

Spatio—Temporal Analysis of Migration in The National Capital Region, India

**Dissertation submitted to the Jawaharlal Nehru University
in partial fulfilment of the requirement for
the award of the degree of
MASTER OF PHILOSOPHY**

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1988



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CERTIFICATE

Certified that the dissertation entitled "Spatio-temporal Analysis of Migration in the National Capital Region, India" submitted by Mr. Govindaru. V is in partial fulfilment of the requirements for the Degree of Master of Philosophy of this University. This dissertation has not been submitted for any other degree to this University or to any other University and is his own work.

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


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ACKNOWLEDGEMENTS

I take this opportunity to express my immense indebtedness to my Supervisor for her meticulous and patience supervision and stimulating interest throughout the course of this work.

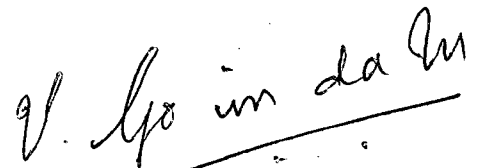
My sincere gratitude is also due to Dr. Aslam Mahmood who helped me in doing the statistical calculations.

I acknowledge the efficient services rendered by the staff of Deputy Registrar General's Office, Demographic Division, Asaf Ali Road; particularly to Mr. K.S. Natarajan (Deputy Registrar General, Census of India) who allowed me ^{to} access the unpublished form of 1981 census data.

I owe a debt of gratitude to my parents who have been a source of love and inspiration. Without their encouragement, it would not have been possible for me to do this exercise.

I am equally thankful to Miss Sanghmitra Sheel (Didi) for her encouragement throughout the period of this work.

Lastly, my thanks are due to Mr. and Mrs. Varghese who have taken considerable trouble in typing out this dissertation.



(GOVINDARU. V)

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INTRODUCTION

Migration has been considered to be one of the three major subjects that comprises the field of population study. The other two are biological variables, i.e. fertility and mortality, though social, cultural, economical and political factors do exercise some influence on it. Migration, on the other hand, is entirely determined by the person's interest who is involved except for some circumstances. Usually, each migratory movement is intentionally made to move. It is therefore, an outcome of social, cultural, economic, political and physical surroundings in which individuals and societies find themselves to settle at any other places.

Concept of Migration

"There is no universally accepted definition of migration".¹ The concept of migration is applicable to only in the case of relatively settled population as others are not having a definite boundary of spatial unit in which they are living. Every member of a settled population resides at some point or series of points in space. A change in location of his residence is termed 'spatial mobility'.² Statistically,

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1. United Nations, The Determinants and Consequences of Population Trends, Vol.1, Population Studies, No.50, New York: 1973, p.173.
 2. Hauser and Duncan (eds.), The Study of Population: An Inventory and Appraisal, University of Chicago, 1959.

there is no problem of indentifying the people who are spatially mobile, because it is studied on the basis of distance in space people crossed to settle in new site. However, it is difficult to separate local movers from migrants satisfactory for all purposes. Only practical way yet devised for making such a separation, even approximately, is to set-up boundaries which, if crossed in the act of changing residence will constitute migrants.³

The United Nations Multilingual Dictionary defines: "migration is a form of geographical mobility or spatial mobility between two geographical units involving a permanent change of residence".⁴ Generally, migration is determined by administrative boundaries which has various disadvantages. Among them risk of non-comparability of data over time due to change in the size of area is important one.⁵

Terms and Concepts Used in Migration Study

The meanings of the terms and concepts used in the study of migration are distinct from common parlance. The collection and the analysis of migration data are carried

3. Ibid.

4. United Nations, The Determinants and Consequence of Population Trends, Vol.1, Population Studies, No.50, New York: 1973, p.173.

5. United Nations, Manual VI Methods of Measuring Internal Migration, Population Studies, No.47, New York: 1970.

out on the basis of concepts built up by population scientists working in the field of migration. They are:

1. Internal migration. It is the mobility or movement of people within the national boundaries.
2. International Migration. Movement of people from one nation to another is known as international migration.
3. Immigration and Emigration. These terms refer respectively to movement into and out of a particular nation.
4. Inmigration and Outmigration. Inmigration refers to movement of people into a particular area, while outmigration refers to movement out of a particular area within a country.
5. Place of origin and place of destination. The place from which a mobility starts is place of origin and the place at which it terminates is place of destination.
6. Gross and Net Migration. Summation of in and out-migrants is known as gross migration. Netmigration is the difference between the total number of persons who arrive and leave.
7. Migration Streams. It refers to total number of migrants during a given period having a common area of origin and common area of destination.

Internal Migration: A Theoretical Outlook

"Internal migration can be thought of as part of a more general phenomenon".⁶ It is subject to differ in the existing development pattern over a period of time, in between two geographical units and more or less regulated by psychological feeling of security and the efforts