of construction activity within cities. Since the manufacturing sector is declining in the city if the construction workers were engaged in construction of manufacturing sites and dwelling houses for workers this sector also should have shown a decline. But there is no such

trend. On the contrary the share has increased which suggests that this sector is engaged largely in building corporate offices, real estates, public works etc.

4.4 COMPARISON OF METROPOLITAN CITIES WITH ALL URBAN AREAS

Table 4 e

Percentage share of workers in the Metropolitan and all Urban Areas.

	1991		1981		1971	
I	**METRO**	**ALL URBAN**	**METRO**	**ALL URBAN**	**METRO**	**ALL URBAN**
I	0.75	4.92	0.51	5.13	0.83	5.10
II	1.35	6.69	0.79	6.05	1.10	6.00
III	0.80	1.73	0.94	1.81	0.83	1.70
IV	0.25	1.12	0.17	1.05	0.16	1.00
Va	1.69	3.13	2.57	4.94	2.81	4.97
Vb	30.12	21.94	34.15	24.69	32.24	22.85
VI	6.01	5.07	4.20	4.13	3.42	3.50
VII	23.57	21.99	21.21	19.87	21.04	20.05
VIII	9.52	8.28	10.22	9.07	11.15	9.97
IX	25.94	25.12	25.24	23.26	26.43	24.86

Source : Calculated from Primary Census Abstracts and Population Table, Census of India, 1991, 1981, 1971.

From 1971 to 1991 in all census years, the largest share of workers in metropolitan cities is in the Non-household industries. It had risen from 32.24% in 1971 to 34.15% in 1981 but declined to 30.12% in 1991. The decline in Non-household industries is possibly due to strict imposition of Master plan, which discourages industrial growth within metropolitan cities, industrial policy which impose licence on new industrial establishments in metropolitan cities, the environment lobby which cries for cleaner environmental condition within large cities .

If the 'All urban' areas are taken to consideration, the share of workers in N.H.H workers is much lower at 22% compared to the metropolitan cities at 30.12% in 1991.The share of N.H.H workers in 1971 was 22.85% it increased to 24.69% in 1981 but declined to 22% in 1991. It indicates that while there has been some amount concentration of industries in metropolitan cities during 1981-71 there was also a case of disposal of industries 1981-91 there has been a general decline in both metropolitan cities and urban areas. This indicates the general stagnation of industrial activity during the period and also decline in the disposal of industries to other urban areas while there is a higher concentration in the cities. The decline in N.H.H in metropolitan cities due to various reason stated above would have led to a rise in this category of workers in the peripheries of the city. The shifting of industries to the peripheries of the city is advantageous to the entrepreneur as ~~it is~~ able to surpass the the environmental laws, location policy specification and card use laws in the city while its proximity to the city makes it possible to avail the large metropolitan market. With the construction of large transport and communication system like Mass Rapid ?Transport System (MRTS) in Delhi which connects the neghbouring regions with Delhi it become all the more convenient and advantageous to the entreprenuner to establish at the peripheries rather than within the city itself .

The other most prominent groups are trade and commerce and other services. The trade and commerce sector increased from 21.04% in 1971 to 21.21% in 1981. But in 1991 it increased by a much larger share to 23.57% in metropolitan cities.

In 'all urban' areas there was a decline during 1971-81 from 20.05% to 19.87% but it increased to 22% in 1991. This rise is seen in metropolitan cities also. This group consists of trade and commercial activities which mostly are for the needs of the upper and middle class society. The rise in this sector may suggest that the work structure is being shifted from the actual 'Productive sector' of manufacturing activities to unproductive sectors' like trade and commerce. Cities are becoming commercial centres to satisfy the elite needs.

'Other services' have miscellaneous services like repair services and other manufacturing activities that are done on a 'subcontracting' basis. The metropolitan cities had a decline in this group form 26.43% in 1971 to 25.24% in 1991. It indicates that in the decade 1981-91 there has been a rise in low paid unskilled labour within the cities. In 'All urban' area there is a difference in trend. While the rise in metropolitan cities had been marginal in 1981-91 by about 0.71% in 'All urban' areas the rise has been much higher. It had been to the tune of almost 2%. The 'All urban' areas are facing a degeneration in the workforce structure. With a largest share of workforce in 'other services'.

The share of workers in construction workers in metropolitan cities was 3.42% in 1971 while in Urban areas it was 3.50%. But by 1991 it was 6.01% in Metropolitan cities against 5.07% in Urban areas. This again points to the rise of construction activity in large cities is ==== for real estate dealers.

In many metropolitan cities construction of real cities like Flats, farm houses goes on unnoticed. They encroach on the public land, and defy land use plans in cities. Later on through various pressure tactics they are able to legalise these illegal structures is vehemently opposed by various lobbies of consumers, builders and politician. While the workers in this sector are not protected by any wage laws. In most cities the construction workers are illiterate, unskilled migrants from poor states of Bihar, Orissa and U.P. They are brought of the city under 'contract labour' system where the wage levels are fixed by the contractor. He fixes the wages not in party with wage levels in the city but at a rate marginally higher than their wage levels in their places of origin. Thus the construction labour is exposed to unabashed exploitation in the cities.

The trends in share of workers of metropolitan cities and 'All urban' areas suggest that there has been some dispersal of industrial activity to the smaller towns and cities during 1981-71 but the trend was reversed in 1991 and there are signs of declining dispersal in the urban areas. While a concurrent decline in metropolitan cities also may be due to the shifting of industries to the peripheries of the cities. The rise in the 'Trade and Commerce' sectors is pointer to the change in structure of the city from being 'productive' region to 'unproductive' elitist consumerist regions. The rise of 'other services' and 'construction sector suggest the increase of 'informal' and 'casual' type of workers in the city.

Table 4-f
Percent Of Workers In Metropolitan Cities -1981

	1981	PERCENT OF WORKERS									
	ONE DIGIT CLASSIFICATION	I	II	III	IV	Va	Vb	VI	VII	VIII	IX
	METROPOLITAN CITIES										
1	GREATER BOMBAY U.A	0.11	0.09	1.07	0.11	2.49	38.91	3.35	21.80	10.04	22.02
2	CALCUTTA U.A	0.38	0.94	0.74	0.05	2.61	39.08	2.72	21.43	10.30	21.74
3	DELHI U.A	0.32	0.23	0.70	0.26	1.69	27.44	6.41	22.37	9.07	31.51
4	MADRAS U.A	0.67	1.90	1.23	0.31	2.17	30.02	5.29	23.17	11.07	24.17
5	HYDERABAD U.A	0.62	1.14	0.49	0.20	1.58	23.76	4.59	21.60	12.48	33.53
6	BANGALORE U.A	0.98	0.96	0.75	0.13	2.91	36.69	6.41	19.64	10.04	21.49
7	AHMEDABAD U.A	0.34	0.51	0.75	0.20	2.08	43.89	3.07	20.25	8.83	20.08
8	PUNE U.A	1.00	1.23	1.38	0.13	2.34	34.25	6.13	16.67	8.82	28.08
9	KANPUR U.A	1.83	1.35	0.91	0.07	3.63	32.54	2.26	19.38	8.09	29.94
10	NAGPUR U.A	1.20	1.37	1.36	0.77	8.60	21.70	4.26	19.61	13.69	27.45
11	LUCKNOW U.A	0.89	1.42	0.98	0.04	5.26	15.13	1.85	16.43	12.80	45.19
12	SURAT U.A	0.65	1.53	0.70	0.15	4.95	55.87	2.59	16.37	4.93	12.26
13	JAIPUR U.A	1.94	0.53	0.75	0.38	4.79	26.58	4.53	18.12	7.91	34.48
14	KOCHI U.A	0.83	2.20	4.04	0.20	1.48	26.12	6.51	21.15	13.99	23.49
15	COIMBATORE U.A	1.93	7.33	0.63	0.06	4.44	37.50	4.48	19.92	7.54	16.16
16	VADODARA U.A	1.21	1.70	1.15	1.03	1.43	36.21	3.49	16.85	9.65	27.30
17	INDORE U.A	1.64	1.12	0.79	0.04	2.25	33.04	3.95	23.62	9.27	24.28
18	PATNA U.A	4.63	7.62	2.61	0.08	2.21	15.68	4.85	22.04	8.37	31.90
19	MADURAI U.A	1.61	2.90	0.32	0.03	6.56	30.03	3.95	28.01	9.64	16.94
20	BHOPAL M.C	2.01	2.39	1.64	0.16	5.05	24.46	6.08	15.32	8.52	34.37
21	VIZHAKHAPATNAM U.A	0.21	0.71	2.25	0.26	2.93	19.32	6.30	14.17	24.93	28.92
22	VARANASI U.A	1.89	1.32	0.62	0.05	22.31	19.09	2.17	23.96	6.72	21.88
23	LUDHIANA M.C	1.94	1.96	1.39	0.04	5.01	41.94	2.89	20.33	6.96	17.54

Source- calculated from various Census Tables, Census of India,years 1991,1981, 1971

*note- I-cultivators, II-agri labourers, III- forestry ,fishery, and allied activities, IV- mining and quarrying

Va- household Manufacturing, Vb- non household manufacturing, VI- construction, VII-trade and commerce, VIII- transport storage and communication, IX other services.`

Table 4 g

Percent of Workers In Metropolitan Cities -1991

		PERCENT OF WORKERS									
	ONE DIGIT CLASSIFICATION	I	II	III	IV	Va	Vb	VI	VII	VIII	IX
	METROPOLITAN CITIES										
1	GREATER BOMBAY U.A	0.39	0.23	0.57	0.22	1.41	35.68	4.72	24.07	11.16	21.55
2	CALCUTTA U.A	0.38	1.71	0.78	0.15	1.35	34.25	3.46	24.74	9.99	23.18
3	DELHI U.A	0.23	0.24	0.50	0.24	1.43	23.61	7.93	24.31	8.44	33.06
4	MADRAS U.A	0.56	1.41	0.97	0.12	1.11	25.90	6.57	22.98	10.24	30.15
5	HYDERABAD U.A	0.82	2.12	0.52	0.44	0.51	23.37	8.48	24.51	10.46	28.79
6	BANGALORE U.A	0.76	0.76	0.67	0.31	1.33	32.65	9.11	22.45	8.46	23.50
7	AHMEDABAD U.A	0.52	0.47	0.75	0.37	0.80	35.68	4.71	25.14	9.18	22.37
8	PUNE U.A	1.02	1.06	0.73	0.17	1.70	30.66	11.08	18.31	7.90	27.37
9	KANPUR U.A	1.63	1.47	0.68	0.02	0.65	27.91	2.00	27.45	7.60	30.59
10	NAGPUR U.A	0.82	0.79	1.38	0.83	3.02	20.83	9.57	22.96	12.54	27.27
11	LUCKNOW U.A	2.49	2.53	2.17	0.08	2.76	13.41	5.00	23.06	7.86	40.64
12	SURAT U.A	0.56	1.06	0.53	0.17	2.20	55.67	3.35	18.69	4.52	13.25
13	JAIPUR U.A	1.53	0.47	0.92	0.51	3.49	22.34	6.43	24.12	8.19	32.00
14	KOCHI U.A	1.63	4.17	3.98	0.46	0.77	20.49	9.66	21.48	13.89	23.47
15	COIMBATORE U.A	1.31	5.10	0.60	0.09	2.49	36.85	6.09	20.02	7.39	20.06
16	VADODARA U.A	0.96	1.26	0.98	0.96	0.49	42.71	4.82	16.92	7.55	23.35
17	INDORE U.A	1.41	1.33	0.47	0.05	1.29	26.48	5.60	26.18	9.33	27.87
18	PATNA U.A	4.74	8.63	0.92	0.06	2.46	6.63	2.43	20.32	5.34	48.47
19	MADURAI U.A	1.65	3.50	0.48	0.09	2.61	27.03	5.51	29.31	9.28	20.53
20	BHOPAL M.C	1.54	1.42	1.75	0.37	1.05	18.41	11.00	20.27	8.88	35.31
21	VIZHAKHAPATNAM U.A	1.70	7.92	0.65	0.61	1.83	17.30	4.92	24.41	18.33	22.35
22	VARANASI U.A	1.51	1.03	1.24	0.03	23.42	16.31	2.41	27.11	6.13	20.81
23	LUDHIANA M.C	1.32	4.88	1.98	0.00	0.19	44.50	6.32	20.47	6.23	14.12

Source- calculated from various Census Tables, Census of India,years 1991,1981, 1971

*note- I-cultivators, II-agri labourers, III- forestry ,fishery, and allied activities, IV- mining and quarrying

Va- household Manufacturing, Vb- non household manufacturing, VI- construction,VII-trade and commerce, VIII- transport storage and communica

IX- other services

Taking the city level classification of workers the most overwhelming trends are that in almost all cities the share of manufacturing sector in general is declining during the period 1991-81 (see Table 4F, 4G). Within manufacturing sector the H.H.I. workers were increasing only in Patna and Varanasi. N.H.H.I workers were declining in all cities except Surat, Vadodara and Ludhiana. On the other hand, the share of construction workers is rising in all cities except in Kanpur, Patna and Visakhapatnam. These trends confirm to the arguments put towards in above by taking average of the cities.

The general trend of decline in the manufacturing sector in all cities point forward shifting of industries from city limits. Workers are migrating to hinterlands. The rise in construction workers and Trade and Commerce workers in all cities suggests that the metropolitan cities are being gradually converted into large consumerist complexes. Cities are losing their industrial base·Larger city space is being utilized for the convenience of the high income population while the peripheries are being exploited for furthering the interest of the entrepreneurs. In this process, the city hinterlands are degenerating.

To substantiate the above arguments a few case studies are included.

4.5 CASE STUDIES

The studies done by different scholars point to the general degeneration of urban fringes.

A study on Bangalore city done by V.L.S. Prakasha Rao and V.K. Tewari (Rao and Tewari, pp. 337, 1979) concluded that there is a strong evidence of continuing corridor growth dominated by industries and irregular and scattered development of small and medium size industrial units in the city fringe villages located in the immediate shadow of the city.

Unlike in Europe and American cities the suburban centres of metropolitan Hyderabad (Gopi, K.N., p. 14, 1979) are not fashionable and exclusive residential areas of higher and M.I.G.s. Nor are they industrial suburbs comparable to those around large cities in industrially advanced countries. These are peripheral villages which have undergone functional and morphological changes either tough a large scale and sudden transformation of the old village milieu or through evolution.

About one-third of Maharashtra's industries are located in Greater Bombay, 76% of them located in Bombay island within an area of 169 square miles (Gupta R.C., pp. 117, 1998). This continued concentration of industry in the Greater Bombay area and particularly the island city has led to acute problem of conjuration, proliferation of slums, infrastructure shortages and marked deterioration in the quality of life.

The work force structure of Poona was analyzed by Christopher C. Benninger (Benninger. C.C., pp. 400, 1998). He argued that the

growth of large scale units has been a catalyst for smaller scale ones, either as direct ancillaries and therefore as components of 'base' activities, or as 'non-base' industries producing goods and services produced within the city. With a ban on the entry of large scale units in the metropolitan regions, new units have come up on the region's outskirts while the ancillaries are located in the region. Ancilliarisation and subcontracting respond to restrictive industrial growth policies and to unproductive union management. The Factories Act which regulates units employing over ten workers (powered machines) and twenty workers (for unpowered machines) results in even small units splitting into tiny units. Most 'tiny' units are unregistered and it is estimated that such 'invisible units' equals fifty percent of the visible ones, fringing the total number of units in the region to over ten thousand.

4.6 CONCLUSION

The analysis suggests that the rise of agricultural workers and construction workers in almost all cities point towards informalisation of workers within the city. The process of industrial dispersal which had taken some headway during 1981-71 has declined in 1991. The metropolitan cities are becoming elitist consumer centres while the workers are becoming part of the 'casual labour' and 'informal' sector. Various studies done by different scholars support the argument that fringe areas of the metropolitan cities are facing degeneration.

CHAPTER 5

DEMOGRAPHIC PROFILE OF DELHI AND ITS HINTERLAND DISTRICTS

5.1 POPULATION TRENDS IN DELHI

The administrative units of Delhi U.T are New Delhi Municipal Corporation, (NDMC) ii) Delhi contonment (Delhi C.T.), iii) Municipal Corporation of Delhi (MCD). There three regions from the core city. Around this three regions lies the census towns. Rural areas consists of the Delhi Tehsil and Mehruli Tehsil.

Table 5 a
Area in square kilometers

	1991	1981	1971
NDMC	42.74	42.74	42.74
Delhi (CT)	42.97	42.97	42.97
MCD (Urban)	431.09	3605	360.5
Census Towns	183.50	145.7	-
Urban total	700.3	591.9	446.2
RURAL	782.77	891.1	1038.00

Source census Tables, Census of India, 1991,1981, 1971

The Table 5a shows that while the total urban area has increased from 446.2 sq kms in 1971 to 700.3 sq.km in 1991, the rural area had been declining over the years. The urban sprawl is expanding and

rural space reducing. Also beyond the core city the outgrowth of 'Census Town' at the immediate fringes is phenomenal during 1981 and 1991.

Table 5 b

Total population, percentages and growth rates in Delhi, U.T.

	1991		1981		1971		1991-81	1981-71
	Tot. pop	**Percent share**	**Tot. pop**	**Percent share**	**Tot. pop**	**Percent share**	**Growth rate**	**Growth rate**
i) NDMC	301297	3.19	273036	4.38	301801	7.42	10.35	-9.53
ii) Delhi Cant.	94393	1.00	85166	1.36	57339	1.41	10.83	48.53
iii) MCD Urban	7206704	76.49	4884234	78.5	3287883	80.86	47.55	48.55
iv) Census Towns	869231	9.22	525764	8.45	Nil	0	65.32	N.a.
v) Rural	949019	10.01	452206	7.26	418675	10.29	109.86	8.00
vi) Total	9420644	100	6220406	100	4065698	100	51.44	52.99

Source : Calculated from Primary Census Abstract and Provisional Population Tables, Delhi, Census of India, 1991, 1981, 1971.

The largest share of population resides in the Delhi Municipal Corporation, (DMC) Urban area. It accommodated 76.49% of total population of the Union territory (Table 5b). However it is to be noticed that the percent distribution of population within the city limits, the NDMC, Delhi Cantt and MCD had been declinging over the years. While the Census Town Rural Share had been increasing. In 1981 the total city space was 446.2sq.km. In 1991 it increased to

516.8 sq.km. In 1981 the nn city urban rural space was 1036sq.kms . It declied to 966 sq.km in 1991. During the same periods the percent share of pupulation withn the city had declined from 84.15% to 80.6% (Table-2) . On the other hand, the share fo population had risen in census towns and rural areas from 15.71% to 19.23%. The growth rate of population during 1991-81 is highest in the censes town and rural areas at 65.32% and 109.86% rrspectively. The growth of MCD (urban) declined marginally from 48.55% in 1981 to 47.55% in 1991. These trends suggest that

(i) the city space is being decongested

(ii) the immediate fringes of the city i.e. the rural area and census towns areas are getting denser.

5.2 MIGRATION TRENDS IN DELHI

The growth rate of total migration to Delhi Union Territory declined from 48.93% density 1981-71 to 42.75% during 1991-81 Table 5c. However, the growth rate of migration to the rural areas of Delhi from other states increased from a measly 14.7% in 1981-71, to 131.55% in 91-81. During the same perido the migration to Urban areas of Delhi declined from 51.57 % to 37.56%. The migration to urban Delhi has slowed down during the decade 1981-91 while it has increased greatly to the rural areas of Delhi.

Table 5c
Decadal growth rate of interstate any time migrants to Delhi, U.T in percent

Total migrants	**1991-81**	**1981-71**
To rural	131.55	14.73
To urban	37.36	51.57
Total	42.75	48.93
Migrants seeking employment		
To rural	154.24	n.a
To urban	29.04	n.a.
Total	34.02	n.a.

Source : Migration Tables, Census of India, 1991, 1981, 1971.

Table 5d
Percent of migrants to population in Delhi, U.T.

Percent of migrants to total population									
	1991			1981			1971		
	From R	From U	Total	From R	From U	Total	From R	From U	Total
a) To R	25.02	5.7	30.72	24.77	3.14	27.91	23.08	31.96	26.27
b) To U	18.96	16.11	35.08	19.35	18.10	37.45	18.16	20.92	39.08
Total	19.57	15.07	34.65	19.74	17.01	36.76	18.66	19.09	31.79
2) Percentage of migrants for employment to total migrants									
	1991			1981			1971		
	From R	From U	Total	From R	From U	Total	From R	From U	Total
a) To R	26.94	25.45	26.66	24.39	23.41	24.28	n.a.	n.a.	n.a.
b) To U	36.88	26.68	32.19	40.06	28.17	34.32	n.a.	n.a.	n.a.
Total	35.60	26.63	31.70	36.64	28.11	33.76	n.a.	n.a.	n.a.

Source : Migration Tables, Census of India, 1991, 1981, 1971.

The percentage of migrants within the total urban population has been steadily declining from 39% in 1971 to 37.5% in 1981 to 35% in 1991. While the percentage of migrants in total rural population of Delhi had been increasing steadily from 26.2% to 27.9% to 30.72%. Migrants seeking employment grew at 154.04% during 1991-81. While in urban areas the percent of migrants declined from 34.32% to 32.19% by 1991. The growth rate also was much less at 29.04% compared to rural areas.

These trends suggest that

i) Rate of migration to the urban areas is declining and a growing share of those migrating to urban areas are for reasons other than employment.

ii) Rate of migration to the rural areas is increasing and a growing share of those migrating to rural areas is increasing and a growing share of those migrating to rural areas are for employment.

The expanding city space is gradually becoming inaccessible to the workers. The city land prices are exorbitant. On the one hand there are slum resettlement plans where the slum dwellers are evicted from their slums, which obviously is nearer to their place of work, and are 'resettled' at colonies far away the city. On the other, there is open flouting of the Land Use Plans where powerful construction

lobbies had had been able to legalise construction of buildings on unauthorised land. The state policy also seems to be, if not encouraging indifferent to this development. The 'Master Plan for Delhi-61'[1] had emphasized :

- For balanced development of the city and minimum friction there should decentralization of employment and its right relationship with residential areas.

The MPD-2000 [2] suggests that "only new central government offices need to be located in Delhi. Industrial growth in Delhi should be redistricted to small scale with stress on units which require skill less of manpower and energy and are non-nuisance and clean and largely subserve Delhi's economy. Also local and fiscal measures be adopted to restrict employment in industries and distributive trade". But what is intriguing is the 'selective' approach to shifting where the poorer section of the population that consists of the workers in both formal and informal sectors and slum dwellers and being pushed out while through various coercive means of 'demand politics' the city is being reorganized to the whims of the rich and powerful.

The civil society, environmental lobbies and state working in tandem has conjured a notion that dwelling of workers within city limits

[1] Master Plan for Delhi, 1961, DDA, New Delhi, 1951.
[2] Master Plan for Delhi – 2001, DDA, New Delhi, 1991.

workers both formal and informal, is a nuisance to the city. The powerful lobbying, corporate houses, builders and other participants of demand politics is leading to conversion of city space into corporate offices, private dwelling houses and public spaces like parks, school and offices etc. The exorbitant cost of living within city limits and shifting of industries due to environmental laws and city Master Plan is pushing workers to the peripheries of the city.

5.3 TRENDS AND PROFILE OF POPULATION IN HINTERLAND DISTRICTS

Table No. 5e
Population Growth Rate of Delhi and Hinterland

	1991-81	1981-71
Meer	23.01	25.33
Gha	78.57	15.08
Bul	20.53	24.68
Karn	-33.46	33.83
Sone	-12.08	23.26
Roht	32.65	22.16
Fari	46.51	39.88
Gurga	32.88	29.38
Mahend	-30.64	25.07
Alwar	29.11	26.17
Delhi	50.64	53.00

Source : Calculated from Primary Census Abstract and General Population Tables, Various Census Issues, Census of India, 1991, 1981, 1971.

During the period 1991-81 (Table 5e) the population growth rate of Delhi had declined from 53% to 50%. While the peripheral districts of Ghaziabad, Rohtak, Faridabad, Gurgaon, and Alwar experienced a

higher growth rate in 1991-81 compared to 1981-71. The growth rate in Ghaziabad is phenomenally high at 78.87%. While the growth rates of Meerut and Bulandshahar were slower in 1991-81.

The absolute decline of population in Karnal, Sonepat and Mahendergarh was due to changes in administrative area of districts. The high growth rate of population of Delhi compared to the peripheral districts indicate that Delhi continue to be a powerful magnet for migrants. However, the rise in growth rate of many peripheral district suggest that migration rate to these districts have risen during the period 1991-81.

Table 5 f

Literacy Rate of Delhi and Hinterland

	1971	1981	1991
Meer	28.05	34.68	41.35
Gha	27.57	43.33	43.70
Bul	21.82	28.97	36.06
Karn	27.67	36.77	45.54
Sone	29.48	40.85	52.32
Roht	23.15	42.55	53.68
Fari	22.17	39.19	47.08
Gurga	19.13	35.23	41.15
Mahend	22.95	38.61	45.63
Alwar	19.69	26.53	33.65
Delhi	56.61	61.54	63.49

Source : Calculated from Primary Census Abstract and General Population Tables, Various Census Issues, Census of India, 1991, 1981, 1971.

The literacy rate in Delhi U.T., (Table 5f) at 63% in 1991 which is comparatively higher than the peripheries of Delhi. It had increased from 56.6% in 1971 to 61.5% in 1981. The literacy rates of all the peripherals districts were less than 30% in1971. By 1991 all

districts recorded higher rates. The maximum growth is literacy rate was in the districts of Haryana. The growth was of a lesser order in the districts of U.P. The most noticeable aspect in the context is the declining gap in literacy rates between the Delhi U.T. and the peripheries.

It gives some indication that the population of peripheral districts are acquiring skills that could be on par with the Delhi U.T.

Table 5g
Sex Ratio of Delhi and Hinterland

	1971	1981	1991
Meer	832	838	857
Gha	832	829	835
Bul	855	864	860
Karn	855	854	874
Sone	865	866	854
Roht	893	883	866
Fari	811	813	832
Gurga	886	880	887
Mahend	915	931	950
Alwar	887	892	889
Delhi	801	808	830

Source : Calculated from Primary Census Abstract and General Population Tables, Various Census Issues, Census of India, 1991, 1981, 1971.

The sex ratio in Delhi, U.T is lowest in the region at 830 in 1991 (Table 5-g). It had increased from 801 in 1971 to 808 in 1981. But it increased to 830 in 1991. This suggests that while 'Male Selective' migration that occurred in 1971-81 has declined in the decade 1981-91. As described in the section migration to Delhi, the percent of migrants 'seeking employment' has declined in the period 1981-91. Reasons for migration to Delhi is increasingly for other purpose than

employment. Family movements into the urban areas in search of better faciliteis of accommodation and other social infrastructure could be the reason for rise in sex ratio within Delhi.

In the peripheries four districts namely Bulandshahar, Sonepat, Rohtak and Alwar had a decline in the sex ratio in 1991 compared to 1981. Other districts recorded a rise in the sex ratio in 1991 compared to 1981. But even after the rise most districts have a ratio of less than 900. The only district above 900 is Mahendragarh. This is much lower than the national average of 921 females per thousand males.

The population growth within Delhi has declined while in the peripheries it has increased n most districts. The slowing down of migration to urban areas of Delhi along with a rise in the rural areas implies that the migrants are settling at the peripheries of the city. The rise in population growth rate of the hinterland districts support this. The hinterland districts are having a rise in literacy rate.

The rising sex ratio in Delhi along with declining migration rate of those seeking employment in the city indicate that structure of population is changing. Selective male migration into the city is declining while families are moving in. The city is becoming a residential complex.

At the peripheries many districts show a declining sex ratio, and for the districts which showed a rise it is much lesser compared to the

rise in Delhi. Along with the rising population growth in the peripheries it suggests the rise of lower income workers in the peripheries.

5.4 STRUCTURE OF WORKFORCE IN DELHI U.T AND ITS HINTER LAND

During the period 1991-81 there is a reversal in the trend of total workers growth rate compared to 1981-71. The growth rate declined from 61.70% (Table-5h) in 1981-71 to 49.43% in 1991-81.

Table 5h
Rural / Urban Share of Workers in Delhi

	Total and Percentage of workers			Growth rate	
	1991	1981	1971	91-81	81-71
Rural	263311 (8.87)	128853 (6.48)	111460 (9.07)	104.35	15.60
Urban	2705055 (91.12)	1857543 (93.51)	1116937 (90.92)	45.62	66.30
Total	2968377	1986396	1228397	49.43	61.70

Note: Percent Share of workers in brackets
Source : Calculated from Primary Census Abstract and General Population Tables, Various Census Issues, Census of India, 1991, 1981, 1971.

These declines in growth rate is due to the fall in urban growth rate of total workers. While the rural areas experienced a rapid rise in growth rate from 15.60% in 1981-71 to 104.35% in 1991-81.

Of the total work force the percent share of urban workers had increased from 90.9% in 1971 to 93.5% in 1981, it declined to

91.12%. on the other, the rural workers share increased from 6.48% in 1981 to 8.87% in 1991.

The growth workforce in metropolitan cities like Delhi is mainly due to inmigration of workers to the cities. The declining urban growth rates and percentage of workers along with the comparatively very high growth rates in the rural areas and rising percentage share of workers suggests that the migrant of workers are settling down at the rural areas of Delhi, rather than moving to the urban core.

Table 5-i
Growth Rates of Workers in Delhi U.T

		1991_81			1981_71		
	Ind cls	rural	urban	total	rural	urban	total
	I	-10.33	18.08	-4.43	2.20	39.63	8.22
	II	-31.15	264.08	56.19	-2.63	32.45	5.65
	III	30.32	12.23	15.89	148.43	45.63	58.95
	IV	13.65	-37.79	-15.61	21.47	4553.92	172.36
	VA	121.10	18.12	24.74	-23.77	24.86	19.95
	VB	136.04	23.62	28.72	16.14	110.56	103.07
	VI	380.54	74.82	87.20	38.25	92.95	89.91
	VII	431.34	62.78	68.83	41.35	72.46	71.84
	VIII	144.44	31.29	37.84	35.40	56.96	55.53
	IX	116.60	52.40	55.95	19.83	38.33	37.16
total growth rates		104.35	45.63	49.44	15.60	66.31	61.71

Source : Calculated from Primary Census Abstract and General Population Tables, Various Census Issues, Census of India, 1991, 1981, 1971.

Taking the 9 digit classification the agricultural cultivators had a negative growth during 91-81 (Table.5-i) compared to 1981-71, while the agricultural labourers in the whole region experienced a very high growth at 56% during the period, 1991-81. The growth rate was 5.6% in 1981-71. This suggests a rise in casualisation of labour in Delhi. The increase is more conspicuous at the rural regions.

Within the manufacturing sector the data reveals that the household industries are growing at a faster rate in 1991-81 decade than in 1981-71, while there has been sharp decline in the growth rate of non-household industries from 103.07% in 1981-71 to 28.71% in 1991-81 (Table 5-i). Also the construction workers growth rate declined from 89.9% in 81-71 to 87% in 91-81. However, interestingly we find that the whole of secondary sector is growing at a much faster rate in the rural areas while it is declining in the growth within the urban areas. The growth rates for all secondary sector activities in rural areas was higher in 91-81 than in 81-71 and it was greater than 100% in all categories. While in urban areas the whole activities declined in the urban limits. However, it is to be noticed that though there is a rural shift, the workers composition essentially urban with around 90% still living in urban limits.

The sectors like Trade, Transport and Communication and services (Territory sector) were also found to have a decline in rate in 1991-81, except for group IX which includes 'other services'. 'Other services is rising at a greater growth rate in the later period.

The work participation rate of Delhi U.T was 30.22% which was higher than the WPR of all its hinterland districts in 1971 (Table 5-j) The hinterland districts had a WPR of around 24-27% in 1971.

The hinterland districts in 1971 were mainly primary sector oriented in Haryana, Karnal, Rohtak and Gurgaon had around 50% of their

workers engaged as cultivators. Mahendragarh had 61% of the workers engaged in cultivators . In Rajastan, Alwar, the cultivation accounted for 68% of the total workforce. In U.P buhadshshr also had 55% of workers engaged in cultivation. Only Meerut recorded a comparatively lower figure 37.75% even then the share of cultivators in substantial.

In contrast the Delhi U.T had only 2.62% of its work force in cultivation.

The hinterland districts also had a very high share of agricultural laboures. Ranging from 8.50% in Alwar to 21.6% in Karnal. While Delhi U.T had only 1.24% in this sector.

The manufacturing sector was very weak in all districts outside Delhi. But interestingly, Buldshahar, Alwar and mahendragarh had higher share of workers in the household manufacturing sector. It shows the predominance of traditional skill based industries. In other districts also the gap between the h.h and h.h.h is not so wide. It shows that manufacturing sector was not distinctly classified into h.h and h.h.h sectors.

The case of Delhi the h.h manufacturing at 2.27%, is smaller than all other districts. While the N.H.H sector is much larger at 21.46%. It shows that Delhi is a city with predominance of the industrial sector. The construction sector is very negligible in the hinterland while Delhi has 5.30% in this sector. The trade and commerce is another

prominent sector with 20% of workers in this sector. In the hinterland districts the sector has 4% to 7% of the workers. Other services form a very large share in both Delhi and its hinterland. In Delhi it is th highest sector at 30.23% in the hinterland districts it has around 10 to 16% of the workers in this group.

The 1971 table reveal that the hinterland districts are agricultural regions. Industrial sector plays a very negligible role. Services sector is important due to trade & commerce and other services. Delhi is a manufacturing cum service city.

The most noticable shift during 1971-91 is the decline of the importance of the agricultural sector in the whole region. Most districts experienced a decline of atleast 10 to 15% of the share of cultivators during this period. Delhi has a very low share hence to decline is of a much lesser account. But this decline is not found in the case of agricultural labourers. Infact, Bulandshahr, Meerut & Ghaziabad, experienced a rise in this sector. The land owners are declining and the labourers increasing probably suggesting the deteriorating condition of small farmer, and losing his land.

Another interesting phenomenon is the decline of the h.h sector in the manufacturing sector as a whole while n.h.h had grown in the whole region. We find that in 1991 (Table 5-k) the h.h sector is declining in all regions. The rise in the manufacturing sector is due to the rise of N.H.H sector. The gap between h.h sector and N.H.H sector is increasing. This is

because of the growth of modern manufacturing sector in the whole region while the traditional sector of manufacturing is declining.

The most prominent sector is 'other Services' This sector has increased in the whole of the peripheries while it has declined in Delhi. During the period 1971-91 the hinterland is experiencing a shift from being an agrarian economy to an industrial economy. However the greatest rise is in other services which includes services that are mostly low paid.

Table 5-j

Percentage Share of Workers of the Delhi & its Hinterland Region - 1971

	I	II	III	IV	Va	Vb	VI	VII	VIII	IX	WPR
Delhi	2.62	1.24	0.84	0.25	2.27	21.46	5.30	19.91	9.36	36.73	30.22
Karnal	47.41	21.69	1.00	.02	3.20	5.24	2.25	7.13	1.61	10.41	27.04
Rohtak & Sonipat	47.61	16.11	0.72	0	4.17	5.65	1.74	6.62	2.43	14.90	23.65
Gurgaon & Faridabad	47.11	10.62	1.29	0.54	3.622	11.51	2.02	6.27	2.69	14.29	26.11
Mahendragarh	61.10	11.60	0.85	0.87	3.41	2.40	0.91	3.95	0.97	13.90	25.60
Alwar	68.34	8.50	1.49	0.18	3.86	1.88	0.92	3.94	1.14	9.69	27.98
Meerut & Ghaziabad	37.73	15.18	1.83	.03	7.00	9.61	1.76	7.22	3.56	16.06	27.63
Bulundshahr	54.60	16.05	0.96	.02	4.67	3.69	0.81	4.80	1.63	11.80	26.61

Source : Calculated from Primary Census Abstract and General Population Tables, Various Census Issues, Census of India, 1991, 1981, 1971.

Table 5-k

Percentage Share of Workers of the Delhi & its Hinterland Region - 1991

	I	II	III	IV	Va	Vb	VI	VII	VIII	IX	WPR
Delhi	1.12	0.85	0.64	0.24	1.41	23.22	7.80	23.91	8.30	32.52	31.51
Karnal	28.81	28.67	0.85	.003	2.01	6.73	2.40	9.51	2.60	18.37	28.62
Rohtak & Sonipat	39.33	16.54	0.75	0.005	1.11	8.18	2.34	7.80	4.17	19.73	29.28
Gurgaon & Faridabad	32.24	12.52	0.75	0.52	1.11	5.27	1.97	7.55	3.77	17.64	26.86
Mahendragarh	49.10	10.35	0.80	0.29	1.55	3.75	2.79	7.60	2.44	21.29	25.31
Alwar	63.87	7.55	1.07	0.53	1.76	5.71	1.71	5.35	2.17	10.29	30.37
Meerut & Ghaziabad	29.72	18.00	0.99	0.01	2.35	15.05	2.83	10.28	3.82	16.90	27.87
Bulundshahr	45.91	21.77	0.60	0.01	1.78	6.73	1.04	7.47	2.17	11.87	26.60

Source : Calculated from Primary Census Abstract and General Population Tables, Various Census Issues, Census of India, 1991, 1981, 1971.

CHAPTER 6

TRENDS AND COMPOSITION OF WORKERS IN MANUFACTURING SECTOR OF DELHI AND ITS HINTERLAND

This chapter tries to examine the structure of industrial workers in the metropolitan city of Delhi and its hinterland. It analyses the various changes within the composition of industrial structure for Delhi and its peripheral districts during the last four census periods from 1961-1991.

The analysis in this chapter is an attempt to expose the core-periphery relation with regard to industrial growth. The periphery of a city is its hinterland region that gets highly influenced by the growth patterns in the city. The city emanates spread effect/backwash effects on the hinterland region. The study here is to an attempt this kind of a relationship between Delhi. Metropolitan city, taken as the core and its peripheral districts, taken as the periphery.

In this study Delhi, U.T is taken as the core. Data availability at the city level is limited. At three digit level NIC classification only the district level data is available. Hence for the purpose of this study Delhi Census District, which is also the Union territory as a whole is taken as one unit instead of taking the city region alone. For Delhi the rural urban sectors is taken separately.

The peripheral districts that lie bordering Delhi is taken as the hinterland. These districts are of Meerut, Ghaziabad and Bulandshahr in U.P, Alwar in Rajasthan, Gurgaon, Faridabad, Mahendragarh, Karnal, Sonipat, and Rohtak districts of Hariyana. These districts also cover the National Capital Region (NCR region). The NCR consists of satellite towns within these regions. However town wise study could not be taken up. Hence data used is for the whole districts. The rural-urban break-up is not done in the periphery district.

Census data for the manufacturing sector at three digit level NIC classification was taken . The percentage of workers to total workers and the percentage of household and non-household workers in each category was calculated. They were analysed by two different methods. One on the basis of Input based categorization and other on the basis of the Use based categorization.

The classification of industries into input based and use based industries is a traditional method generally employed to analyse the composition of industries. This classification has been used by many scholars including I.J.Ahluwalia to analyse industrial growth in India. I have tried to follow the classification system suggested by Ahluwalia in her book. 'Industrial Growth in India'. However some changes has been made to suit to my study. Two groups, Non-Metallic Mineral based Industries' and others (mainly repair services) has been

added to the input based classification. And another group of 'other' which consists of miscellaneous industries has been added to the Use-based classification.

Input based categorization divides the whole industries into three groups namely, Agro-based industries, Metal Based industries, Non Metal Mineral based industries, Chemical based industries and others. This kind of categorization would explore the growth and structure of traditional industries vs. Modern industries,, polluting industries etc.

The Use based categorization consists of basic industries, intermediate industries capital goods industries, other industries, and consumer goods industries. Consumer goods industries are further classified into durable and non-durable goods industries.

This chapter is divided into four sections. The first section analyses work structure on the basis of Input-based categorization. The second section deals with Use-based categorization,. The third section analyses the performance of Delhi Vs. other NCR districts on the basis of the above categories. And the final section gives the conclusion.

Note : For all references to two digit classification refer Table 6-1(a) to 6-1(h). For all references to three digit classification refer Tables in the appendix II Table 1 and 8.

6.1 INPUT BASED CATEGORIZATION

Among the input-based classes Agro-based industries dominated the other sectors in all years and in most districts of National Capital Region (NCR) (Table 6.2-a). However, this sector is declining fast. From about 60 to 85% of the manufacturing sector workers engaged in this sector in 1961 it declined to 40 to 45% in 1991 in most districts. In Delhi, Rohtak and Sonepat and Gurgaon and Faridabad metal based industries have emerged as the dominant sector by 1991. The agro-based industries are being increasingly replaced by metal based industries. Chemical based industries are also growing in general but its base is very narrow so it has not been able to create a significant dent in the other sectors. Non-Metallic Mineral based industries has a large share of workers in the peripheries. While it has declined in Delhi U.T other industries which mainly consists of 'Repair Services' has become prominent within Delhi U.T while in some districts of th peripheries has declined.

Within the agro-based industry the dominant major groups were Manufacture of Food Products (Group 20-21) Manufacture of Cotton Textiles (Group 23)[1]. Textile products (Group 26) Wood and Wood Products (Group 27) and Leather Products (Group 29). This is common to all NCR districts.

The decline of the share of workers in Agro-based industries between '61 and '71. Again the decline was higher in '81 - '91 (Table 6-2b)The

[1] For all the Two-digit classification refer (Table 6.1-a to 6-1(h).

greatest decline in all year was in Cotton Textiles (Group 23), Wood and wood products (Group 27) and leather products (group 29). During '81 - '91 sugar products industry (minor group 207, 29) and textile fabrics also had declined in the share of workers (minor group 265).

In the metal based industries the dominant sectors were manufacture of metal products and parts (group 34) ; other manufacturing industries (group 38). But two district in Delhi and Gurgaon and Faridabad has a great diversity of metal based industries. They have significant shares of workers engaged in manufacture of machinery and equipment (group 35-36). Gurgaon and Faridabad has a significant percent of workers in Transport sector (group 37) also.

There was a general rise in percentage of workers in metal based industries throughout the period 1961-91. While the decade of 1961-71 and 1981-91 recorded greater change in percent of workers. In 1971-81 there was a slow down in the growth. A few districts even showed a decline in the period. The slow down, in the decline of Agro based industries during 1971-81 and rise of metal based industries after 1981 largely corroborates to the thesis put forward by Ahluwalia[2] and others that since the mid sixties than had been industrial stagnation.

[2] Ahluwalia, I.J., Industrial Growth in India : Stagnation since the mid sixties; pp. 7; 1985, O.U.P., Delhi.

TABLE 6-1 PERCENTAGE OF TOTAL WORKERS AT TWO DIGIT LEVEL

TABLE6-1A

NIC_CODE	DELHI 1991	1981	1971	1961
20-21	3.59	6.63	5.53	4.66
22	0.71	0.77	1.03	0.00
23	3.28	7.67	10.94	15.82
24	0.23	0.15	0.20	0.00
25	0.06	0.09	0.09	0.00
26	12.08	15.93	10.75	13.91
27	4.64	5.43	6.20	8.28
28	7.95	8.17	9.28	10.92
29	3.33	2.12	3.64	6.85
30	2.95	2.58	2.55	3.81
31	7.18	5.53	3.14	0.00
32	3.00	4.35	8.30	11.28
33	1.76	2.92	2.24	5.26
34	12.73	7.23	7.32	11.64
35	3.56	5.75	5.08	0.00
36	9.73	5.58	4.00	2.67
37	4.19	3.09	2.73	1.57
38	5.41	6.84	8.48	3.32
97	13.64	9.18	8.51	0.00

TABLE 6-1B

BULUNDSHAHR 1991	1981	1971	1961
13.21	15.56	13.42	14.74
0.80	0.00	0.16	7.14
7.71	12.72	9.43	20.34
0.35	0.00	4.50	0.00
0.15	0.00	0.32	1.37
8.25	18.28	15.19	12.25
13.35	14.22	17.54	16.03
1.51	1.04	0.57	0.00
2.08	1.79	5.46	0.00
1.44	0.21	0.33	6.96
1.49	0.40	0.12	0.00
12.74	11.15	10.93	11.62
2.55	0.95	0.33	0.00
5.43	6.58	7.96	5.84
3.63	1.16	1.24	0.00
1.11	0.26	0.19	0.00
0.97	0.00	0.18	0.81
11.04	3.43	5.92	2.90
12.19	12.25	6.23	0.00

Table 6.1 c

NIC_CODE	ALWAR 1991	1981	1971	1961
20-21	11.17	10.29	7.16	5.11
22	0.50	0.00	0.44	0.00
23	3.28	7.15	7.01	22.23
24	3.65	2.83	0.48	0.00
25	0.12	0.00	0.41	0.00
26	0.05	17.26	13.36	8.78
27	13.51	14.34	18.59	18.91
28	1.89	1.90	0.57	0.64
29	6.88	9.05	16.88	22.24
30	2.98	1.11	0.31	0.00
31	2.65	0.00	0.09	0.00
32	17.25	15.69	13.18	16.58
33	3.94	0.78	0.15	0.00
34	5.74	5.53	3.16	2.30
35	3.79	0.43	0.53	0.00
36	0.33	0.00	0.02	0.00
37	2.90	0.59	0.02	0.00
38	11.19	4.10	14.37	3.20
97	8.19	8.93	3.27	0.00

TABLE 6.1E

Table 6.1D

ROHTAK &SONEPAT 1991	1981	1971	1961
9.86	12.11	8.38	15.10
0.98	0.00	0.16	0.00
2.20	6.66	7.85	15.31
0.27	0.00	1.59	0.00
0.09	0.00	0.08	0.67
2.64	10.88	11.08	11.67
6.27	5.77	8.53	10.27
1.86	0.82	0.97	0.00
1.74	3.55	9.60	15.16
1.97	2.03	1.70	0.00
2.70	2.10	2.18	0.00
30.23	17.41	20.25	17.71
2.57	4.89	1.40	0.00
8.00	8.40	8.73	5.09
2.44	1.54	0.91	0.00
2.35	2.06	0.91	0.00
6.31	7.00	7.60	4.73
9.74	2.51	3.80	4.29
7.76	12.26	4.29	0.00

TABLE -6.1F

	KARNAL				FARIDIBAD &GURGAON			
	1991	1981	1971	1961	1991	1981	1971	1961
NIC_CODE								
20-21	13.07	16.06	11.12	14.30	4.07	3.69	4.99	8.87
22	0.30	0.00	0.18	0.00	0.13	0.00	0.12	0.00
23	2.40	17.39	11.70	14.60	2.53	3.98	8.52	8.90
24	0.15	2.37	1.91	0.00	1.68	0.10	0.48	0.00
25	0.16	0.00	0.50	0.69	0.11	0.00	0.09	0.00
26	3.54	14.23	9.60	14.79	3.13	10.18	6.35	14.83
27	10.16	5.45	10.01	10.75	3.88	4.41	7.44	11.88
28	2.88	0.80	0.71	0.00	3.52	3.14	3.36	0.01
29	8.78	3.31	10.54	16.40	3.14	3.02	8.44	26.82
30	2.16	3.18	1.46	0.00	1.99	1.27	0.87	0.00
31	1.82	0.98	0.33	0.00	4.43	4.59	4.74	0.00
32	14.78	9.29	19.39	18.10	7.87	12.94	14.36	19.33
33	1.37	2.59	2.13	0.00	4.98	6.05	4.75	2.23
34	8.41	4.23	5.25	6.29	8.02	10.27	7.58	2.95
35	1.84	1.20	3.35	0.00	21.73	11.95	11.85	0.00
36	0.81	0.00	0.35	0.00	5.31	5.51	5.81	0.00
37	0.89	0.23	0.29	0.00	7.73	2.93	4.47	0.00
38	12.85	2.76	3.78	4.08	10.16	5.79	3.41	4.18
97	13.60	15.94	7.40	0.00	5.60	10.18	2.38	0.00

TABLE 6-1G

	MAHENDRAGARH			
	1991	1981	1971	1961
NIC_CODE				
20-21	9.58	7.46	6.31	6.03
22	0.11	0.00	0.00	0.00
23	0.96	3.72	2.59	12.75
24	0.11	0.00	0.00	0.00
25	0.03	0.76	0.00	0.00
26	1.57	10.69	12.17	10.87
27	21.35	12.13	14.06	12.85
28	0.69	2.46	0.50	0.00
29	7.38	7.50	15.90	25.54
30	0.36	1.16	0.10	0.00
31	0.58	0.00	0.89	0.00
32	21.99	21.19	31.13	21.48
33	1.68	0.54	0.40	0.00
34	6.30	9.22	6.40	4.18
35	0.53	0.56	0.69	1.64
36	0.37	0.00	0.05	0.00
37	1.38	0.00	0.05	0.00
38	9.62	4.98	6.04	4.66
97	15.41	17.62	2.73	0.00

TABLE 6-1 H

	MEERUT &GHAZIABAD			
	1991	1981	1971	1961
NIC_CODE				
20-21	12.67	15.63	17.14	19.49
22	1.61	1.04	0.88	0.00
23	17.03	21.64	20.55	28.02
24	0.59	0.23	0.63	0.72
25	0.20	0.00	0.29	2.48
26	2.97	10.70	9.32	9.65
27	7.25	6.13	8.75	9.56
28	3.38	2.20	2.13	0.79
29	2.60	1.89	4.71	6.95
30	2.48	1.17	0.58	0.00
31	3.60	2.28	0.70	0.00
32	10.61	5.22	10.36	9.13
33	4.21	2.59	1.65	1.39
34	6.76	7.05	8.65	7.68
35	4.81	2.85	3.30	0.00
36	2.15	1.17	0.45	0.00
37	1.34	0.52	1.07	0.87
38	7.50	4.73	5.01	3.28
97	8.23	12.96	3.83	0.00

Source : Calculated from various Census tables, Census of India.

TABLE 6.2 (a)

	PERCENTAGE OF INDUSTRIAL WORKERS ACCORDING TO INPUT BASED CLASSIFICATION								
		DELHI	RO$SONE	GU&FA	KAR	MAH	ME&GH	BULU	ALWAR
AGRO BASED IND	1991	35.86	25.42	23.93	41.46	41.79	47.95	47.93	45.28
	1981	46.96	37.92	27.95	58.38	53.51	57.31	61.10	57.17
	1971	46.82	47.12	38.48	54.43	51.52	64.11	63.92	57.42
	1961	60.44	68.18	64.30	71.53	65.04	77.66	78.84	77.91
METAL BASED IND	1991	37.38	30.81	54.08	26.18	19.88	26.95	23.89	27.22
	1981	31.40	25.15	35.97	10.79	18.31	19.36	11.89	10.41
	1971	29.32	23.46	32.66	14.65	13.63	20.50	15.18	12.65
	1961	24.46	14.11	15.88	10.37	10.02	13.21	9.54	5.50
CHEMICAL BASED IND	1991	8.15	2.74	4.02	2.73	0.61	3.59	2.44	3.79
	1981	6.06	2.25	2.43	3.11	1.39	1.46	0.43	1.01
	1971	4.39	1.74	1.69	1.36	0.84	0.79	0.31	0.31
	1961	3.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NON METAL MINERAL BASED	1991	4.98	31.49	11.56	16.04	22.31	13.22	14.40	16.47
	1981	6.38	18.27	15.99	10.07	25.36	6.90	11.10	14.28
	1971	9.29	21.70	17.60	19.06	31.28	10.79	10.61	11.69
	1961	11.28	17.71	19.82	18.10	24.93	9.13	11.63	16.58
OTHERS	1991	13.64	7.61	6.11	13.60	15.41	8.29	12.33	7.25
	1981	9.18	14.47	11.98	17.66	1.43	14.97	13.67	17.14
	1971	10.12	4.19	5.27	10.43	2.73	3.81	9.98	17.92
	1961	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Source : Calculated from General Economic Tables, Census of India, 1961, 1971, 1981, 1991.
Note : For three digit level desegregation of input based classification see Appendix table on input based classification.

TABLE 6.2 (b)	CHANGE IN PERCENTAGE OF INDUSTRIAL WORKERS IN INPUT BASED CLASSIFICATION								
		DELHI	SONE	GU&FA	KAR	MAH	ME&GH	BULU	ALWAR
AGRO BASED IND	1991-1981	-11.10	-12.50	-4.02	-16.92	-11.72	-9.36	-13.17	-11.89
	1981-1971	0.14	-9.20	-10.53	3.94	1.99	-6.79	-2.81	-0.25
	1971-1961	-13.62	-21.06	-25.82	-17.09	-13.53	-13.55	-14.92	-20.49
METAL BASED IND	1991-1981	5.98	5.66	18.10	15.39	1.57	7.59	12.00	16.81
	1981-1971	2.08	1.69	3.32	-3.87	4.68	-1.14	-3.29	-2.24
	1971-1961	4.86	9.35	16.78	4.28	3.61	7.29	5.64	7.15
CHEMICAL BASED IND	1991-1981	2.09	0.49	1.59	-0.38	-0.78	2.13	2.01	2.78
	1981-1971	1.67	0.51	0.74	1.75	0.54	0.67	0.11	0.70
	1971-1961	0.58	1.74	1.69	1.36	0.84	0.79	0.31	0.31
NON METAL MINERAL BASED	1991-1981	-1.40	13.22	-4.43	5.97	-3.05	6.32	3.30	2.19
	1981-1971	-2.91	-3.42	-1.61	-9.00	-5.92	-3.90	0.49	2.58
	1971-1961	-1.99	3.99	-2.22	0.96	6.34	1.66	-1.01	-4.89
OTHERS	1991-1981	4.45	-6.86	-5.88	-4.06	13.98	-6.68	-1.34	-9.88
	1981-1971	-0.94	10.28	6.71	7.23	-1.30	11.16	3.68	-0.79
	1971-1961	10.12	4.19	5.27	10.43	2.73	3.81	9.98	17.92

Source : Calculated from General Economic Tables, Census of India, 1961, 1971, 1981, 1991.
Note : For three digit level desegregation of input based classification see Appendix table on input based classification.

The increase in metal based industries was mainly in other manufacturing industries (group 38) and manufacture of metal products except machinery and equipment (group 34).

The chemical based industry have very weak share of workers in this region. Only Delhi recorded significant percent of 8%. All other districts recorded less than 4% in all years. all districts experienced modest charges in all decades. Two districts even had its share decline in 1981-91. Chemical based industry is highly capital intensive. This industry has recorded the highest value addition during 1971-81. It is also oriented towards urban areas and this orientation has been increasing over time[3]. This explains the rise of this group within Delhi which it stagnated in the peripheral region.

This is a clear distinction in the pattern of workers engaged in Non-Metal Mineral Based Industries. (NMMB) between Delhi and the rest of the region. While NMMB industries has declined from 11.28% in 1961 to 4.98% in 1991 in Delhi region. In most peripheral districts there has been a rise in this industry group.

6.1 (a) Agro based industries

There is pervasive decline within share of workers in cotton textiles and textile products n all districts of NCR region. The cotton textiles (23 group) like handloom, khadi powerloom and mill products were

[3] Mohan, Rakesh, Industry and Urban Employment, 1961-81, EPW, Nov 4-11, 1989.

declining in all decades. This phenomenon is observed in the non-NCR regions of U.P, Rajasthan, and Haryana as well. The textile garments manufacture (minor group 265)[4] was a prominent group and growing too household workers. Only Delhi had lesser share of its workers as household workers. With the general decline of these sections the share of household workers declined to negotiable levels by 1991. This suggests the rise of large scale firm which engage the remaining small share of workers in non-house hold work. The traditional industries of the region, which used local resources and catered to the local market is declining.

6.1 (b) Metal Based industry

In 1961, the maximum percent of workers were concentrated in two minor groups, i.e. manufacture of mental products except machinery and equipments, not elsewhere classified (n.e.c) (Minor group 349) and production of jewelry and related articles (minor group 383). Approximately 6% of total manufacturing workers were in metal products while around 4% was a jewelry articles in all districts.

The two group 349 and 383 had more than 50% of their workers engaged in household work. In all districts. In some districts it was higher than 70%. It suggests again the existence of 'traditional skill based industry of the region. Again Delhi is an exception as its household share is much lesser. Significantly both these groups is

[4] For all references at three digit level refer Appendix tables.

declining till 1991. Except for Rohtak and Sonepat and Alwar in jewellery manufacture in all other districts these two groups have virtually disappeared along with sharp shrinking of household sector. Here again evidence suggests the decline of traditional industry and 'deskilling' of traditional industrial workers.

During the period 1961-71, there is a clear indication of (a) rise of modem metal industry (b) increasing diversification of metal based industries in almost all NCR region.

The greatest rise in share of workers was in fabricated metal products (minor group 341) and manufacture of hand tools and general hardware (minor group 343) . Then two groups accounted for 4 to 6% of total manufacturing workers in 1971 in almost all districts. This two groups continue to have this share of workers is almost all districts till 1981. This shows the rise of modern metal based industries. Apart this almost all districts show divergent path in rise in share of workers. Delhi recorded growth in general purpose non-electrical machinery (356 minor group, 2% workers) vehicles (minor group 373, 374 and 375, 1.9%) and miscellaneous products (M.G. 389, 5.2%). Rohtak and Sonepat, Gurgaon, Faridabad and Karnal had increased shares in iron and steel (M.G. 330 AND 331). Similar rise was recorded for agricultural machinery (minor group 350) in Gurgaon and Faridabad, Rohtak and Sonepat. Cycle and rickshaw at Rohtak and Sonepat, Refrigerators and air conditions (355 group) and machine tools (in 4, 357) in Gurgaon and Faridabad.

Thus there is evidence for structural diversification of industries in the region during 1961-1971.

During 1971-81, the same groups continue to dominate the metal industry. However, there is no evidence of any significant rise of these groups. But structural diversification continue in this period also. In Delhi share of workers increased in iron and steel (MG 330 & 431) electric lamps, fans and other electrical goods (363 & 366). Delhi shows greater rise in share in electric and electronic goods. Mahendragar experienced rise in share of workers of metal cutlery (MG 346) ; Gurgaon and Faridabad in electric goods (M.G. 363, 364).

During 1981-91, the metal based industry witnessed greater shift in share of workers compared to 1971. In this period, however, two aspects needs attention (I) Thinning of the structural base of industrial workers to a few minor groups in all districts except Delhi (ii) Burgeoning growth of a few specific minor groups.

In Delhi, the share of workers is found spreading to other section as well. The workers in kitchen ware, cutlery (346 mg) machine tools and accessories (357 mg), vehicles (3724373 mg), manufacture of cable wire (361 : mg) domestic electric appliances (363 & 364 mg) electronic appliances (3654366 mg) all increased.

The largest share of workers, and growing, was treatment or coating of metals and general mechanical engineering on a subcontract basis (345 mg, 6%). This group had only 2% workers in 1971 and 1981.

Thus there is clear evidence of 'sub contracting' of industrial work in Delhi. Manufacture of metal products (n.e.c mg 349) which declined in 1971 to insignificant levels also increased in 1991 to around 2% with a rising share of household workers.

In the other NCR districts there was decline of general hardware (mg: 343) and jewellery products (mg; 383).

The rise was highest in manufacture of metal products n.e.c (GROUP 389). This group had very negligible percent of workers till 1981. IN one decade, 1981-91, this sector boomed from near zero level to approximately 8% of workers. No other group has recorded growth as much as this group. Obviously the rise in metal based industry in 1981-91 is mainly due to this one sector. Interestingly, this sector also has a has a share of approximately 70 to 80% of workers in household sector in all districts. However, this group has a secular fall in Delhi. This group produces small metal products that are not machinery's and equipment and produced at the household level. This given evidence that workers are getting concentrating to low paid household work in the peripheries of Delhi which the converse is term for Delhi.

Also metal coating and plating industry (mg : 345) marked a rise from negligible level to approximately 1.5 to 2% in all districts depicting the growth of small subcontracting firms.

Our district Gurgaon+Faridabad, experienced rising share of workers in a greater number of metal based industry. Air conditioning and refrigeration (mg : 355); machine tools (35 : mg) vehicles and parts (mg : 372, 373 and 374) agricultural machinery (mg: 350), all show rise in share of workers. Marginal rise was recorded for iron and steel (mg : 330 & 331) in Meerut & Ghaziabad and vehicles (mg : 372, 375 and 374) in Alwar.

All the remaining industries in all districts were declining :

It suggests that metal industry in the region is getting concentrated in a few sectors. This is contrary to Delhi while Delhi experienced greater spread in 1991, its peripheral districts had a reduction in the dispersal of industrial structure. In Delhi the maximum percent is recorded in sub contracting industries. In its peripheries the share is rising maximum in household based industry.

6.1(c) Chemicals based industry

Chemical industry had been very weak in this region traditionally. None of the districts had any significant percent of industrial workers in this sectors in any time except for Delhi.

Delhi had the share of workers in chemical industry workers increase from 3.8% in 1961 to 8.15% in 1991. However the discerning fact is that this rise is caused by the increase in plastic industry. (mg : 313). The group had been rising over the years. Of the 8.15% in this group

accounted for 5% The plastic industry is polluting in nature. The establishment of firms is restricted in Delhi[5] yet the rise in workers is intriguing.

6.1 (d) Non-Metal Mineral Based Industries (NMMB)

The NMMB industries had declined form 11.28% in 1961 to 9.29% in Delhi. Fruther to 6.38% in 1981 and 4.98% in 1991. Clearly this group is losing grounds in the Delhi U.T. This group mainly consists of structred clay products and regractory products that are used for construction purpose. While the construction sector is booming within Delhi U.T NMMB industry actually be rising.

But at the same time, the peripheries in general, show a rising trend. In Gurgaon & Faridabad it had increased from 17.7% in 1961 to 21.70% in 1971, but declined to 18.27% in 1981. But it hsarply rose to 31.49% in 1991. In karnal this Suta had declined from 18.10% in 1961 to 10.07% in 1981 but increased to 16.04% by 1991. Similar trends of hsarp rise in NMMB insdustries during 1981-91 found in Meerut & Ghaziabad, Bulandshahr and Alwar also. The only districts which show soke decline in 1991 in Gurgaon & Faridabad and Mahendragarh.

The growth of this industry in the periphery particularly during 1981-91 suggests that the peripheries are being used as the source region for construction material which are required within Delhi U.T

[5] Master Plan for Delhi, 2001, August 1990, DDA, Delhi.

where construction activity is flourishing. The manufacture of construction material is polluting due to smoke and dust emanation. These industries has weakened within Delhi and developed in the peripheries.

6.1 (e) Others

The most prominent content in the group is 'Repair Services'. Repair Services has increased in Delhi U.T. from 10.12% in 1971 to 13.64% in 1991. In the peripheries there was a rise in this group during 1971-81 but most districts show a decline during 1991. Repair services are done on 'subcontracting ' basis within Delhi. The rise of the sector indicate that subcontracting work is rising within Delhi U.T.

6.2 USE BASED CLASSIFICATION

The workers were also classified into different categories based on the use that the industrial products were put to. They were classified into workers producing basic, intermediate, capital and consumer goods.

The maximum share of workers are engaged in consumer goods industry. All districts have more than 50 to 70% of their total manufacturing workers engaged in this sector (Table 6.3(a). But this sector is found declining generally. The second largest group is intermediate industry. It was declining till 1981 then started revising. Capital industry comes next. It is also found rising over the years. Basic industries is the smallest with a very narrow base.

Table 6.3 (a) Percentage of Industrial Workers According to Use Based Classification

		DELHI	SONE	GU&FA	KAR	MAH	ME&GH	BULU	ALWAR
BASIC IND	1991	2.00	2.45	1.29	0.00	1.80	4.26	2.46	4.54
	1981	3.43	4.97	6.17	4.91	2.03	2.67	0.91	4.00
	1971	2.87	1.86	5.02	2.80	10.68	1.78	0.25	0.33
	1961	5.26	0.00	2.52	0.00	7.50	1.39	0.00	0.00
INTERMEDIATE IND	1991	16.98	31.64	15.25	19.94	14.48	21.66	13.14	14.53
	1981	12.69	12.37	11.69	9.64	22.10	9.89	6.33	6.31
	1971	15.97	18.42	17.07	14.39	8.33	12.10	11.87	5.75
	1961	21.99	17.36	19.05	19.86	18.06	20.78	20.28	15.14
CAPITAL IND	1991	10.08	8.68	30.93	7.13	5.15	5.06	5.54	7.77
	1981	11.27	8.54	23.56	4.68	5.16	6.05	5.15	5.01
	1971	9.70	8.20	19.51	7.21	6.50	10.83	6.95	3.13
	1961	0.00	0.00	3.47	0.00	1.57	0.87	0.00	0.00
CONSUMER GOODS	1991	71.50	52.21	52.46	67.83	68.80	56.09	67.87	62.04
	1981	65.60	66.02	51.04	73.66	55.65	64.49	59.99	68.84
	1971	59.69	58.99	48.97	63.11	57.53	55.33	59.90	87.01
	1961	53.30	72.72	70.86	71.83	61.57	69.68	75.57	74.80
DURABLES	1991	30.17	19.28	20.48	21.83	31.46	15.32	20.38	18.36
	1981	21.38	25.78	19.54	21.28	12.54	18.83	19.17	22.44
	1971	20.16	17.81	15.63	14.66	8.33	7.95	12.43	35.09
	1961	14.05	13.61	13.35	10.78	8.04	10.02	14.91	15.88
NON DURABLES	1991	41.33	32.93	31.98	46.00	37.34	40.78	47.49	43.68
	1981	44.23	40.24	31.50	52.38	43.11	45.66	51.86	46.41
	1971	39.53	41.18	33.34	48.45	49.20	47.38	50.24	51.92
	1961	39.25	59.11	57.51	61.05	53.53	59.65	62.46	58.92
OTHERS	1991	0.00	5.02	0.06	5.10	9.76	12.93	10.99	11.11
	1981	7.00	8.10	7.55	7.11	15.06	16.90	27.61	15.84
	1971	11.76	12.54	9.42	12.50	16.97	19.96	21.03	3.78
	1961	19.45	9.92	4.11	8.31	11.30	7.29	4.15	10.07

Source : Calculated from General Economic Tables, Census of India, 1961, 1971, 1981, 1991.
Note : For three digit level desegregation of use based classification see Appendix index on use based classification.

Table 6.3 (b)

Change in percentage of industrial workers according to use based classification

		DELHI	SONE	GU&FA	KAR	MAH	ME&GH	BULU	ALWAR
BASIC IND	1991-1981	-1.43	-2.53	-4.87	-4.90	-0.23	1.59	1.55	0.54
	1981-1971	0.56	3.12	1.14	2.11	-8.64	0.89	0.66	3.67
	1971-1961	-2.38	1.86	2.51	2.80	3.17	0.39	0.25	0.33
INTERMEDIATE IND	1991-1981	4.29	19.28	3.56	10.30	-7.62	11.76	6.80	8.22
	1981-1971	-3.28	-6.05	-5.39	-4.75	13.78	-2.21	-5.54	0.56
	1971-1961	-6.03	1.06	-1.97	-5.47	-9.74	-8.68	-8.41	-9.38
CAPITAL IND	1991-1981	-1.19	0.14	7.37	2.44	0.00	-0.99	0.39	2.76
	1981-1971	1.57	0.34	4.05	-2.52	-1.34	-4.78	-1.81	1.88
	1971-1961	9.70	8.20	16.04	7.21	4.93	9.96	6.95	3.13
CONSUMER GOODS	1991-1981	5.89	-13.81	1.42	-5.83	13.15	-8.40	7.88	-6.80
	1981-1971	5.91	7.03	2.07	10.55	-1.88	9.16	0.09	-18.17
	1971-1961	6.39	-13.73	-21.89	-8.72	-4.03	-14.35	-15.67	12.22
DURABLES	1991-1981	8.79	-6.50	0.94	0.55	18.92	-3.51	1.21	-4.07
	1981-1971	1.21	7.97	3.91	6.62	4.21	10.88	6.74	-12.65
	1971-1961	6.11	4.20	2.28	3.88	0.30	-2.07	-2.48	19.21
NON DURABLES	1991-1981	-2.90	-7.31	0.48	-6.38	-5.77	-4.89	-4.37	-2.73
	1981-1971	4.70	-0.94	-1.84	3.93	-6.09	-1.72	1.62	-5.51
	1971-1961	0.28	-17.93	-24.17	-12.60	-4.33	-12.27	-12.21	-6.99
OTHERS	1991-1981	-7.00	-3.08	-7.48	-2.01	-5.30	-3.97	-16.62	-4.73
	1981-1971	-4.76	-4.44	-1.87	-5.38	-1.91	-3.06	6.59	12.06
	1971-1961	-7.69	2.62	5.31	4.19	5.67	12.67	16.88	-6.29

Source : Calculated from General Economic Tables, Census of India, 1961, 1971, 1981, 1991.
Note : For three digit level desegregation of use based classification see Appendix index on use based classification.

6.2 (a) Basic industries

Basic industries consisted of a very low share of total workers in all years. Basic industries are highly capital intensive hence the low share of workers. Basic industry workers was less than 5-6% in all districts except Mahendragarh recorded some rise in share of workers. The largest group in all districts is the iron and steel sector (mg : 330 & 331).

6.2 (b) Intermediate goods industries

The percent of workers engaged in production of intermediate goods had been declining from 1961 to 1981, then increased at a high rate in 1991 in all districts, except in Mahendergarh where it continued to decline. Also the rise of workers in Delhi is comparatively smaller than the remaining districts.

During 1961-71 the decline in intermediate goods workers were due to the decline in the share of workers in manufacture of metal products (mg : 349) from around 5 to 6% of workers to negligible levels. This group had significantly high share of household workers in 1961, as high as 60 to 70%. But along with the decline of the group the share of household industry also declined to very low levels indicating the decline of traditional metal products produced at household levels. Intermediate goods of wood also is found declining in all districts (mg : 270, 275 and 277). Only Meerut and Ghaziabad

and Bhulandshahar had significant percent of workers engaged in manufacture of vegetable oils, fish oils etc. (mg : 211 & 212) in 1961.

In almost all districts share of workers manufacturers of structural clay products mainly kiln (mg : 320) was found rising. While in Delhi this group is declining. This group is primarily a rural industry hence the rise in the peripheries while declining in Delhi. in Delhi the only group which increased significantly was wooden industrial goods (mg : 274).

During 1971-81 manufacture of structural clay products (320 : mg) which rose in the last period a declining trend in most districts including Delhi. very few districts had significant rise of workers in any group in the decades. They do not express any pattern. Different districts had rise in different groups.

During 1981-91, the decline of structural clay products (group 320) continued in most districts. But the rise of two groups are of interest here. One is the plating, polishing and general mechanical engineering done on subcontracting (group 345), the other is manufacture of miscellaneous non-metallic mineral products n.e.c (group 329). The rise in the former group is by a large scale in Delhi, and by lesser scales in the other NCR districts. The second group has risen from negligible levels to around 4 to 6% in most districts. In Rohtak and Sonepat it rose to 21%.

The decline in intermediate goods in the 80s and 70s are done to the decline of traditional input bared industries which are mainly rural sector industries with a high content of house hold workers. The decline of Agro based industries as intermediate industry show the diminishing interlinkage between agricultural sector and industrial sector in general. The rise of intermediary industries in the 80s is primarily caused by the rise of general mechanical engineering and miscellaneous non-metallic mineral industries n.e.c. This provides evidence for 'structural retrogression of intermediary industries.

6.2 (c) Capital industries

During 1961-71, the percent of workers in sector took a giant leap. From around zero percent workers in 1961 it increased to 6 & 9% of the workers of all districts by 1971. The exception is Gurgaon and Faridabad which had 19.5% of the workers in capital goods.

During 1971-81 there is stagnation by and large in the region. Four districts namely Karnal, Mahendragarh, Meerut & Ghaziabad and Bulandshahar had a decline in their share of workers in capital industries. In three districts there is marginal rise of workers i.e. in Delhi, Rohtak and Sonepat and Alwar. The share increased considerably only a Gurgaon and Faridabad.

During 1981-91, only Gurgaon and Faridabad show great rise in share of workers in capital industries. Delhi, Mahendragarh, Meerut,

Ghaziabad, experienced a fall in the share. Rohtak, Sonepat, Karnal, Bulundshahar, and Alwar showed very marginal increase in the share. Thus it could be concluded that whatever rise in share of workers in this group was achieved was done so in 1961-71. After 1971 there has been general stagnation of workers of capital industries in the region.

In most districts the only significant capital industrial group is manufacture of hard tool general hardware (mg 343). The rise in1961-71 is caused by this group. However, Gurgaon & Faridabad has its capital industry whose base is wider and diversified than all other districts. It had strong and growing share of workers in agricultural machinery manufacturing (mg : 350), machine tools (mg : 357) and vehicles indorse (mg : 373, 374 and 375) and general hardware (mg : 343). The diversified structure of industries has helped this district to have a growing share of workers in capital industries till 1991 while other districts stagnated by 1971.

Other than this district Delhi recorded some growth in vehicle manufacturing (mg : 373, 374 & 375) throughout the period apart from group 343; Mahendragarh had a large but declining share of workers in machine tools manufacturing (357 group). Karnal produced agricultural machinery also (mg : 350).

Thus, there is general stagnation in this sector in the period after 1971. The growth in the patron period is due to the capital criteria

growth there is no major changes in this sector in any district except Gurgaon & Faridabad which had diversified structure.

6.2 (d) Consumer goods industry

Consumer goods industry has the largest share of workers. Most districts recorded as high as 70% of manufacturing workers in this sector in 1962. But this sector has been losing its share since then. By 1991 only around 55 to 60 were involved in this sector. Also there has been considerable change in the composition of this sector.

During 1961-71 all districts declined their share of workers in consumer goods indorse from around 70% by different levels. The decline was by 12 to 15% in Rohtak & Sonepat, Meerut + Ghaziabad, Bulandshahar and Alwar. It was by 21% in Gurgaon + Faridabad. Karnal and Mahendragarh declined by lesser shares. Only Delhi recorded a growth in the share. It rose from 53 to 59.6% by 1971.

The decline in this sector is mainly caused by the decline in non-durable goods industry. In fact, during this period there has been a rise in the durable goods industry in all districts except Meerut + Ghaziabad and Bulandshahar. But the rise was comparatively smaller the overwhelmingly large decline in non-durables, hence the general decline in consumer goods.

The decline in non-durable goods industry in all districts is found to be mainly in handloom cotton textiles (mg : 233) water proof textiles

and fabrics (mg : 266) leather footwear (mg : 291) and manufacture of non-structured ceramic ware (mg : 323). The decline in these sectors is too large. But the growth in manufacture of leather and plaster ware (mg : 322) and manufacture of textile garments (mg : 265) compensates for part of the decline in non-durable goods.

Part of the decline in share of workers in consumer goods indorse is compensated by growth in the durable goods industry. During 1961-71 there had been a rise in the Repairing Services Groups (mg :97) in all districts. Delhi and Gurgaon + Faridabad also recorded higher percent of workers in manufacture of electric goods, fans, lamps (363 & 364 :mg) and T.V., Radio and other domestic electronic goods (365 & 366: mg). Rohtak + Sonepat had a greater share of workers in bicycles, rickshaw and parts (mg : 376).

During 1971-81, the percentage share of industrial workers in this sector rose n almost all districts except in Mahendragarh and Alwar.

However, in this period the non-durable consumer goods industry continued to decline in most districts. It increased only in Karnal and Delhi. the decline was not to the scale in 1961-71. While in 1961-71, the decline was between 10 to 15% in 1971-81 it was only less than 5% in all districts. In Delhi and Karnal it continued to grow in 1971-81 also.

In all the share of workers continued in leather footwear (mg : 291) and manufacturers of leather and plaster ware (mg : 322) which caused the decline in non-durables. But there has been also some rise in groups like Textile garments and clothing accessories (mg : 265) and manufacturers of miscellaneous metal based products n.e.c (mg: 389). Some districts like Karnal, Mahendragarh and Bulandshahar has increase in sugar confectioneries (mg : 209).

In the durable goods sector the composition have the following changes. The growth in one group, repair services n.e.c. (mg : 979) had led to the growth in durable goods in all districts. Delhi, on the other, recorded moderate growth in all durable goods sector but did not have major growth in repair services.

Thus the rise in consumer goods industry in 1971-81 was primarily due to repairing services (mg :979) textile clothing accessories (mg : 265) and miscellaneous products n.e.c. (mg : 389) though the rise I group 389 was marginal.

During 1981-91, the trend is of general stagnation or decline. Rohtak + Sonepat, Meerut + Ghaziabad , Karnal and Alwar had declined by 6 to 13%. Bulandshaher and Gurgaon + Faridabad stagnated at the same level as in 1981. Only two districts, Delhi and Mahendragarh showed substantial rise.

Again during this period also the decline of non-durable goods continue in all districts. However in this decade it is also found that while the state average of Haryana and UP excluding NCR districts are rising with regard to non-durable goods it is declining in the NCR districts. Only Rajasthan has similar trends to Alwar.

The composition of non-durable goods in this decade had some charges. The decline I all districts was largest in one group in the manufacture of textiles and accessories (mg : 265). From levels as high as 7 to 10% in most districts it declined to near zero levels. Equally prevalent was the fall in manufacture of cocoa products and sugar confectioneries (mg: 209), leather footwear (mg : 291) in Alwar and Rohtak and Sonepat.

Among the rising groups the one group that is most prevalent in manufacture of miscellaneous products (mg : 389), which has a high share of household workers, in all districts except Delhi. Peculiarly, in Delhi this group is declining. There was also the rise of coating of metals and plating done on a subcontract basis (mg : 345). In this group the rise was maximal in Delhi at around 6%. All other districts showed moderate rise.

The decline in the declining industries in greater than the rise of the rising industries hence the general fall in share of workers in non-durable goods.

The composition of durable goods industry shoed raised trends in 1981-91. It was found declining in Rohtak + Sonepat, Meerut + Ghaziabad, and Alwar. It was stagnant n Gurgaon + Faridabad and Karnal. Share of workers increased in Bulandshahar, Mahenragarh and Delhi.

The largest decline was in miscellaneous repair services (mg :947) in all districts except Delhi, Mahendragarh and Rohtak + Sonepat. In Rohtak + Sonepat the decline was maximum n manufacture of rickshaws, cycles, and parts (mg : 36).

The rising sectors were wooden furniture's, and fixtures (mg : 276), repair of household electrical appliances (mg : 971 & 972) in all districts, repair of small motor vehicles (mg : 974) in Mahendragarh and Bulandshahar, repair of bicycles and rickshaws in Karnal and Mahendragarh.

To conclude the consumer goods industry in the whole region is declining in the period 61-71, mainly due to decline in non-durable goods industry. Durable goods industry was rising in the period. However, in Delhi there was no decline in non-durable goods hence the share increased.

The decline of non-durable goods is concentrated to a few sectors like handloom cotton, leather footwear, leatherwear and ceramics which are all traditional industries. The growing groups are miscellaneous

metal products and sub contracted engineering works, especially in 1981-91.

The changes in durable goods industry is primarily governed by repair services. The rise of this sector led to rise in durable goods industry in1961-71, and 2971-81. Its decline led to decline of durable goods share of workers in 1981-91. Repairing sector continues to be the dominant group in durable goods industry.

6.3 Delhi Vs. Other NCR districts

The trends in the striker of industrial workers comparing Delhi with the rest of he region as Delhi is a major metropolitan city hence acts as powerful 'magnet' to its peripheral districts. The analysis reveals some interesting conclusions.

At the level of input based classification while the trends in Agro based industries and metal based industries are largely the same for Delhi and other regions in the case of chemical based industries. In all NCR districts the chemical industries was more or less stagnant in the whole period 1961-91. But in Delhi the share of workers increased from around 3% in 1961 to 8% in 1991. Chemical based industry is a capital intensive industry. It is also restricted within the capital territory of Delhi. Yet the growth of workers indicate that illegal establishments are thriving within Delhi. This being a polluting

industry it adds to the health hazards for its workers in particular and the residents in general.

Within Agro based industries all districts recorded decline of textile fabrics from 5 to 6% to zero level, Delhi also declined to 7% n 1991. But the corresponding rise in the content of non-household workers from around 85% in 1981 to 93.5% in 1991 therefore it suggests the displacement of household workers due to increasing capital content in production. The rise of wooden functions and fixtures with high content of non-household workers in Delhi suggest that same as above.

Within the metal based industries during the early period in 1961-71, the whole region show increasing diversification of industries. In 1971-81 there is general stagnation with declining trends. In 1981-91 while in Delhi there is continued diversification the peripheral districts is getting concentrated to a few sector especially miscellaneous metal products n.e.c (mg: 369). This group found declining in Delhi.

Within the use based classification basic industries, intermediate industries and capital industries of the whole region show similar trends of Delhi compared to other districts.

The composition of intermediate goods shows that during 1981-91, in Delhi the subcontracting industries of general engineering (mg : 345)

rose sharply while in other districts there was only marginal rise. On the other hand, miscellaneous non-metallic mineral products n.e.c increased to a large percent in all other districts which this was declining in Delhi.

In Delhi consumer goods industry increased continuously from 1961-91. The other industries declined in 1961-71, increased in 1971-81 and declined again sharply in1981-91.

The decline in consumer goods in peripheral districts of Delhi is due to the decline of traditional rural manufacturing sector like cotton textiles, water proof textiles, leather footwear and non-structured ceramicware. But Delhi had very negligible share of workers in these groups. The durable goods rise in peripheral districts is due to the rise of repair services while in Delhi it is due to rise of electronic and electric industry.

During 1971-81, while the 'rest of NCR' experienced growth in repairing services, and miscellaneous products, Delhi did not have any major rise in both sectors. Textile accessories grew in all districts including Delhi. Delhi also had growth in plastic industry.

During 1981-91 there is a clear evidence of 'the rest of NCR' having retrogression of industrial structure. The industrial workers were getting concentrated into a few sectors while in Delhi. There is a can of increasing structural diversity. In the last period 1981-91 the

peripheral districts are getting converted to satellite of the metropolis. The structure of industrial workers support the argument that the peripheries of the metropolis is degenerating in terms of industrial workforce structure. The concentration of workers in the peripheries is into small and miscellaneous nonmetal mineral products, miscellaneous products n.e.c and repair services.

Table 6.4 : Percent of workers in some important groups

NIC	Year	Delhi	Mahen dragarh	Roh + Son	Karn	Bulun dshah ar	Gur + Far	Mee + Gha	Alw
329	1981	0	0.95	0.17	0	0	0	0	0.58
	1991	0	6.26	21.24	9.77	2.71	0	4.93	2.24
389	1981	4.00	1.47	0.51	0.65	1.00	4.74	1.87	1.100
	1991	2.50	5.66	7.36	10.76	8.86	9.49	4.31	7.11
97	1981	9.18	17.62	12.25	15.93	12.24	10.17	12.95	8.93
	1991	13.16	15.40	7.76	13.59	12.18	5.59	8.23	8.18
Total	1981	13.18	20.02	12.93	16.58	13.24	14.91	14.82	10.61
	1991	15.66	27..32	36.36	34.12	23.75	15.08	17.47	17.53

329 – Miscellaneous non metallic mineral products n.e.c

389 – Manufacture of miscellaneous products n.e.c

97 – Repairing services

From the Table – 6 while in 1981, all districts including Delhi had a share of approximately 11% to 16% except Mahendragarh in miscellaneous non-metals, manufacture of miscellaneous goods and

repairs in 1991 there are vast changes in 'rest of NCR' vis-à-vis Delhi. In Delhi, Gurgaon + Faridabad and Meerut + Ghaziabad the rise is only by around 2%. But all the other districts show a large increase in the total by 1991. Group 329 is an intermediate industry. In all peripheral districts of Delhi. This group has increased vastly while in Delhi this group s declined. Since miscellaneous minerals are not produced at large scale it suggests the rise of 'ancillarisation' of industries in the peripheries. Ancillariary industries are known to have poor working conditions and low wage levels.

Again group 389, which is a part of the durable goods has a high concentration of household labour, as high as 70% in most peripheral districts and it is found rising along with the rise in total workers. Within Delhi, tough the concentration of household workers n this group is found rising from around 5% of workers in 1981 to 32% of the workers in the group in 1991 the group as a whole is declining. This suggests that the demand for goods of this group are being met by the peripheral districts of Delhi. While Delhi has by and large, stopped production of this group. The high concentration of household labour suggests poor working conditions.

Locally produced goods, if they are locally used, then the probability of having the repairing service of that goods at the same locality is also very high. But if goods produced are not locally used but expected to another region, then the repairing services would not be

in the region of origin but at the region of use. We find that between 1981 and 1991 there is a sharp rise in the repair services in Delhi, but all other districts show a decline in repair services during this period. It suggests that the peripheral districts are being used to produce miscellaneous goods while the metropolis is the market.

6.4 Industries that Increased/Decreased within Delhi U.T During 1981-91

Table-6.5 Percentage of workers to total manufacturing sector workers showing growth during 1981-91 in Delhi

	1991			1981			1971		
NIC	T	R	U	T	R	U	T	R	U
313	5.06	0.39	4.67	3.35	0.06	3.29	1.91	.02	1.89
345	6.21	0.31	2.09	2.09	0.03	2.06	2.02	.03	1.99
97149 72	4.52	0.31	4.21	1.22	0.02	1.20	1.13	0	1.13
974	5.43	0.37	5.06	4.40	0.19	4.21	3.99	0.15	3.84
Total	21.22	1.38	19.84	11.06	0.30	10.76	9.05	0.20	8.85

Table 6.6 : Percentage of workers to total manufacturing sector workers showing maximum decline during 1981-91 in delhi

	1991			1981			1971		
NIC	T	R	U	T	R	U	T	R	U
232	.08	.01	.07	5.20	.04	5.06	9.59	0.91	8.68
265	7.81	0.71	7.10	12.73	0.25	12.48	7.43	0.28	7.15
320	1.51	.54	0.97	2.91	1.80	1.11	4.92	4.45	0.47
356	0.30	.03	.27	2.81	.07	2.74	2.29	.04	2.25
389	2.50	.23	2.27	3.94	.10	3.84	5.27	0.14	5.13
Total	12.2	1.52	10.68	27.59	2.36	25.23	29.5	5.82	23.68

The industries that have increased maximum (See Table-7A) are manufacturer of plastic products not elsewhere classified (mg:313), General Mechanical Engineering Industries (mg:345) done on sub-contracting basis; Repair services of household electrical & electronic appliances(mg: 971 & 972) and repair of motor vehicles and motor cycles (mg:974).

In 1971 only 9.05% of the total manufacturing workers was involved in these groups. By 1981 it increased marginally to 11.06%. But by 1991 it took massive rise to 21.22% of the manufacturing workers. The rural share of these workers are only a very small percent through it increased from 0.20% to 1.38% by 1991. The rise had been primarily in the urban areas itself.

The rise of plastic industries from 1.91% in 1971 to 5.06% in 1991 is intriguing. Plastic is a polluting industry. It is a banned industry urban units. Yet its growth indicates the flouting of laws. Another group is general mechanical Engineering Consists of plating, printing, hardening, welding and other operation done on a subcontracting basis. The other rising group is the repair services. The rise of plastic industries and general mechanical Engineering Industries show that the laws relating to polluting remain simply on paper and are not complemented its spirit. Many firms work under duplicate identity. They register as firm engaged in non-polluting production and continue to work as polluting all over the region including the hinterlands. But there has been a sudden spent in the growth of the industries that produce miscellaneous products n.e.c(m4:389) (See Table-6) in the hinterland districts of Delhi, while it had been declining within Delhi. It suggests that there industries may be shifting to the hinterlands where the law as and regulation regarding working conditions and pollution are more relaxed.

There is no evidence for such a shift in the case of structural clay products and non-electrical machinery industries which were also declining. However, there two groups belong to the" Extension Industries' categorised as group III F in MPD-2000[6] which has put clamp on new industrial units within the city. These are not hi-tech

[6] Master Plan for Delhi- 2000, D.D.A, 1991.

industries. Hence there growth is being discouraged. This could be the reason for their decline.

It should be noted that total manufacturing workers in Delhi has declined in 1991 compared to 1981. Even then the rise of polluting industries and subcontracting industries within Delhi points to the general deterioration of industrial activity within Delhi.

6.5 Conclusion

From the analysis of trends found composition of the industrial workers the emerging picture is that of general retrogression of the industrial structure of the peripheries of the metropolis while increasing diversification within the metropolis.

The city hinterland relationship is essentially exploitative. The city exerts powerful backwash effects resulting in the liquidation of secondary activities and weakening of the agrarian base in the hinterland[7] (Kundu and Sharma, 1983). The decline of the agrarian sector in the periphery leads to displacement of labour who are absorbed into non-agricultural activities. However, due to the low skill levels, they get absorbed into informal and household sectors with poor wages and working conditions. They are used by large firms

[7] Amitabh Kundu and Ramesh K. Sharma, Industrialization, Urbanization and Economic Development, Urban India, December, 1983.

by extracting cheap labour through 'sub contracting' and 'ancilliarisation'.

The traditional rural based industries declined in the peripheries. Traditional skill based industries with high share of household workers like handloom, khadi, leather footwear, ceramics, and jewellery has virtually disappeared in the peripheries suggesting 'deskilling' of traditional workers and their displacement. However, this phenomenon is not very strong in Delhi as there are very few traditional industries in Delhi.

The rise of modern metal based industries was evident in all districts during 1961-71. However 1971-81, it stagnated and by 1981-91 there was great narrowing down in the structural diversity of industrial workers. The workers are found getting concentrated to a few specific groups. While Delhi and Gurgaon + Faridabad show rising trend in structural diversity. The displaced workers are getting employed in low paid ancillary industries, household industries, Construction industries and repair services. Thus the peripheral regions of Delhi is experiencing a general degeneration of industrial structure. This phenomenon is accentuated in the decade 1981-91. The periphery has become colonies of the metropolis by giving up their own traditional comparative advantages and structuring the industrial workers to produce small, low wage goods for metropolis.

Within Delhi, the most disturbing feature is the rise of subcontracting work polluting industries and repair services in the decade 1981-1991. There is some limited evidence of shifting of industries from the city to its hinterland. The decline of total workforce in Delhi, at the same time the rise of some particular groups like repair services and general Mechanical Engineering point to the rise of informal sector in the total work force. Along with it the rise fo polluting industries like plastics point a general deterioration of industrial activity within Delhi.

CHAPTER 7

INTER DEPENDENCIES AMONG DISTRICTS

To study the trends in the interrelationship among the districts regarding the structure of manufacturing sector correlation analysis was done.

The three digit level NIC classification was taken for all the eight districts total workers, household workers and non-household workers were taken as the variables. Each district consists of 168 minor group of industrial categories. The time frame is from 1961 to 1991. However in 1981 the H.H and N.H.H categories for three digit level classification at district level was not published. Hence, Correlates for H.H and N.H.H is calculated for 1961, 1971and 1991. Delhi being a Union Territory this data is available, so only for Delhi the 1981 coefficients are also calculated.

The chapter is divided into three sections. First section consists of inter-temporal correlation analysis for each district. The second section consists of inter-district correlation analysis for the four census year separately. The third section concludes the major findings.

7.1 INTER TEMPORAL CORRELATES

Correlates of Total workers

The correlation for Total workers of Delhi (Table 7-n) of 1991 to that of 1961, 1971 and 81 were continuously increasing. The coefficients were 0.11, 0.64 and 0.78 respectively. The case was similar for the coefficients of 1981 with respect to 1961 and 1971; the coefficients of being 0.12 and 0.86 respectively. This points towards a drastic change in the pattern of distribution of workers along the various industrial categories during 1961-71. Part of small correlates could be due to some limitations in the comparability of data between 1961 ISIC classification and the later NIC classification comparable. In 1961 the ISIC system of classification was followed. From 1971 the NIC system was followed. Data was made comparable by rearranging the classification. But the limitation in this exercise could partly explain the low degree of correlation between 1961 and the rest of the years. Yet, even after discounting for these limitation such low correlation could suggest a change in the distribution of workers. But the significant r values of 1981 (r = 0.61) and 1971 (0.65) with respect to 1991 implies that since 1971 more or less fixed pattern is being followed.

But the coefficients of the hinterland district display a different trend.

In Bulandshahar (Table 7-h) the coefficients of total workers for 1991 is low (in 1981 r= 0.49, 1971, r = 0.53, 1961, r = 0.22). But r of 1981 r = 0.49; 1971 is very significant at 0.86, while between 1961 is very low.

In Rohtak and Sonepat (Table 7-i) the r values of 1991 with 1981, 1971 and 1961 were very low at 0.27, 0.24 and 0.07 respectively. But r of 1981 with 1971 was 0.82. between 1971 and 1961 it was 0.45.

In Meerut and Ghaziabad (Table 7-j) the r values for 1991 with respect to 1981, 1971 and 1961 are 0.54, 0.60 and 0.40. While between 1981 and 1971 it is 0.81. Between 1971 and 1961 it is 0.56. The rising r tell 1971 but the decline during 198191 signifies a structural change during this decade.

In Mahendragarh (Table 7-k) the r values for 1991 with respect to 1981, 1971 and 1961 were significant and positive at 0.62, 0.61 and 0.30 respective. Here again the r values for 1981 and 1971 is greater (r=0.80) than that of 1991-81. 1971-61 r values are significant at 0.57.

In Karnal, (Table 7-l) the r for 1981, and 1971 and 1961 with respect to 1991 were insignificant at 0.31, 0.43 and 0.28 while 1981-71 r was 0.74. the r of 1971 and 1961 was 0.45.

The Gurgaon & Faridabad (Table 7-m) the r values for 1991 with 1981, 71 and 61 was very low at 0.11, 0.01 and –0.04. But between and 1971 values are 0.74. 1971-61 values are 0.37.

In Alwar (Table 7-g) the values for 1941 are significant at 0.61 in 1981, 0.63 in 1971. Here also the correlates for 1981 and 71 are higher at 0.72 while 1971-61 are 0.39.

The correlation of Total workers for 1991 with respect to 1981, 1971 and 1961 was found to be very weak. Most districts recorded insignificant correlates for all years. Four districts namely Meerut and Ghaziabad, Karnal, Bulandsharhar and Alwar recorded fall in the degree of correlation between 1981 and 1991 compared to 1971 and 1991. Interestingly, the correlates of 1981 to 1971 in all districts were found significant and positive, while the r with 1991 is very weak.

It could be argued that the distribution of workers had changed vastly during 1961-71 in all districts of NCR and Delhi. The pattern that emerged in 1971 was followed largely till 1981. In 1991, while in Delhi the pattern continued, in the hinterland there has been considerable change in structure of workers.

Correlates of Household workers

In Delhi, (Table 7-n) the correlation of household workers (HH) for 1991 to 1981 and 1971 was high at 0.72 and 0.73 while with 1961 it

was only 0.21. This pattern is quite similar to the total workers structure of Delhi.

On the other hand, all the fringe area districts divulge different patterns. The correlates for 1971 and 61 to that of 1991 seems to be very weak in the case of all districts except Alwar and Mahendragarh. The coefficients were :

Bulandshahar	0.43, for 1971 and 0.13 for 1961,
Rohtak & Sonepat-	0.35 for 1971 and 0.05 for 1961,
Meerut & Ghaziabad	0.41 for 1971 and 0.35 for 1961
Karnal	0.34 for 1971 and 0.10 for 1961
Gurgaon & Faridabad	0.11 for 1971 and .004 for 1961
Alwar	0.75 for 1971 and 0.26 for 1961

It implies almost all districts have different pattern of household work structure through out the three periods.

Non-Household Workers

In the case of NHH workers the figures for Delhi are showing a correlation that is rising positive and significant (0.12 in1961, 0.60 in 1971, 0.77 in 1981). The structure of NHH has acquired considerable

change during the 1961-71. From 1971 new patterns are emerging which ahs been largely followed in Delhi.

But the case of the other districts are very different from that of Delhi. All the districts show very low correlation for 1961 and 1971 to 1991.

Bulandshahar showed 0.40 for 1971 and 0.33 for 1961

Rohtak & Sonepat showed 0.23 for 1971 and 0.17 for 1961

Meerut & Ghaziabad had 0.64 for 1971 and 0.43 for 1961

Mahendragarh had 0.26 for 1971 and 0.18 for 1961

Karnal had 0.38 for 1971 and 0.31 for 1961

Gurgaon & Faridbad had .01 for 1971 and -0.05 for 1961

Alwar had 0.39 for 1971 and 0.18 for 1961.

The r values for NHH for all districts are insignificant. It implies the structural change that has occurred in the region since 1971.

Inter-Sectoral Correlates

The correlation between Total workers and HH workers in Delhi was increasing from 0.50 in 1961 to 0.76 in 1984 but it declined to 0.62 in 1991. Which the NHH workers correlation coefficient was 0.99 for all years. also the r between HH and NHH were found to be rising from 0.42 I 1961 to 0.74 in 1981, but it declined to 0.57 in 1991. These

trends shows that till 1981, the industrial structure was such that there was an increasing convergence of HH and NHH sectors. But since 1981, a specific group of industries are being marked as HH industries. The distribution of HH workers is increasingly getting concentrated to a few specific industrial sectors while NHH continue to occupy its traditional forte. Essentially, NHH industries is emerging in Delhi since 1981, while HH type is declining and is getting concentrated to a few group.

In the case of the hinterland districts of Delhi, the r values between HH and NHH was less than 0.5 and declining in all the years for Gurgaon & Faridabad, Meerut & Ghaziabad, Rohtak & Sonepat. In other districts like Bulundshahar, Karnal, Alwar and Mahendergarh also the correlation is low, but one significant variation is that the correlate was positive, rising and significant from 1961 to 1971 and declining thereafter in 1971.

This indicates that while in some districts even by 1961, the industrial activity was already diverged into HH type and NHH type in other districts the industrial activity was converging with reduction in the HH and NHH category differences.

The correlation coefficient of Total Workers and HH industrial workers for all districts were declining from high correlation in 1961 to very low correlation in 1991. While the trend was vice versa in the case of

T.W and NHH in all districts. This points to the arguments that there is a clear divergence between HH and NHH and the industrial structure is biased against HH workers.

From Table 7-g to 7-n the following trends are derived (1) In Delhi the structure of Industrial workers changed considerably during the period 1961-71. Since 1971 a uniform pattern emerged.

In NCR districts in 'Rest of NCR' the structure of industrial workers experienced considerable change during 1961-71. The pattern was more or less constant during 1971-81. But in 1991, while in Delhi the pattern continued in 'rest of NCR' a new structure emerged.

(2) The pattern of household industrial workers of 1991 in Delhi is consistent with 1971 and 1981 but had changed greatly during 1961-71.

In 'rest of NCR' the structure of household industrial workers has marked significant variation during the period 1971-91 compared to earlier periods.

(3) The non-household industrial structure of 1991 is consistent with that of the previous years in Delhi.

In 'rest of NCR' districts the non-household industrial structure has acquired new pattern in the period 1971-91 compared to earlier period.

(4) There was increasing convergence of household industrial sectors and non-household industrial sectors in Delhi till 1981. But since 1981, the House hold industries are getting agglomerated to a few specific industries while there is increasing structural diversity in the non-household industries.

In 'rest of NCR' some districts experienced convergence of household and non-household sectors till 1971 but afterwards all districts experienced the divergence of household and non-household in two district sectors.

7.2 INTER-DEPENDENCIES AMONG THE NCR DISTRICTS

The correlation matrix was calculated for Delhi and NCR districts at three digit level of classification for 1961, 1971 and 1991. Separate matrics were calculator for household industrial workers (HHI) and non-household industrial workers (NHHI). From the matrices the following trends were arrived at.

Non-household workers - Delhi Vs. Hinterland districts

1. IN 1961 none of the NCR districts manifested a significant correlation (r) to Delhi with respect to nhh workers, except, Meerut & Ghaziabad which showed on r of 0.57 (Table 7-a).

2. In1971 two districts namely Meerut + Ghaziabad and Rohtak + Sonepat show a rise in r with Delhi which is also significant and

positive. The r being 0.64 and 0.55 respectively. Mahendragarh and Bulandshahar also show an increase in r with Delhi during 1961-71 period though not significant. The remaining three districts had a decline in r with Delhi during 1961-71. (Table 7-c).

3. In 1991, none of the NCR districts have a significant r for nhh workers with Delhi for Gurgaon+ Faridabad and Mahendragarh there was a rise in r but not significant. Other districts had a decline in r in 1991 compared to 1971. (Table 7-e).

The above trends suggest that Delhi had a very different structure of non-household industries from the NCR in the period earlier to 1961. After 1960's and before 1971 the industrial structure of Delhi was getting increasingly reflected in a larger degree and also larger area of the NCR districts. But since 1971 the NCR districts have followed a different path of nhh workers in the districts compared to Delhi.

Inter dependencies of hinterland districts for Non household workers

Taking the inter-NCR districts r of nhh the following trends were revealed.

1. In 1961 (Table 7-a) Gurgaon + Faridabad and Mahendragarh had no significant r with any of the NCR districts. Alwar had no

significant r with any district except Bulandshahar and Karnal. All other districts had significant and positive r with each other.

2. In1971, (Table 7-c) Gurgaon + Faridabad continued to have insignificant r with other NCR districts. Bulandshar had a decline in r with all the NCR districts except Alwar. Alwar had insignificant r with the remaining districts, moreover in three districts the r was falling. Rohtak and Sonepat had significant and positive r only with Meerut + Ghaziabad and Karnal, of which Karnal's r is declining. Meerut + Ghaziabad and Karnal had mixed trends with r of some districts falling while others rising in 1971. Only Mahendragarh has a rising r with almost all districts though not significant.

3. In 1991 (Table 7-e) the most common aspect is that all districts experienced an increase in r with almost all districts, through all r are not necessarily significant. Bulandshahar had positive significant and rising r with all districts except Alwar and Gurgaon + Faridabad. Alwar's r declined while the other districts had insignificant but rising r with Bulandshahar. Gurgaon + Faridabad experienced a rise in r with all districts but only its r with Alwar was significant. Karnal had positive and rising and significant r with all districts except with Grugaon + Faridabad. Mahendergarh also show the same trend of Karnal. Meerut + Ghaziabad had their r values with other districts rising in 1991 except with Rohtak +

Sonepat. It had significant and positive r with Bulandshar, Karnal, and Mahendragarh. Rohtak + Sonepat had its r values improving with all other districts. But only Karnal and Mahendragarh are significant. Alwar also had its r rising with other districts except for Bulandshahar. Its r value was significant for Mahendragarh, Karnal and Gurgaon + Faridabad.

In general, the period earlier to 1961 show that all the NCR districts largely had followed a similar pattern of industrial work structure. But during 1961-71 there are mixed trends. During this period there was a tendency among the districts to take divergent patterns of industrial work structure. But, again during 1971-91, there is a definite trend of these districts moving towards a uniform structure of industrial workers for non-household industries.

Household workers, Delhi Vs. Hinterland districts

Analyzing the correlation matrices for household industrial workers, the following trends emerged.

(i) The (Table 7-b) correlates of Delhi, HHI with the NCR district reveal that in 1961 except for two districts, namely, Gurgaon + Faridabad and Meerut + Ghaziabad, all other districts had their r values significant and positive with Delhi.

(ii) In 1971 (Table 7-d) though all the districts continue to have positive and significant r with Delhi, there is a decline in r Delhi with other districts compared to 1961. Only Bulandshahar and Meerut + Ghaziabad had rise in r with Delhi.

(iii) In 1991, (Table 7-f) two districts, viz. Mahendragarh and Alwar had insignificant and declining r with Delhi. Rohtak + Sonepat also declined but r continued to be positive and significant. The remaining four districts had increasing, positive and significant r with Delhi.

Household industry of Delhi had a similar structure to that of the NCR districts in 1961. But in 1971 most districts reveal a decline in the relationship with Delhi. This trend is reversed in 1991, and most districts show that the household industries of the districts are gaining the structure of HH industries of Delhi.

Interdependencies of hinterland districts for household workers

Analyzing the interdistrict r coefficient of the NCR region the following trends were followed.

(i) in 1961, (Table 7-b) all NCR districts were having significant and positive r with each other except with Gurgaon + Faridabad.

(ii) In 1971, (Table 7-d) by and large, the trend is that of a rising r value among most districts. But some exception were recorded. Bulandshahar had a declining r with four districts, though the r values continued to be positive and significant. Gurgaon + Faridabad had insignificant r with all districts. Karnal had declining r values with Alwar. Mahendergarh's r value declined for Gurgaon + Faridabad and Alwar. Meerut + Ghaziabad had declining r with Rohtak + Sonepat, Bulandshahar and Alwar. Alwar had declining r with all districts except with Gurgaon + Faridbad.

(iii) In 1991, (Table 7-f) almost all districts showed a further rise in r among them. Interestingly Gurgaon + Faridabad which had insignificant values with other districts in 1961 &71, had significant r in 1991. But two districts viz. Mahendragarh and Alwar lost all the r coefficient with all other districts. These two districts seem to be acquiring a structure different from all other districts in the case of HHI.

In general, prior to 1961, the interdistrict r was significant and positive. But many district experienced a change in the pattern and structure of household workers during the period 1961-71. However, after 1971 the whole of NCR region is experiencing a HH industrial structure that is common to all districts, except for Alwar and Mahendragarh.

III. Comparing the correlation matrices of HHI and NHHI it was found that the r values of all districts with Delhi HHI was greater than NHHI except for Gurgaon + Faridbad and Meerut + Ghaziabad in 1961. During the period 1961-71 the gap between r coefficient of HHI and NHHI of the NCR districts with Delhi declined, except for Gurgaon + Faridabad.

In 1991, there is a reversal of trend by which all districts show an increase in the difference between r values of HHI and NHHI . the r values of HHI are rising much above the NHHI except for Alwar and the points of argument that the process of integration of household industries and non-household industries which was set in during the period 1961-71 declined and in the period after 1971 household industries are gaining prominence in the peripheries of Delhi, when compared to NHH industries. While NHHI of Delhi is having a declining relation with its peripheries.

7.3 CONCLUSION

From the analysis the following conclusion were arrived at.

The structure of manufacturing sector had experienced considerable changes during the period 1961-71 I all districts including Delhi which made the whole region have a largely similar pattern of structure during the period 1971-81. However, during the period 1981-91 a new trend emerged in which all the hinterland districts

have a very similar structure but which is vastly different from the structure of this sector of Delhi.

In the case of HH industries Delhi express a consistent pattern being followed from 1971. During 1961-71there were changes in the structure. But the hinterland districts show very weak inter temporal retain expressing the changes that occurred during 1971-91. Since the total workers correlation also showed changes in the period 1981-91 it is possible that the changes in HH also occurred are during the period 1981-91. The HH industries are mainly agro-based traditional industries the low correlation for 191 with the past implies the decline of this traditional sector and the emergence of new groups as household industries in the peripheries.

The intertemporal coefficients for NHH industries and interdistrict correlate show that while the NHH manufacturing sector was having a similar pattern among the hinterland districts, the hinterland did not have any strong relations with Delhi. The NHH sector in the peripheries is growing in a different path compared to Delhi.

The whole region had a more or less homogeneous industrial structure till 1981. In Delhi also tend increasing homogenization of manufacturing sector continued till 1981. But since 1981, the workers are getting segregated into HH type work and NHH type. This two sectors are getting established as separate sectors with specific types of manufacturing work being done in each sector.

Table -7.a
Correlation Matrix for Non-Household Industries in NCR Districts –1961

1961		Delhi	Bulund	Gurfar	Karnal	Mahend	Mee gha	Roh son	Alwar
		nhh	*Nhh*	*nhh*	*nhh*	*nhh*	*nhh*	*nhh*	*nhh*
Delhi	nhh	1.00							
Bulund	nhh	0.46	1.00						
Gurfar	Nhh	0.13	0.10	1.00					
Karnal	nhh	0.49	0.79	0.16	1.00				
Mahend	nhh	0.23	0.36	0.23	0.42	1.00			
Mee gha	nhh	0.58	0.77	0.08	0.54	0.20	1.00		
Roh son	nhh	0.47	0.69	0.06	0.80	0.35	0.59	1.00	
Alwar	nhh	0.46	0.71	0.07	0.55	0.36	0.34	0.44	1.00

Table 7-b
Correlation Matrix for Household Industries in NCR Districts –1961

1961		Delhi	Bulund	Gurfar	Karnal	Mahend	Mee gha	Roh son	Alwar
		hh	***hh***	***hh***	***hh***	***hh***	***hh***	***hh***	***hh***
Delhi	***hh***	1.00							
Bulund	***hh***	0.52	1.00						
Gurfar	***hh***	0.01	0.00	1.00					
Karnal	***hh***	0.83	0.71	0.05	1.00				
Mahend	***hh***	0.81	0.50	0.02	0.86	1.00			
Mee gha	***hh***	0.46	0.89	-0.01	0.70	0.50	1.00		
Roh son	***hh***	0.83	0.71	0.01	0.95	0.86	0.73	1.00	
Alwar	***hh***	0.69	0.72	0.01	0.89	0.81	0.68	0.86	1.00

Table 7-c

Correlation Matrix for Non-Household Industries in NCR Districts -1971

1971		Delhi	Bulund	Gurfar	Karnal	Mahend	Mee gha	Roh son	Alwar
		nhh	***nhh***	***nhh***	***nhh***	***nhh***	***nhh***	***Nhh***	***nhh***
Delhi	***nhh***	1.00							
Bulund	***nhh***	0.46	1.00						
Gurfar	***nhh***	0.03	0.04	1.00					
Karnal	***nhh***	0.47	0.60	-0.01	1.00				
Mahend	***nhh***	0.32	0.42	-0.01	0.54	1.00			
Mee gha	***nhh***	0.65	0.42	-0.02	0.61	0.32	1.00		
Roh son	***nhh***	0.55	0.36	0.13	0.66	0.42	0.60	1.00	
Alwar	***nhh***	0.45	0.74	0.00	0.54	0.41	0.30	0.31	1.00

Table 7-d
Correlation Matrix for Household Industries in NCR Districts –1971

1971		Delhi	Bulund	Gurfar	Karnal	Mahend	Mee gha	Roh son	Alwar
		hh	*hh*	*hh*	*hh*	*hh*	*hh*	*hh*	*hh*
Delhi	*hh*	1.00							
Bulund	*hh*	0.57	1.00						
Gurfar	*hh*	0.04	0.08	1.00					
Karnal	*hh*	0.68	0.82	0.06	1.00				
Mahend	*hh*	0.68	0.81	0.02	0.95	1.00			
Mee gha	*hh*	0.48	0.72	0.04	0.71	0.59	1.00		
Roh son	*hh*	0.76	0.70	0.02	0.93	0.91	0.56	1.00	
Alwar	*hh*	0.65	0.55	0.00	0.68	0.63	0.48	0.69	1.00

Table 7-e
Correlation Matrix for Non-Household Industries in NCR Districts -1991

1991		Delhi	Bulund	Gurfar	Karnal	Mahend	Mee gha	Roh son	Alwar
		nhh	*nhh*	*nhh*	*nhh*	*nhh*	*nhh*	*nhh*	*nhh*
Delhi	*nhh*	1.00							
Bulund	*nhh*	0.40	1.00						
Gurfar	*nhh*	0.41	0.30	1.00					
Karnal	*nhh*	0.33	0.63	0.37	1.00				
Mahend	*nhh*	0.35	0.72	0.32	0.85	1.00			
Mee gha	*nhh*	0.38	0.75	0.30	0.62	0.56	1.00		
Roh son	*nhh*	0.14	0.44	0.29	0.74	0.60	0.56	1.00	
Alwar	*nhh*	0.35	0.58	0.58	0.58	0.62	0.46	0.39	1.00

Table 7-f
Correlation Matrix for Household Industries in NCR Districts –1991

1991		Delhi	Bulund	Gurfar	Karnal	Mahend	Mee gha	Roh son	Alwar
		hh	*Hh*	*hh*	*hh*	*hh*	*hh*	*hh*	*hh*
Delhi	hh	1.00							
Bulund	hh	0.72	1.00						
Gurfar	hh	0.67	0.85	1.00					
Karnal	hh	0.73	0.90	0.92	1.00				
Mahend	hh	0.48	0.61	0.85	0.70	1.00			
Mee gha	hh	0.57	0.79	0.67	0.73	0.44	1.00		
Roh son	hh	0.70	0.91	0.97	0.97	0.80	0.72	1.00	
Alwar	hh	0.42	0.47	0.75	0.57	0.95	0.35	0.66	1.00

Table 7-g
ALWAR - INTER TEMPORAL CORRELATES

		1991.00			1981.00			1971.00			1961.00		
1991		t.w	hh	Nhh	t.w	hh	nhh	t.w	hh	nhh	t.w	hh	nhh
	t.w	1.00											
	hh	0.80	1.00										
1981	nhh	0.90	0.47	1.00									
	t.w	0.61	0.66	0.43	1.00								
	hh	NA	NA	NA	NA	1.00							
1971	nhh	NA	NA	NA	NA	NA	1.00						
	t.w	0.64	0.67	0.46	0.72	NA	NA	1.00					
	hh	0.66	0.76	0.44	0.62	NA	NA	0.94	1.00				
1961	nhh	0.48	0.44	0.40	0.79	NA	NA	0.85	0.75	1.00			
	t.w	0.24	0.27	0.17	0.30	NA	NA	0.40	0.44	0.32	1.00		
	hh	0.22	0.26	0.14	0.30	NA	NA	0.39	0.43	0.29	0.98	1.00	
	nhh	0.22	0.20	0.19	0.22	NA	NA	0.29	0.30	0.29	0.73	0.57	1.00

Table 7-h
BULUNDSHAHR - INTER TEMPORAL CORRELATES

		1991			1981			1971			1961			
		t.w	hh	Nhh	t.w	hh	nhh	t.w	hh	nhh	t.w	hh	nhh	
1991	t.w	1.00												
	hh	0.76	1.00											
	nhh	0.86	0.31	1.00										
1981	t.w	0.49	0.27	0.51	1.00									
	hh	NA	NA	NA	NA	1.00								
	nhh	NA	NA	NA	NA	NA	1.00							
1971	t.w	0.53	0.36	0.49	0.86	NA	NA	1.00						
	hh	0.54	0.44	0.45	0.74	NA	NA	0.94	1.00					
	nhh	0.37	0.18	0.40	0.85	NA	NA	0.87	0.68	1.00				
1961	t.w	0.23	0.12	0.23	0.27	NA	NA	0.20	0.22	0.13	1.00			
	hh	0.19	0.13	0.18	0.25	NA	NA	0.19	0.23	0.10	0.98	1.00		
	nhh	0.25	0.04	0.34	0.22	NA	NA	0.12	0.08	0.17	0.62	0.45	1.00	

Table No. 7-I
ROHTAK &SONEPAT INTER TEMPORAL CORRELATES

		1991			1981			1971			1961		
		t.w	hh	Nhh	t.w	hh	nhh	t.w	hh	nhh	t.w	hh	nhh
1991	t.w	1.00											
	hh	0.42	1.00										
	nhh	0.98	0.24	1.00									
1981	t.w	0.27	0.23	0.25	1.00								
	hh	NA	NA	NA	NA	1.00							
	nhh	NA	NA	NA	NA	NA	1.00						
1971	t.w	0.24	0.27	0.21	0.83	NA	NA	1.00					
	hh	0.17	0.35	0.11	0.59	NA	NA	0.82	1.00				
	nhh	0.23	0.05	0.23	0.74	NA	NA	0.75	0.24	1.00			
1961	t.w	0.07	0.05	0.07	0.32	NA	NA	0.45	0.37	0.34	1.00		
	hh	0.02	0.05	0.01	0.18	NA	NA	0.31	0.39	0.09	0.95	1.00	
	nhh	0.17	0.02	0.17	0.49	NA	NA	0.56	0.17	0.75	0.68	0.41	1.00

Table 7-j
MEERUT &GHAZIABAD INTER TEMPORAL CORRELATES

		1991			1981			1971			1961		
		t.w	hh	Nhh	t.w	hh	nhh	t.w	hh	nhh	t.w	hh	nhh
1991	t.w	1.00											
	hh	0.57	1.00										
	nhh	0.93	0.28	1.00									
1981	t.w	0.55	0.36	0.50	1.00								
	hh	NA	NA	NA	NA	1.00							
	nhh	NA	NA	NA	NA	NA	1.00						
1971	t.w	0.60	0.33	0.58	0.81	NA	NA	1.00					
	hh	0.40	0.41	0.31	0.73	NA	NA	0.81	1.00				
	nhh	0.57	0.11	0.64	0.57	NA	NA	0.79	0.29	1.00			
1961	t.w	0.40	0.32	0.36	0.47	NA	NA	0.56	0.58	0.32	1.00		
	hh	0.30	0.36	0.21	0.46	NA	NA	0.47	0.67	0.06	0.91	1.00	
	nhh	0.38	0.06	0.43	0.23	NA	NA	0.44	0.09	0.63	0.62	0.23	1.00

Table 7-k
MAHENDRAGARH INTER TEMPORAL CORRELATION

		1991			1981			1971			1961		
		t.w	hh	nhh	t.w	hh	nhh	t.w	hh	nhh	t.w	hh	nhh
1991	t.w	1.00											
	hh	0.81	1.00										
	nhh	0.88	0.45	1.00									
1981	t.w	0.62	0.56	0.51	1.00								
	hh	NA	NA	NA	NA	1.00							
	nhh	NA	NA	NA	NA	NA	1.00						
1971	t.w	0.61	0.60	0.46	0.80	NA	NA	1.00					
	hh	0.67	0.71	0.45	0.75	NA	NA	0.91	1.00				
	nhh	0.26	0.16	0.27	0.54	NA	NA	0.71	0.36	1.00			
1961	t.w	0.31	0.21	0.30	0.41	NA	NA	0.58	0.50	0.45	1.00		
	hh	0.29	0.20	0.28	0.37	NA	NA	0.50	0.51	0.25	0.96	1.00	
	nhh	0.18	0.12	0.18	0.28	NA	NA	0.49	0.17	0.82	0.53	0.28	1.00

Table 7-l
KARNAL INTER TEMPORAL CORRELATES

		1991			1981			1971			1961		
		t.w	hh	Nhh	t.w	hh	nhh	t.w	hh	nhh	t.w	hh	nhh
1991	t.w	1.00					-						
	hh	0.70	1.00										
	nhh	0.89	0.29	1.00									
1981	t.w	0.32	0.15	0.32	1.00								
	hh	NA	NA	NA	NA	1.00							
	nhh	NA	NA	NA	NA	NA	1.00						
1971	t.w	0.43	0.25	0.42	0.74	NA	NA	1.00					
	hh	0.43	0.34	0.36	0.56	NA	NA	0.89	1.00				
	nhh	0.35	0.12	0.39	0.77	NA	NA	0.91	0.62	1.00			
1961	t.w	0.28	0.10	0.31	0.34	NA	NA	0.46	0.41	0.42	1.00		
	hh	0.24	0.11	0.26	0.24	NA	NA	0.35	0.40	0.24	0.95	1.00	
	nhh	0.26	0.06	0.31	0.43	NA	NA	0.51	0.26	0.63	0.72	0.46	1.00

Table 7-m
GURGAON &FARIDABAD INTER TEMPORAL CORRELATES

		1991			1981			1971			1961		
		t.w	hh	Nhh	t.w	hh	nhh	t.w	hh	nhh	t.w	hh	nhh
1991	t.w	1.00											
	hh	0.55	1.00										
	nhh	0.99	0.44	1.00									
1981	t.w	0.11	0.22	0.09	1.00								
	hh	NA	NA	NA	NA	1.00							
	nhh	NA	NA	NA	NA	NA	1.00						
1971	t.w	0.00	0.05	-0.01	0.75	NA	NA	1.00					
	hh	-0.03	0.01	-0.03	0.39	NA	NA	0.67	1.00				
	nhh	0.02	0.06	0.01	0.74	NA	NA	0.89	0.27	1.00			
1961	t.w	-0.04	0.01	-0.05	0.13	NA	NA	0.38	0.46	0.21	1.00		
	hh	-0.03	0.00	-0.03	0.09	NA	NA	0.34	0.48	0.15	0.95	1.00	
	nhh	-0.05	0.03	-0.06	0.17	NA	NA	0.32	0.26	0.26	0.76	0.52	1.00

Table 7-n
DELHI INTER TEMPORAL CORRELATES

		1991.00			1981.00			1971.00			1961.00		
		t.w	hh	Nhh	t.w	hh	nhh	t.w	hh	nhh	t.w	hh	nhh
1991	t.w	1.00											
	hh	0.62	1.00										
	nhh	1.00	0.58	1.00									
1981	t.w	0.79	0.64	0.78	1.00								
	hh	0.63	0.73	0.61	0.77	1.00							
	nhh	0.79	0.63	0.78	1.00	0.75	1.00						
1971	t.w	0.64	0.56	0.63	0.87	0.56	0.87	1.00					
	hh	0.63	0.74	0.61	0.74	0.85	0.73	0.62	1.00				
	nhh	0.61	0.52	0.61	0.84	0.51	0.85	1.00	0.54	1.00			
1961	t.w	0.12	0.12	0.12	0.13	0.10	0.13	0.20	0.16	0.19	1.00		
	hh	0.10	0.22	0.10	0.05	0.21	0.05	0.11	0.37	0.08	0.51	1.00	
	nhh	0.11	0.11	0.12	0.12	0.09	0.14	0.19	0.14	0.20	1.00	0.42	1.00

CHAPTER 8

CONCLUSION

At the eve of the independence, India inherited an industrial sector which was highly concentrated to a few large cities of the country. Dispersal of industries to the backward regions was one of the objectives of planning since 2nd plan period. The government had attempted to locate industries at backward regions through many policy instruments like public sector location in backward states, specification of location for licence requirements in the private sector, concessions and incentives for locating industries in backward regions, etc. There was some evidence of decline in regional disparities in industrial location growth till late 1960's . Afterwards, the trend reversed. Industrial concentration at the large cities continued while the small towns and rural areas were losing. With the policy shift since late 80's like delicensing and disinvestment of public sector, the government has no direct control over the location of industries. All location stipulations have been removed except for establishments in metropolitan cities. There is a case of growth of industries around the metropolitan cities.

There has been a decline in the growth rate of population in all metropolitan cities after 1981. Industrial activity, specially, non household manufacturing industries showed a decline in the cities

during 1981-91. This decline is probably due to the strict imposition of city master plans, the environment lobbying within large cities, and location policy of the state. The industries are possibly shifting base to the peripheries of the cities. The rise of service sector in the city indicate the burgeoning of 'sub contracted' work within the cities. The rise of construction sector, trade and commerce depict the changing characteristics of the cities from being 'centres of production' to that of cities that satisfy middle/upper income group consumer needs.

The disaggregated analysis for industries done at three digit level for Delhi U.T., which is the core and Meerut + Ghaziabad, Bulandshahar, Gurgaon + Fardiabad, Karnal, Rohtak + Sonepat, Mahendragarh and Alwar which are the districts of the periphery lead to the following conclusion.

There is a secular decline of Agro based industries, and traditional metal based industries in the peripheries of the city. Rural industries are declining while traditional skilled labour is getting deskilled.

Modern metal based industries were growing in the whole region during 1961-71, and there was an increase in the structural diversity. But during 81-91 the structural base of metal based industry in the periphery has shrunk to a few metal based products that are produced at household level. While in Delhi the metal based industry is further expanding and diversifying . In Delhi industries

that are found rising maximum declining 81-91 are those that work on a 'subcontracted' basis.

Within Delhi the chemical based industry is found rising within the urban areas itself. In the peripheries there is a burgeoning growth of non-metal mineral based industries mostly those which are construction material. While in Delhi this sector is declining in all periods. It suggest the shifting of polluting industries to the peripheries of the city while the finished products gets transferred to the city market. Thus the peripheries are being exploited for th city consumers.

The decline of Agro-based intermediate goods industry depict the decline of linkage between the agricultural sector and industrial sector in the peripheries. While the surging growth of non-metal mineral based goods that are largely produced at the household level in the peripheries with a concomitant decline in the city suggests the shifting of low paid industrial activity to the periphery.

The capital goods increased only during 61-71 afterwards it stagnated in the peripheries while it continued to expand in Delhi.

Consumer non-durables in the whole region had been declining over the years . While durable goods industry was rising in the initial period. There is a general decline of consumer goods industry at the periphery in 81-91. While it continues to rise in Delhi. The consumer

goods experienced a rise in the periphery during the period 1961-81 primarily due the rise of durable goods. But during the period 81-91 the durable goods industry stagnated while non-durable goods industry continued to decline, hence the general decline in consumer goods. However, it is to be noted that the largest percent share of workers in the durable goods industry belonged to repair services' in 81-91 in Delhi, Therefore, the rise is actually in low paid informal sector work within Delhi.

The rise in intermediate industries should in turn give rise in the consumer goods as well as intermediate industries produce goods that would be used as inputs in the consumer goods industry. But in this study there is a rise in the intermediate goods industry in the peripheries . While there is a decline in the consumer goods industry in the peripheries in 1981-91. On the other hand there is a rise in consumer goods industry in the city. This suggest that the peripheries have become production centres of goods that would find market in the city while the production of goods for local consumption has declined.

The city-hinterland relation in exploitative. The traditional industries in the peripheries have been replaced by low paid and polluting metal based industries and non-metal mineral based industries. The industrial structure of the hinterland is becoming production centres

for the city. Within the city also the rise of subcontracting work and repair services suggest the growth informal sector.

The correlation analysis of the indicators of industrial structure done at three digit level for the core, in Delhi U.T., and the peripheries Meerut + Ghaziabad, Bulandshahar, Gurgaon + Fardiabad, Karnal, Rohtak + Sonepat, Mahendragarh and Alwar revealed following the conclusion.

During the decade 1961-71 there had been considerable change in the industrial activity in the whole region, both city and hinter land.. After 1971, the industrial activity within the city is developing in a pattern that is structurally different from the peripheries. These differences have sharpened during the decade 1981-91. The peripheries on the other hand show an increasingly similar pattern of industrial structure among the various districts during the period 1981-91.

In the city the household sector is getting concentrated to a few minor groups while the non-household industrial sector is diversifying.

In the peripheries the h.h sector is growing in a pattern that is much similar to the city while N.H.H sector is growing in a distinctly different path.

The h.h sector and h.h.h sector was showing sign of increasing homogeneity during the period 1961-71 in the whole region including

the periphery and the core. But often 1971, these sectors are becoming structurally different with some specific industrial activity categorized as h.h industries.

The similar pattern of household industries in the city and the peripheries could signify that household industries in the city and the hinterland are growing into a similar structure.

Within the city the self employed workers are mainly engaged in household industries. They are one of the poorest income group within the city. The pattern in the hinterland showing similarity with the structure of household industries in the city indicate the declining condition of workers in the periphery also.

The dissimilarity in the pattern of structure of industries in the periphery with the core indicate that the two regions are producing different type of goods.

During the period 1961-81, both the city and the periphery had the largest number of workers engaged in consumer goods industry. During 81-91 the periphery region show a decline of consumer goods and marked rise in intermediate goods. The city continue to have a rising share of consumer goods. This probably indicate that the periphery has lost its traditional industries. It is producing intermediate goods that are required for the production of consumer goods in the city.

APPENDIX - I

NIC CLASSIFICATION COMPARATIVE TABLE

NIC 1991	NIC 1981-1971	NIC 1961	ITEMS
200+203	200+203	204	Slaughtering, preparation and preservation of meat. Processing, canning and preserving of fish, crustacea and similar foods
201	201	206	Manufacture of dairy products
202	202	203	Canning and preservation of fruits and vegetables
204	204	200	Grain milling
205	205	205	Manufacture of bakery products
206	205	202	Manufacture and refining of sugar (vacuum pan sugar factories)
207	207	338	Production of indigenous sugar, 'boora', 'khandsari', 'gur', etc. from sugar-cane, palm juice, etc.
208	208	-	Production of common salt
209	210	209	Manufacture of cocoa products and sugar confectionary (including sweetmeats)
210	210	208	Manfuacture of hydrogneated oils and vanaspati ghee, etc.
211& 212	212	207	Manufacture of vegetable oils and fats (other than hydrogenated). Manufacture of animals oils and fats; manufacture of fish oils
213	212	217	Processing and blending of tea including manufacture of instant tea
214	213	218	Coffee curing, roasting, grinding and blending etc. including manufacture of instant coffee
215	214	-	Processing of edible nuts
216	215	215	Manufacture of ice
217	216	-	Manufacture of prepared animal and bird feed
218	217	-	Manufacture of starch
219	219	-	Manufacture of food products not else where classified
220, 221 & 222	220, 221 & 222	210	Distilling, rectifying and blending of spirits ethyl alcohol production from fermented materials.
223	223	211,212	Manufacture of malt liquors and malt

224	224	219	Manufactrue of soft drinks and syrups
225	225	-	Tobacco stemming, redrying and all other operations connected with preparing raw leaf tobacco
226	226	220	Manufacture of bidi
227	227	221,222,223	Manufacture of cigars, cigarettes, cheroots and cigarette tobacco
228	228	224,225	Manufacture of snuff, zarda, chewing tobacco and other tobacco producs n.e.c (except pan-masala containing tobacco)
229	229	226	Manufacture of pan-masala, catechu (kattha) and chewing lime
230	230	230	Cotton ginning, cleaning and baling
231	233	231	Cotton spinning other than in mills (charka)
232	234	232,236	Weaving and finishing of cotton khadi
233	235	235	Weaving and finishing of cotton textiles on handlooms
234	236	234	Weaving and finishing of cotton textiles on power looms
235	231	-	Cotton spinning, weaving and procesing in mills
236	232	237,233	Bleaching, dyeing and printing of cotton textiles (This group includes bleachign, dyeing and p rinting of not self-produced cotton textiles. No disctinction is to be made between these activiteis carried out on a fee or contract basis or by purchasing the materials and selling the finished products. Bleaching, dyeing and printing of self-produced textiels in composite mills is classified in class 235).
240	240	250,251	Preparation of raw wool, silk and artificials/synthetic textile fibres for spinning
241	242	253,255	Wool spinning, weaving and finishing other than in mills
242	241	252,254	Wool spinning, weaving and processing in mills
243	243	256	Bleaching and dyeing of woolen textiles
244& 245	245	260,262,263,264	Spinning, weaving and finishing of silk textiles in mills and other than mills.
246	246	261,265	Bleaching, dyeing and printing of silk textiles
247	247	-	Spinning, weaving and processing of man-made textile fibres
248	248	-	Bleaching, dyeing and printing of

			artificial/synthetic textile fabrics
250	250	240	Jute and mesta pressing and bailing
251 & 254	251	241	Preparatory operations (including carding and combing) on jute and mesta fibres and Spinning, weaving and finishing of jute and mesta textiles
252, 255 & 258	268	277	Preparatory operions (including carding and combing)on coir fibres, Spinning, weaving and finishing of coil textiles, Bleaching, dyeing and printing of coir textiles
253, 256 & 259	253, 259	244	Preparatory operations (including carding and combing) on sann hemp and other vegetable fibres n.e.c, Spinning, weaving and finishing of sann and other vegetale fibre textiles n.e.c., Bleaching, dyeing and printing of other vegetable fibre textiles n.e.c.
257	252	242,243	Bleaching, dyeing and printing of jute and mesta textiles
260	260	271	Manufacture of knitted
261	261	238,239	Manufacture of all types of threads, cordage, ropes, twines and nets, etc.
262	262	272	Embroidery work, zari work and making of ornamental trimmings
263	263	270	Manufacture of blankets, shawls, carpets, rugs and other similar textile products
264	-	-	Manufacture of floor coverings of jute, mesta, sann-hemp and other kindred fibres and of coir
265	264	279	Manufacture of all types of textiles garments and clothing accessories n.e.c. except by purely tailiring establishments from not self-produced material (Not: In principle, the raw material is cut and sewn together in the establishments covered in this group)
266	265	273,278	Manufacture of rain cots, hats, caps and school bags, etc. from waterproof textile fabrics or plastic sheetings
267	266	274	Manufacture of made-up textile articles; except apparel
268	267	275	Manufacture of made-up textile fabrics
269	269	276	Manufacture of textiles/textile products not elsewhere classified like linoleum, padding,

			wadding, upholstering and filling, etc
270	271	280	Sawing and planing of wood(other than plywood)
271	270	285,286	Manufacture of vener sheets, plywood and their products
272	273	282,287	Manufacture of structural wooden goods (including treated timber) such as beams, posts, doors and windows (excluding hewing and rough shaping of poles, bots and other wood material which is classified under logging
273	272	283	Manufacture of wooden and cane boxes, creates, drums, barrels and other containes, baskets and other wares made entierly or mainly of cane, rattan, reed, bamboo, willow, fibres, leaves and grass
274	274	284	Manufacture of wooden industrial goods ne.c.
275 & 277	275 & 277	288	Manufacture of cork and cork products, Manufacture of bamboo and cane furniture and fixtures
276	276	281	Manufacture of wooden furniture and fixtures
279	279	289	Manufacture of products of wood, abamboo, cane, reed and grass (including articles made from coconut shells, etc) n.e.c.
280,281, 282 & 283	280,281, 282 & 283	290,291,292	Manufacture of pulp, paper and paper board including manufacture of newsprint, Manufacture of containers and boxes of paper or paper board, Manufacture of paper and paper board articles and pulp products not elsewhere classified, Manufactrue of special purpose paper whether or not printed n.e.c.
284	284	300	Printing and publishing of newspaper
285	285	301	Pronting and publishing of periodicals, books, journals, directories, atlases, maps an dsheet music, schedules and pamphlets etc.
286	286	-	Printing of bank notes, currency notes, postage stamps, security passes, stamp papers and other similar products.
287 & 289	287 & 289	302	Engraving, etchingand block-making etc. Printing and allied activities not else where classified
288	288	303	Book binding on account of others

290	290 & 294	310	Tanning, currying, finishing, embossing and japanning f leather Scrapping , currying, tanning, bleaching and dyeing of of fur and other pelts for the trade
291	291	311	Manufacture of footwear (excluding repair) except of vulcanized or moulded rubber or plastic
292, 295 & 296	292, 295 & 296	312	Manufacture of wearing apparel of leather and substitutes of lather Manufacture of wearing apparel of fur and pelts Manufacture of fur and skin rugs and other similar articles
293 & 299	293 & 299	313	Manufacture of consumer goods of leather and substitutes of leather, other than apparel and footwear (Note : manufactrue of school bags and travelling accessories from water-proof textile fabrics is included in group 266) Manufacture of leather and fur products n.e.c.
300	310	330	Manufacture of industrial organic and inorganic chemicals (manufacture of chemicals for laboratory and technical uses is classified in class 309)
301	311	332	Manufacture of fertilizers and pesticides
302	-	-	Manufacture of plastics in primary forms; manufacture of synthetic rubber
303	312	331	Manufactrure of paints, varnishes and related products : artists colours and ink
304, 305	313 & 314	335,336	Manufacture of drugs, medicines, and allied products. Manufacture of perfumes, cosmetics, lotions, hair dressings, tooth pastes, soap in any form, detergents, shampoos, shaving producs, washing and cleaning preparations and other toilet preparations.
307	317	334	Manufacture of matches
308	319	339	Manufacture of explosive; ammunition and fire-works
309	-	320	Manufacture of chemical products not else where classified

310	300	320	Tyre and tube industries
311	301	321	Manufacture of footwear made primarily of vulcanised or moulded rubber and plastic
312	302	322,323	Manufacture of rubber products not else where classified
313	303	-	Manufacture of plastic products not else were classified
314, 315, 316, 317	304 & 305	324	Manufacture or refined petroleum products
318	306	325	Manufacture of coke oven products (This group includes operation of coke ovens chiefly for the production of coke or semi-coke from hard-coal and lignite, retort carbon and residual products such as coal tar or pitch agglomeration of coke is included. Distillation of coal tar is classified in group 319 below).
319	307	326	Manufacture of other coal and coal tar products not elsewhere classified.
320	320	340	Manufacture of refractory products and structural clay products
321	321	353,354,357	Manufacture of glass and glass products
322	322, 327	355,356,346,344,345	Manufacture of earthen and plaster products.
323	323	350,351,352	Manufacture of non-structural ceramic ware.
324	324	341,342	Manufacture of cement, lime and plaster.
325	325	348	Manufacture of mica products.
326	326	343	Stone dressing and crushing; manufacture of structural stone goods and stone ware.
327	328	347	Manufacture of asbestos, cement and other cement products.
329	329	359	Manufacture of miscellaneous non-metallic mineral products not elsewhere classified
330, 331	330, 331	360.	Manufacture of iron and steel in primary/semi-finished forms. Manufacture of semi-finished iron and steel products in re-rolling mills, cold-rolling mills

			and wire-drawing mills.
332	332	-	Manufacture of ferro-alloys.
333	333	-	Copper manufacturing.
334	334	365	Brass manufacturing.
335	335	366	Aluminum manufacturing.
336	336	-	Zinc manufacturing.
337	-	-	Casting of metals.
338, 339	339	361	Processing/Re-rolling of metal scraps other than iron and steel scraps (Note: Re-rolling of iron and steel scraps is included in Class 330) Other non-ferrous metal industries.
340	341	363	Manufacture of fabricated structural metal products.
341	340	367	Manufacture of fabricated metal products not else where classified.
342	342	364	Forging, pressing, stamping and roll-forming of metal; powder metallurgy. (This group includes production of a wide variety of finished or semi-finished metal products, means of the above activities which individually, would be characteristically produced in other activity categories.
343	343	-	Manufacture of handtools and hardware
344	-	-	Forging, pressing and roll forming of metal
345	344	368	Treatment or coating of metals; general mechanical engineering on a sub-contract basis(This group includes plating, polishing, anodizing, engraving, printing, hardening, buffing, debarring, sand blasting, welding or other specialised operations on metals on a fee or contract basis. The units classified here, generally, do not take ownership of the goods nor do they sell them to third parties.
346	345	-	Manufacture of metal cutlery, utensils and kitchenware
349	349	369	Manufacture of metal products (except machinery and equipment) not elsewhere classified.
350	350	-	Manufacture of agricultural machinery and

			equipment and parts thereof.
351	351	-	Manufacture of machinery and equipment used by construction and mining industries.
352	352	371	Manufacture of prime movers, boilers, steam generating plants and nuclear reactors.
353	353	373	Manufacture of industrial machinery for food and textile industries (including bottling and filling machinery).
354	354	370	Manufacture of industrial machinery for other than food and textile industries.
355	355	-	Manufacture of refrigerators, air conditioners and fire fighting equipment and their parts and accessories.
356	356	-	Manufacture of general purpose non-electrical machinery/equipment, their components and accessories n.e.c.
357	357	372	Manufacture of machine tools, their parts and accessories.
358	358	-	Manufacture of office, computing machinery and parts. (Note Manufacture of computers and computer based systems including word processors is classified in group 367)
359	359	-	Manufacture of special purpose machinery/equipment, their components and accessories n. e. c.
360	360	374	Manufacture of electrical industrial machinery, apparatus and parts thereof .
361	361	376	Manufacture of insulted wires and cables, including manufacture of optical fibre cables.
362	362	377	Manufacture of accumulators, primary cells and primary batteries.
363 & 364	363	375	Manufacture of electric lamps. Manufacture of electric lamps.
365 & 366	364	378	Manufacture of apparatus for radio broad casting, television transmission, radar apparatus and radio-remote control apparatus and apparatus for radio/line telephony and the telegraphy. Manufacture of television receivers; reception apparatus for radio broadcasting, radio

			telephony/telegraphy, video recording or reproducing apparatus, turntables, record players, cassette-players and other sound reproducing apparatus, sound recording apparatus, micro-phones, loudspeakers, amplifiers and sound amplifiers and prerecorded audio/video records/tapes
367	366	-	Manufacture of computers and computer based systems.
368	367	-	Manufacture of electronic valves and tubes and other electronic components n.e.c.
369	369, 365	-	Manufacture of radiographic X-ray apparatus, X-ray tubes and parts and manufacture of electrical equipment n.e.c.
370	370	386	Ship and boat building.
371	371	380	Manufacture of locomotives and parts
372	372, 373	381	Manufacture of railway/tramway wagon and coaches and other railroad equipment n.e.c.
373, 374, 375	374, 375	382,383	Manufacture of heavy motor vehicles, coach work Manufacture of motor cars and other motor vehicles principally designed for the transport of less than 10 persons (includes manufacture of racing cars and golf cars,etc.) Manufacture of motor-cycle and scooters and parts (including three -wheelers)
376	376	385	Manufacture of bicycles, cycle-rickshaw and parts.
377	377	387	Manufacture of aircraft, spacecraft and their parts.
378	378	389	Manufacture of bullock-carts, push-carts and hand-carts etc.
379	379	-	Manufacture of transport equipment and parts not elsewhere classified.
380	380	391	Manufacture of medical, surgical, scientific and measuring equipment except optical equipment.
381	381	390	Manufacture of photographic, cinematographic and optical goods and equipment (excluding photo-chemicals, sensitised paper and film)
382	382	392	Manufacture oof watches and clocks

383	383	393	Manufacture of jewelry and related articles.
384	384	-	Manufacture of sports and athletic goods
386	386	396	Manufacture of musical instruments (Note : manufacture of toy, musical instruments is classified in group 389).
387	387	394	Manufacture of stationery articles n.e.c.
388	388	395	Manufacture of items based on solar energy like solar cells, cookers, air and water heating systems and other related items.
389	389	399	Manufacture of miscellaneous products not elsewhere classified.
970	390	-	Repair of footwear and other leather goods.
971, 972	391	-	Repair of household electrical appliances Repair of TV, VCR, radio, transistor, tape-recorder, refrigerator and other electronic appliances.
973	393	-	Repair of watches, clocks and jewellery
974	392, 398	-	Repair of motor vehicles and motor cycles except trucks, lorry and other heavy vehicles.
975	394	-	Repair of bicycles and cycle rickshaws
979	395	-	Repair of bicycles and cycle rickshaws

APPENDIX - II

TABLE 1 GURGAON and FARIDABAD

	PERCENT OF WORKERS IN EACH GROUP				PERCENT OF HOUSEHOLD WORKERS			PERCENT OF NON HOUSEHOLD WORKERS		
NIC 1991	1991	1981	1971	1961	1991	1971	1961	1991	1971	1961
204	1.43	1.74	2.59	3.52	12.46	37.18	47.86	87.54	62.82	52.14
207	0.13	0.00	0.00	1.11	1.10	NA	95.52	98.90	NA	4.48
209	0.58	1.35	0.73	3.88	4.84	31.63	32.98	95.16	68.37	67.02
211&212	0.31	0.21	0.67	1.46	5.41	24.18	65.18	94.59	75.82	34.82
231	0.05	0.00	0.28	2.16	21.43	11.29	0.00	78.57	88.71	100.00
232	0.02	0.17	0.30	1.83	37.93	82.93	0.00	62.07	17.07	100.00
233	0.19	0.30	1.06	4.86	13.38	62.94	90.51	86.62	37.06	9.49
235	1.60	2.97	5.96	0.00	0.00	0.00	NA	100.00	100.00	NA
248	1.50	0.00	0.00	0.00	0.10	na	NA	99.90	NA	NA
261	1.40	1.30	0.48	0.00	0.52	30.98	NA	99.48	69.02	NA
262	0.17	0.29	0.27	1.13	2.59	10.87	85.88	97.41	89.13	14.12
265	0.38	7.06	5.29	0.00	0.57	44.91	NA	99.43	55.09	NA
266	0.03	0.00	0.00	10.17	4.88	NA	72.28	95.12	NA	27.72
270	0.58	0.46	0.37	1.15	9.63	26.00	45.00	90.38	74.00	55.00
272	1.05	1.65	3.94	0.88	18.78	67.28	80.06	81.22	32.72	19.94
273	0.40	0.95	1.07	1.79	39.00	77.27	95.77	61.00	22.73	4.23
275&277	0.03	0.00	0.05	3.73	20.45	0.00	88.81	79.55	100.00	11.19
276	1.55	0.53	0.32	0.60	11.21	25.58	71.00	88.79	74.42	29.00
279	0.58	0.73	0.63	4.70	15.23	88.24	0.00	84.77	11.76	100.00
280&281&282&283	1.32	1.18	0.89	0.76	11.02	0.00	0.00	88.98	100.00	100.00
285	2.34	0.38	1.81	0.00	0.40	1.63	NA	99.60	98.37	NA
287&289	0.04	1.52	0.30	1.35	0.00	2.50	0.39	100.00	97.50	99.61
291	2.95	2.96	7.80	17.70	8.09	62.33	80.81	91.91	37.67	19.19
304&305	1.21	0.87	0.50	0.00	0.30	2.99	NA	99.70	97.01	NA
310	1.48	1.62	2.12	0.84	0.24	2.45	0.00	99.76	97.55	100.00
312	1.28	1.42	1.15	0.68	0.67	3.23	0.00	99.33	96.77	100.00
313	1.61	1.19	0.87	0.00	1.25	7.69	NA	98.75	92.31	NA
320	0.47	3.75	5.45	5.07	3.05	2.17	22.72	96.95	97.83	77.28
321	0.67	1.39	0.98	0.93	0.43	2.27	0.00	99.57	97.73	100.00
322	2.00	2.64	5.18	0.00	61.83	86.26	NA	38.17	13.74	NA
323	0.65	0.24	0.36	11.40	0.44	2.08	84.30	99.56	97.92	15.70
326	1.85	3.41	0.73	0.88	0.12	0.00	9.14	99.88	100.00	90.86
330&331	0.30	5.52	4.28	0.00	0.97	3.63	NA	99.03	96.37	NA
334	0.05	0.00	0.00	2.52	0.00	NA	49.64	100.00	NA	50.36
337	1.82	0.00	0.00	0.00	1.85	NA	NA	98.15	NA	NA
341	1.26	1.57	2.21	0.00	1.31	1.67	NA	98.69	98.33	NA
343	3.81	7.22	3.25	0.00	7.65	45.66	NA	92.35	54.34	NA
345	1.88	0.14	0.34	0.00	1.34	6.52	NA	98.66	93.48	NA

346	0.91	0.43	1.43	0.00	1.50	28.57	NA	98.50	71.43	NA
349	0.28	0.70	0.32	4.47	2.09	9.30	36.99	97.91	90.70	63.01
350	7.66	7.40	5.07	0.00	0.23	0.15	#DIV/0!	99.77	99.85	NA
355	3.99	1.64	1.49	0.00	0.02	0.00	#DIV/0!	99.98	100.00	NA
357	4.30	0.92	3.57	0.72	0.03	0.21	0.36	99.97	99.79	99.64
360	0.50	0.95	0.87	1.08	0.00	0.00	0.00	100.00	100.00	100.00
361	1.39	1.14	0.69	0.94	0.36	0.00	0.00	99.64	100.00	100.00
363&364	2.44	2.56	2.43	0.00	0.47	0.30	NA	99.53	99.70	NA
365&366	0.87	0.45	1.03	0.00	0.25	0.00	NA	99.75	100.00	NA
373&374&375	7.27	2.29	2.98	0.00	0.25	0.74	NA	99.75	99.26	NA
376	0.20	0.23	0.98	1.07	0.72	3.01	0.00	99.28	96.99	100.00
383	0.70	0.65	1.54	3.26	16.53	62.50	72.06	83.47	37.50	27.94
389	9.50	4.75	1.10	0.00	19.65	5.41	NA	80.35	94.59	NA
971&972	1.89	0.66	0.42	0.00	2.02	5.26	NA	97.98	94.74	NA
974	1.59	1.94	1.21	0.00	2.40	1.83	NA	97.60	98.17	NA
975	1.57	1.50	1.65	0.00	7.41	11.22	NA	92.59	88.78	NA
979	0.16	6.46	0.97	0.00	3.69	3.05	NA	96.31	96.95	NA

TABLE 2
ROHTAK &SONEPAT

	PERCENT OF WORKERS IN EACH GROUP				PERCENT OF HOUSEHOLD WORKERS			PERCENT OF NON HOUSEHOLD WORKERS		
NIC	1991	1981	1971	1961	1991	1971	1961	1991	1971	1961
204	2.63	3.52	3.42	2.75	14.36	58.42	43.04	85.64	41.58	56.96
206	2.36	1.62	1.30	2.48	0.00	0.00	0.00	100.00	100.00	100.00
207	0.70	1.88	0.97	5.89	11.93	27.50	78.02	88.07	72.50	21.98
209	1.09	2.27	1.18	3.07	5.78	20.62	22.04	94.22	79.38	77.96
231	0.18	0.28	0.36	3.47	17.89	66.67	91.14	82.11	33.33	8.86
232	0.13	0.99	3.06	3.77	38.89	91.35	86.43	61.11	8.65	13.57
233	0.60	2.56	0.64	7.43	27.34	75.95	91.22	72.66	24.05	8.78
235	0.68	1.77	3.05	0.00	0.00	0.00	NA	100.00	100.00	NA
240	0.05	0.00	1.28	0.00	0.00	0.00	NA	100.00	100.00	NA
261	1.20	0.88	0.78	0.00	2.87	35.71	NA	97.13	64.29	NA
265	0.12	8.75	9.17	0.00	8.14	62.25	NA	91.86	37.75	NA
266	0.03	0.00	0.01	11.67	20.00	0.00	75.08	80.00	100.00	24.92
270	0.96	0.43	0.68	1.42	12.26	12.81	25.41	87.74	87.19	74.59
272	1.78	2.90	3.21	2.60	24.86	51.21	75.85	75.14	48.79	24.15
273	0.67	0.92	1.11	1.66	59.62	66.01	90.62	40.38	33.99	9.38
275&277	0.01	0.00	0.00	2.22	28.57	NA	86.66	71.43	NA	13.34
276	2.05	0.69	1.16	0.88	12.17	46.43	76.79	87.83	53.57	23.21
279	0.61	0.55	1.54	1.48	20.33	70.08	82.98	79.67	29.92	17.02
291	1.19	3.12	8.77	14.28	26.18	88.90	88.26	73.82	11.10	11.74
312	1.29	1.52	1.15	0.00	1.00	2.11	NA	99.00	97.89	NA
320	1.72	6.52	9.02	7.07	3.58	9.28	16.96	96.42	90.72	83.04
321	2.43	3.75	1.66	0.00	1.77	0.73	NA	98.23	99.27	NA
322	3.77	4.75	8.36	0.00	51.44	93.78	NA	48.56	6.22	NA
323	0.14	0.67	0.46	10.64	4.12	0.00	92.00	95.88	100.00	8.00
329	21.25	0.17	0.10	0.00	1.34	0.00	NA	98.66	100.00	NA
330&331	2.00	4.66	1.37	0.00	2.37	5.49	NA	97.63	94.51	NA
341	0.52	1.06	1.46	0.00	7.20	21.80	NA	92.80	78.20	NA
343	4.33	6.12	5.54	0.00	18.37	85.75	NA	81.63	14.25	NA
345	1.21	0.00	0.20	0.00	8.80	12.35	NA	91.20	87.65	NA
349	0.45	0.54	0.15	5.09	9.49	0.00	73.74	90.51	100.00	26.26
350	0.81	1.13	0.64	0.00	15.70	1.89	NA	84.30	98.11	NA
363&364	0.78	1.52	0.21	0.00	1.83	0.00	NA	98.17	100.00	NA
373&374&375	1.22	0.51	0.56	0.00	0.23	0.00	NA	99.77	100.00	NA
376	4.60	6.16	6.68	4.73	0.25	0.00	0.67	99.75	100.00	99.33
383	1.75	1.87	3.15	4.29	17.97	66.08	62.88	82.03	33.92	37.12
389	7.36	0.52	0.18	0.00	53.79	0.00	NA	46.21	100.00	NA
970	0.51	1.05	0.79	0.00	6.21	24.62	NA	93.79	75.38	NA
971&972	2.35	1.19	0.53	0.00	2.87	4.55	NA	97.13	95.45	NA
974	1.69	2.45	2.03	0.00	2.47	4.19	NA	97.53	95.81	NA
975	1.97	2.14	0.00	0.00	5.52	NA	NA	94.48	#DIV/0!	NA
979	0.54	7.00	0.84	0.00	54.74	7.25	NA	45.26	92.75	NA

TABLE 3
MEERUT &GHAZIABAD

	PERCENT OF WORKERS IN EACH GROUP				PERCENT OF HOUSEHOLD WORKERS			PERCENT OF NON HOUSEHOLD WORKERS		
NIC	1991	1981	1971	1961	1991	1971	1961	1991	1971	1961
204	1.75	1.68	1.78	2.00	15.37	45.35	47.72	84.63	54.65	52.28
206	3.85	3.35	7.73	7.95	0.00	0.00	0.00	100.00	100.00	100.00
207	1.69	4.68	2.51	3.44	9.41	66.11	57.61	90.59	33.89	42.39
209	1.37	1.98	1.41	2.47	5.52	30.65	48.70	94.48	69.35	51.30
211&212	0.59	0.49	0.79	2.36	6.54	72.92	84.10	93.46	27.08	15.90
219	0.56	1.50	0.71	0.00	23.57	40.55	NA	76.43	59.45	NA
230	0.08	0.10	0.65	1.42	16.33	80.40	75.71	83.67	19.60	24.29
231	0.71	1.22	0.66	3.17	26.15	82.16	89.04	73.85	17.84	10.96
232	0.52	0.36	0.70	4.33	41.30	51.89	9.14	58.70	48.11	90.86
233	4.95	10.12	10.82	16.85	40.29	89.17	96.23	59.71	10.83	3.77
234	4.69	1.19	0.25	0.71	47.23	11.69	0.00	52.77	88.31	100.00
235	4.47	5.30	5.84	0.00	0.00	0.00	NA	100.00	100.00	NA
236	1.74	0.86	1.23	1.55	9.14	42.34	67.44	90.86	57.66	32.56
253&256&259	0.08	0.00	0.04	2.48	20.51	0.00	97.67	79.49	100.00	2.33
261	0.68	1.49	0.60	0.00	14.53	35.64	NA	85.47	64.36	NA
265	0.13	8.12	7.75	0.00	3.81	56.81	NA	96.19	43.19	NA
266	0.11	0.00	0.03	9.65	7.94	22.22	67.38	92.06	77.78	32.62
272	2.79	3.04	5.34	1.44	13.06	76.94	78.55	86.94	23.06	21.45
273	0.90	1.47	2.09	1.38	50.68	76.65	93.22	49.32	23.35	6.78
275&277	0.18	0.00	0.01	2.62	26.69	66.67	89.91	73.31	33.33	10.09
276	2.18	1.09	0.67	0.00	13.76	55.67	NA	86.24	44.33	NA
279	0.56	0.11	0.11	4.13	26.20	34.38	75.46	73.80	65.63	24.54
280&281&282&283	1.06	0.47	0.41	0.00	3.03	7.94	NA	96.97	92.06	NA
285	1.38	0.42	0.90	0.00	1.64	5.86	NA	98.36	94.14	NA
290&294	0.34	0.08	0.69	1.59	28.28	85.65	87.80	71.72	14.35	12.20
291	1.43	1.53	3.60	4.49	18.95	79.35	84.83	81.05	20.65	15.17
310	1.93	0.82	0.18	0.00	0.55	5.36	NA	99.45	94.64	NA
320	3.62	2.23	6.45	3.33	1.30	14.79	2.58	98.70	85.21	97.42
322	1.16	2.49	3.33	0.00	35.47	87.44	NA	64.53	12.56	NA
323	0.13	0.04	0.11	5.80	3.61	0.00	97.02	96.39	100.00	2.98
329	4.94	0.00	0.00	0.00	1.01	NA	NA	98.99	NA	NA
330&331	3.57	2.38	1.53	1.39	2.23	4.09	4.05	97.77	95.91	95.95
341	0.13	2.42	0.78	0.00	2.90	3.36	NA	97.10	96.64	NA
343	0.91	2.68	6.63	0.00	13.23	60.57	NA	86.77	39.43	NA
345	3.48	0.57	0.72	1.15	3.59	15.12	3.84	96.41	84.88	96.16
349	0.89	0.44	0.22	6.53	3.78	3.03	65.39	96.22	96.97	34.61
350	1.25	0.35	0.17	0.00	16.61	1.89	NA	83.39	98.11	NA
356	0.08	0.27	1.49	0.00	0.00	3.54	NA	100.00	96.46	NA
359	0.08	1.78	1.12	0.00	3.52	16.46	NA	96.48	83.54	NA
383	1.57	1.61	2.50	3.28	10.92	55.25	59.85	89.08	44.75	40.15
389	4.32	1.88	1.80	0.00	78.72	28.01	NA	21.28	71.99	NA
970	0.42	1.18	0.84	0.00	6.01	31.35	NA	93.99	68.65	NA
971&972	2.73	1.14	0.73	0.00	1.23	9.95	NA	98.77	90.05	NA
974	1.66	2.08	1.53	0.00	2.48	7.31	NA	97.52	92.69	NA
975	2.03	1.86	0.00	0.00	3.42	NA	NA	96.58	NA	NA
979	0.58	8.10	0.71	0.00	9.47	26.39	NA	90.53	73.61	NA

TABLE 4
MAHENDRAGARH

	PERCENT OF WORKERS IN EACH GROUP				PERCENT OF HOUSEHOLD WORKERS			PERCENT OF NON HOUSEHOLD WORKERS		
	W.W/T.W*100				HH/WW* 100			nhh/w w*100		
NIC	1991	1981	1971	1961	1991	1971	1961	1991	1971	1961
204	5.1653	5.3165	4.6239	2.82	20.474	45.064	61.682	79.526	54.936	38.318
209	1.9147	3.6119	0.0992	2.943	2.907	0	22.985	97.093	100	77.015
231	0.0111	0	0.1985	2.6092	0	0	95.286	100	100	4.7138
232	0	0.5873	1.3495	0.817	NA	92.647	96.774	NA	7.3529	3.2258
233	0.1225	0	0.6946	4.5682	9.0909	92.857	93.462	90.909	7.1429	6.5385
235	0.3896	3.8613	0.2977	0	0	0	NA	100	100	NA
236	0.2338	0	0.0496	4.1992	19.048	100	100	80.952	0	0
265	0.1558	12.073	11.967	0	0	60.033	NA	100	39.967	NA
266	0.0334	0	0	9.6284	33.333	NA	75.912	66.667	NA	24.088
270	2.0928	2.0892	0.1488	1.186	14.894	0	56.296	85.106	100	43.704
272	6.6459	4.8332	12.274	1.6867	42.714	84.964	86.458	57.286	15.036	13.542
273	1.9593	0.9614	1.2899	4.9284	64.773	100	99.822	35.227	0	0.1783
275&277	0.0223	0	0	3.5843	0	NA	100	100	NA	0
276	8.1265	3.2377	0.0992	0	27.397	0	NA	72.603	100	NA
279	2.3934	3.3884	0.2481	0	31.628	80	NA	68.372	20	NA
280&281&282&283	0.3006	2.9467	0.1985	0	7.4074	100	NA	92.593	0	NA
304&305	0.1113	1.3876	0.0992	0	0	0	NA	100	100	NA
320	1.0909	8.0969	6.0429	7.8275	6.1224	9.0312	76.88	93.878	90.969	23.12
322	10.865	10.103	13.048	0.9839	77.664	90.494	13.393	22.336	9.5057	86.607
323	0.0668	0	0	7.9768	0	NA	97.687	100	NA	2.3128
324	0.6791	1.3824	10.379	7.5024	4.918	1.434	0.2342	95.082	98.566	99.766
326	2.1596	4.8176	0.2977	0.6413	1.0309	100	73.973	98.969	0	26.027
329	6.2674	0.9562	0.5954	0	1.2433	0	NA	98.757	100	NA
341	0.7792	1.4863	0.3473	0	17.143	0	NA	82.857	100	NA
343	3.2395	4.4902	5.7055	0	50.859	97.391	NA	49.141	2.6087	NA
345	1.436	0	0.0496	0	10.853	0	NA	89.147	100	NA
346	0.3117	5.0618	0.0992	0	0	0	NA	100	100	NA
349	0.0891	0	0.0992	3.9972	0	50	78.681	100	50	21.319
357	0.0891	0	0.1985	1.5725	0	0	100	100	100	0
373&374&375	1.2579	0	0.0496	0	3.5398	0	NA	96.46	100	NA
383	3.7404	4.485	5.1101	4.454	25	54.369	68.442	75	45.631	31.558
389	5.6663	1.4759	0.8335	0	84.479	82.143	NA	15.521	17.857	NA
970	2.8053	0.2598	0.4961	0	9.127	40	NA	90.873	60	NA
971&972	4.9983	0.1299	0.2481	0	2.8953	0	NA	97.105	100	NA
973	1.2691	0	0	0	3.5088	NA	NA	96.491	NA	NA
974	2.1485	0.4158	0.7938	0	1.5544	12.5	NA	98.446	87.5	NA
975	3.8072	0	0	0	24.561	NA	NA	75.439	NA	NA
979	0.3785	0.6236	1.1907	0	32.353	4.1667	NA	67.647	95.833	NA

TABLE 5
KARNAL

NIC	PERCENT OF WORKERS IN EACH GROUP				PERCENT OF HOUSEHOLD WORKERS			PERCENT OF NON HOUSEHOLD WORKERS		
	total main.ind. Wor.				hh/ww*100			nhh/ww*100		
	1991	1981	1971	1961	1991	1971	1961	1991	1971	1961
201	0.27	1.14	0.42	0.00	15.79	13.16	NA	84.21	86.84	NA
204	7.14	8.33	4.98	6.34	13.95	29.31	32.67	86.05	70.69	67.33
206	1.27	0.39	2.05	1.19	0.00	0.00	0.00	100.00	100.00	100.00
207	1.35	1.91	0.30	2.87	1.04	22.22	74.27	98.96	77.78	25.73
209	1.66	3.10	1.82	3.89	6.20	13.94	18.30	93.80	86.06	81.70
231	0.15	1.11	0.62	7.53	56.25	69.64	92.33	43.75	30.36	7.67
232	0.27	3.13	2.24	0.00	5.17	25.64	NA	94.83	74.36	NA
233	0.81	11.21	7.05	7.07	19.08	34.34	77.10	80.92	65.66	22.90
242	0.05	1.38	0.57	0.00	0.00	0.00	NA	100.00	100.00	NA
263	2.17	2.07	0.22	0.00	5.83	40.00	NA	94.17	60.00	NA
265	0.05	9.71	8.55	0.00	0.00	40.38	NA	100.00	59.62	NA
266	0.04	0.00	0.01	11.86	0.00	0.00	71.30	100.00	100.00	28.70
267	0.14	0.71	0.04	2.94	3.33	50.00	74.47	96.67	50.00	25.53
270	1.24	0.68	0.35	1.10	17.29	6.25	21.21	82.71	93.75	78.79
272	2.09	2.66	6.63	0.59	31.77	53.11	59.78	68.23	46.89	40.22
273	1.97	0.65	2.15	2.35	67.70	86.11	90.50	32.30	13.89	9.50
275&277	0.00	0.00	0.03	2.95	NA	0.00	87.12	NA	100.00	12.88
276	3.72	0.75	0.20	0.69	11.93	5.56	51.39	88.07	94.44	48.61
279	1.04	0.60	0.18	3.06	37.39	31.25	79.80	62.61	68.75	20.20
285	1.89	0.41	0.15	0.00	2.47	0.00	NA	97.53	100.00	NA
290&294	0.31	0.00	0.52	1.46	13.64	63.83	90.90	86.36	36.17	9.10
291	7.93	3.24	9.42	14.14	21.82	67.21	88.78	78.18	32.79	11.22
301	0.31	2.37	0.12	0.00	0.00	0.00	NA	100.00	100.00	NA
304&305	1.37	0.74	0.40	0.00	4.11	16.67	NA	95.89	83.33	NA
320	1.40	5.07	9.46	7.36	3.00	17.33	12.45	97.00	82.67	87.55
322	3.44	4.03	9.16	0.00	69.12	74.47	NA	30.88	25.53	NA
323	0.00	0.00	0.00	10.74	NA	NA	93.48	NA	NA	6.52
329	9.78	0.00	0.00	0.00	2.73	NA	NA	97.27	NA	NA
330&331	0.73	2.54	2.06	0.00	1.28	20.34	NA	98.72	79.66	NA
343	4.37	3.29	3.64	0.00	55.08	80.62	NA	44.92	19.38	NA
345	1.71	0.21	0.39	0.00	10.38	0.00	NA	89.62	100.00	NA
349	0.17	0.00	0.04	6.29	5.41	0.00	62.03	94.59	100.00	37.97
350	1.34	1.17	2.41	0.00	6.64	1.37	NA	93.36	98.63	NA
383	1.85	2.05	3.32	4.08	20.96	45.91	63.65	79.04	54.09	36.35
389	10.77	0.66	0.15	0.00	81.80	57.14	NA	18.20	42.86	NA
970	0.88	1.24	1.89	0.00	13.76	21.05	NA	86.24	78.95	NA
971&972	4.96	1.68	1.20	0.00	5.94	3.67	NA	94.06	96.33	NA
973	0.81	2.05	0.49	0.00	2.87	2.27	NA	97.13	97.73	NA
974	3.59	2.02	2.28	0.00	4.30	5.80	NA	95.70	94.20	NA
975	3.02	0.00	2.78	0.00	6.51	13.12	NA	93.49	86.88	NA
979	0.33	10.66	1.79	0.00	11.43	19.14	NA	88.57	80.86	NA

TABLE 6
DELHI

	PERCENT OF WORKERS IN EACH GROUP				PERCENT OF HOUSEHOLD WORKERS				PERCENT OF NON HOUSEHOLD WORKERS			
	W.W/T.W*100				HH/WW*100				NHH/W*100			
NIC	1991	1981	1971	1961	1991	1981	1971	1961	1991	1981	1971	1961
204	0.84	1.21	1.44	1.99	11.98	7.78	10.76	2.61	88.02	92.22	89.24	97.39
205	0.72	0.68	0.72	1.02	6.65	6.52	6.85	6.21	93.35	93.48	93.15	93.79
209	0.51	1.51	1.28	1.66	12.73	5.92	9.98	6.59	87.27	94.08	90.02	93.41
219	0.48	1.78	0.24	0.00	25.47	6.61	16.57	0.00	74.53	93.39	83.43	0.00
232	0.05	0.11	0.20	15.82	8.16	10.10	36.07	0.00	91.84	89.90	63.93	100.00
235	1.81	5.28	9.60	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	0.00
260	1.06	0.72	0.97	1.44	6.09	10.11	10.00	10.32	93.91	89.89	90.00	89.68
262	2.00	1.64	1.49	1.37	12.57	14.75	21.12	21.02	87.43	85.25	78.88	78.98
265	7.81	12.92	7.44	0.00	6.50	5.27	17.29	0.00	93.50	94.73	82.71	0.00
266	0.19	0.04	0.07	11.10	12.32	15.74	30.19	12.20	87.68	84.26	69.81	87.80
274	0.01	0.04	2.07	0.00	4.04	14.43	10.41	0.00	95.96	85.57	89.59	0.00
276	3.14	1.77	1.92	3.67	4.35	5.84	11.58	6.71	95.65	94.16	88.42	93.29
279	0.42	1.56	0.56	3.15	20.07	5.69	18.25	12.09	79.93	94.31	81.75	87.91
280&281&282&283	1.86	1.29	0.95	0.77	15.74	17.22	20.45	26.79	84.26	82.78	79.55	73.21
284	0.85	1.12	1.41	2.48	0.13	0.35	0.32	0.00	99.87	99.65	99.68	100.00
285	2.57	1.73	1.51	0.82	1.56	1.51	3.82	0.69	98.44	98.49	96.18	99.31
287&289	1.80	3.02	3.72	5.41	2.84	3.16	3.55	0.89	97.16	96.84	96.45	99.11
288	0.86	0.87	1.01	1.44	11.49	10.91	9.51	5.97	88.51	89.09	90.49	94.03
291	1.93	1.30	2.62	4.00	13.51	17.08	34.23	41.25	86.49	82.92	65.77	58.75
293&299	1.29	0.80	0.89	0.73	7.87	14.75	28.66	26.62	92.13	85.25	71.34	73.38
304&305	1.51	1.40	1.16	1.64	3.86	3.91	6.64	5.08	96.14	96.09	93.36	94.92
306	0.00	0.00	0.01	1.37	0.00	0.00	7.69	9.94	100.00	0.00	92.31	90.06
313	5.07	3.40	1.91	0.00	5.20	6.27	11.73	0.00	94.80	93.73	88.27	0.00
320	0.36	2.95	4.93	8.06	24.21	1.03	1.55	0.47	75.79	98.97	98.45	99.53
322	1.58	0.40	0.60	0.00	9.67	52.41	71.78	0.00	90.33	47.59	28.22	0.00
323	0.02	0.11	0.18	1.58	3.73	9.61	1.12	61.73	96.27	90.39	98.88	38.27
326	0.10	0.08	1.01	1.64	4.50	3.49	2.50	0.85	95.50	96.51	97.50	99.15
330&331	1.36	2.60	1.85	4.28	0.30	2.51	6.13	5.43	99.70	97.49	93.87	94.57
341	0.99	2.17	2.37	1.87	3.54	6.48	14.68	15.37	96.46	93.52	85.32	84.63
343	1.25	1.69	1.81	0.00	9.61	5.73	20.62	0.00	90.39	94.27	79.38	0.00
345	6.22	2.12	2.02	3.30	3.49	3.53	7.14	3.43	96.51	96.47	92.86	96.57

346	1.84	0.67	0.36	0.00	2.70	7.28	17.42	0.00	97.30	92.72	82.58	0.00
349	1.48	0.37	0.33	6.47	7.28	6.67	11.90	10.44	92.72	93.33	88.10	89.56
356	0.18	2.86	2.29	0.00	0.00	3.03	6.39	0.00	100.00	96.97	93.61	0.00
357	1.61	0.57	0.60	0.00	0.00	2.15	9.88	0.00	100.00	97.85	90.12	0.00
359	0.31	0.93	0.92	0.00	2.54	2.24	5.44	0.00	97.46	97.76	94.56	0.00
361	1.30	0.94	0.67	0.00	2.11	2.59	2.80	0.00	97.89	97.41	97.20	0.00
363&364	3.73	2.10	1.25	0.00	2.08	2.85	4.45	0.00	97.92	97.15	95.55	0.00
365&366	2.99	1.82	1.47	1.61	1.40	2.06	7.01	2.13	98.60	97.94	92.99	97.87
373&374&375	3.17	2.44	1.90	0.00	1.04	3.73	6.03	0.00	98.96	96.27	93.97	0.00
376	0.28	0.30	0.47	1.57	3.74	2.99	11.05	5.31	96.26	97.01	88.95	94.69
383	1.52	1.60	1.93	3.32	12.23	18.17	21.06	14.82	87.77	81.83	78.94	85.18
389	2.51	4.01	5.27	0.00	32.26	5.21	8.62	0.00	67.74	94.79	91.38	0.00
970	0.60	0.99	1.27	0.00	2.13	2.89	10.94	0.00	97.87	96.48	89.06	0.00
971&972	4.52	1.24	1.14	0.00	2.01	2.18	4.00	0.00	96.17	97.75	96.00	0.00
974	5.43	4.46	4.00	0.00	1.03	1.50	4.14	0.00	98.97	98.46	95.86	0.00
975	1.35	0.00	1.32	0.00	2.55	0.00	9.05	0.00	97.45	0.00	90.95	0.00
979	1.25	2.49	1.95	0.00	1.84	16.62	6.77	0.00	98.16	81.02	93.23	0.00

TABLE 7
BULUNDSHAHR

	PERCENT OF WORKERS IN EACH GROUP				PERCENT OF HOUSEHOLD WORKERS			PERCENT OF NON HOUSEHOLD WORKERS		
	W.W/T.W*100				HH/WW*100			NHH/W*100		
NIC	1991	1981	1971	1961	1991	1971	1961	1991	1971	1961
201	0.39	0.21	2.06	0.00	8.57	26.76	0.00	91.43	73.24	NA
204	3.19	2.47	2.81	3.36	14.97	29.25	44.90	85.03	70.75	55.10
206	2.18	2.60	0.63	2.82	0.00	0.00	0.00	100.00	100.00	100.00
207	0.97	1.16	0.18	0.80	14.02	29.41	41.98	85.98	70.59	58.02
209	2.88	4.01	1.95	3.27	10.08	28.33	58.78	89.92	71.67	41.22
210	0.28	0.00	0.08	0.00	0.00	0.00	NA	100.00	100.00	NA
211&212	0.81	0.89	2.63	4.49	11.55	75.76	87.69	88.45	24.24	12.31
219	1.54	1.29	1.31	0.00	12.87	47.11	NA	87.13	52.89	NA
226	0.18	0.00	0.02	7.14	28.38	50.00	99.68	71.62	50.00	0.32
230	0.09	0.00	1.12	1.86	15.79	65.32	80.69	84.21	34.68	19.31
231	0.49	1.86	0.58	4.08	79.89	96.27	96.24	20.11	3.73	3.76
233	2.50	5.82	3.49	14.40	68.36	88.52	95.17	31.64	11.48	4.83
235	3.15	0.67	0.53	0.00	0.00	0.00	NA	100.00	100.00	NA
236	0.74	0.54	1.74	0.00	17.55	86.34	NA	82.45	13.66	NA
253&256&259	0.05	0.00	0.02	1.37	39.39	100.00	95.29	60.61	0.00	4.71
261	0.61	0.23	1.14	0.00	15.36	75.24	NA	84.64	24.76	NA
262	6.19	1.71	0.24	1.31	53.31	50.00	87.86	46.69	50.00	12.14
263	0.52	0.92	1.37	0.81	12.50	82.68	84.98	87.50	17.32	15.02
265	0.15	12.42	11.48	0.00	9.57	38.00	NA	90.43	62.00	NA
266	0.07	0.00	0.00	10.14	7.69	NA	67.96	92.31	NA	32.04
270	1.11	0.14	0.56	0.00	9.78	0.00	NA	90.22	100.00	NA
272	5.68	6.16	10.05	1.80	21.96	68.42	82.91	78.04	31.58	17.09
273	2.32	4.66	5.59	2.23	48.88	73.92	95.75	51.12	26.08	4.25
275&277	0.07	0.00	0.02	5.08	2.38	100.00	91.35	97.62	0.00	8.65
276	3.14	0.93	0.17	3.05	14.78	43.75	78.43	85.22	56.25	21.57
279	1.06	0.00	0.28	3.87	34.45	53.85	79.07	65.55	46.15	20.93
290&294	0.14	0.00	0.53	1.52	15.48	8.16	76.77	84.52	91.84	23.23
291	1.39	1.49	4.50	4.28	9.28	68.04	84.90	90.72	31.96	15.10
320	2.78	2.02	0.90	1.98	1.25	51.69	15.20	98.75	48.31	84.80
321	1.00	0.54	0.57	0.65	2.73	3.77	82.75	97.27	96.23	17.25
322	4.76	6.59	8.29	0.00	36.77	79.92	NA	63.23	20.08	NA
323	1.44	0.18	0.53	9.00	4.48	12.24	95.81	95.52	87.76	4.19
329	2.71	0.00	0.04	0.00	1.65	0.00	NA	98.35	100.00	NA
330&331	1.96	0.79	0.23	0.00	5.28	0.00	NA	94.72	100.00	NA
341	0.14	1.01	0.64	0.00	2.35	37.29	NA	97.65	62.71	NA

343	2.26	3.53	5.62	0.00	12.77	66.95	NA	87.23	33.05	NA
345	1.62	0.22	0.53	0.00	4.48	24.49	NA	95.52	75.51	NA
346	0.21	0.18	0.35	0.00	27.13	6.25	NA	72.87	93.75	NA
349	0.47	0.56	0.41	5.84	8.11	15.79	79.75	91.89	84.21	20.25
350	1.05	0.23	0.11	0.00	12.48	10.00	NA	87.52	90.00	NA
383	1.91	1.86	1.59	2.90	15.53	34.10	57.45	84.47	65.90	42.55
389	8.86	1.01	3.81	0.00	97.32	80.67	NA	2.68	19.33	NA
970	0.71	1.41	2.76	0.00	7.50	19.62	NA	92.50	80.38	NA
971&972	2.86	0.83	0.64	0.00	1.91	20.34	NA	98.09	79.66	NA
973	1.44	1.16	1.36	0.00	5.33	0.00	NA	94.67	100.00	NA
974	3.08	1.60	1.30	0.00	2.39	13.36	NA	97.61	86.64	NA
975	2.71	2.27	2.64	0.00	3.79	0.00	NA	96.21	100.00	NA
979	1.52	6.38	1.29	0.00	40.28	26.89	NA	59.72	73.11	NA

TABLE- 8
ALWAR

	PERCENT OF WORKERS IN EACH GROUP				PERCENT OF HOUSEHOLD WORKERS			PERCENT OF NON HOUSEHOLD WORKERS		
	W.W/T.W*100				HH/WW*100			nhh/ww*100		
NIC	1991	1981	1971	1961	1991	1971	1961	1991	1971	1961
204	3.52	3.63	2.08	1.49	21.40	23.32	28.94	78.60	76.68	71.06
209	2.98	3.20	2.14	2.03	4.93	19.96	26.42	95.07	80.04	73.58
211&212	1.14	0.80	1.01	1.59	5.34	36.15	61.14	94.66	63.85	38.86
219	0.91	1.30	0.33	0.00	19.48	35.29	0.00	80.52	64.71	NA
231	0.17	2.42	0.91	9.94	70.93	87.18	83.53	29.07	12.82	16.47
233	0.19	1.46	4.13	10.38	77.55	83.00	93.50	22.45	17.00	6.50
235	1.69	0.98	0.06	0.00	0.00	0.00	0.00	100.00	100.00	NA
236	0.41	0.63	0.60	1.91	19.62	96.77	106.78	80.38	3.23	-6.78
244&245	0.31	1.53	0.00	0.00	0.00	NA	0.00	100.00	NA	NA
247	2.60	0.33	0.00	0.00	0.53	NA	0.00	99.47	NA	NA
261	4.70	0.83	1.44	0.00	6.96	97.30	0.00	93.04	2.70	NA
263	2.58	2.53	0.14	0.00	43.63	100.00	0.00	56.37	0.00	NA
265	0.57	12.35	9.93	0.00	64.26	48.73	0.00	35.74	51.27	NA
266	0.11	0.00	0.00	8.78	7.14	NA	34.73	92.86	NA	65.27
270	1.03	0.43	0.14	2.65	23.57	14.29	87.52	76.43	85.71	12.48
272	3.92	6.62	0.16	3.58	50.23	37.50	89.42	49.77	62.50	10.58
273	2.33	3.26	1.73	0.00	71.62	69.51	0.00	28.38	30.49	NA
275&277	0.07	0.00	0.12	6.29	52.94	83.33	92.00	47.06	16.67	8.00
276	3.61	2.13	14.17	4.51	40.94	76.52	71.13	59.06	23.48	28.87
279	0.82	0.00	0.02	1.88	54.31	NA	0.00	45.69	0.00	100.00
290&294	0.19	0.00	2.85	1.46	53.13	74.80	88.82	46.88	25.20	11.18
291	5.30	8.23	12.00	18.26	51.29	77.57	83.98	48.71	22.43	16.02
***	0.00	0.00	0.00	2.52	NA	NA	78.71	NA	NA	21.29
313	0.99	0.00	0.04	0.00	1.58	50.00	0.00	98.42	50.00	NA
321	0.49	0.00	0.00	1.22	32.54	NA	87.80	67.46	NA	12.20
322	7.32	9.26	9.85	0.00	78.62	87.56	0.00	21.38	12.44	NA
323	0.31	0.00	0.02	14.52	8.33	0.00	89.97	91.67	100.00	10.03
324	0.96	2.60	0.19	0.00	5.08	0.00	0.00	94.92	100.00	NA
326	3.19	1.53	1.11	0.00	29.52	56.14	0.00	70.48	43.86	NA
329	2.25	0.58	0.00	0.00	2.09	NA	0.00	97.91	NA	NA
343	1.73	4.08	2.64	0.00	39.21	58.74	0.00	60.79	41.26	NA
349	0.83	0.29	0.02	2.30	2.12	0.00	74.22	97.88	100.00	25.78
357	1.09	0.00	0.00	0.00	0.00	0.00	0.00	100.00	NA	NA
365&366	1.53	0.00	0.00	0.00	0.00	0.00	0.00	100.00	NA	NA

373&374&375	2.00	0.53	0.02	0.00	0.29	0.00	0.00	99.71	100.00	NA
383	2.46	2.63	2.72	3.20	26.41	54.13	48.50	73.59	45.87	51.50
389	7.12	1.10	6.40	0.00	29.27	87.87	0.00	70.73	12.13	NA
970	0.78	1.64	6.21	0.00	0.00	4.00	0.00	100.00	96.00	NA
971&972	1.57	2.24	1.96	0.00	1.25	4.95	0.00	98.75	95.05	NA
973	0.74	1.57	2.58	0.00	5.59	3.77	0.00	94.41	96.23	NA
974	1.36	2.30	2.02	0.00	0.43	15.33	0.00	99.57	84.67	NA
975	2.17	3.31	2.83	0.00	1.90	6.85	0.00	98.10	93.15	NA
979	0.64	6.07	2.32	0.00	8.56	10.85	0.00	91.44	89.15	NA

APPENDIX_3

NIC CLASSIFICATION BASED ON INPUT

I AGRO BASED IND	II METAL BASED IND	III CHEMICAL BASED IND	Non-metal mineal based indistrues
20_21	33	30	31
22	34	313	32
23	35	314	
24	36-362	315	
25	37		
26	38		
27			
28			
29			

NIC CLASSIFICATION BASED ON USE

I BASIC INDUSTRIES IND	II INTERMEDIATE IND			III CAPITAL BASED IND		IV CONS. DURABLES		V. CONS. NON DURABLES		
208	211&212	294	316	343	359	276	367	20_21	304	389
300	24&25	303	320	350	360	277	374	22	305	
301	270	308	329	351	361	278	375	233	311	
324	271	309	34-343	352	370	279	376	234	321	
331	274	310	362	353	371	342	380	241&242	322&323	
334	275	312		355	372	364	382	26	345	
335	280	314		356	373	365	383	28-280	363	
336	290	315		357	379	366	97	291	381	

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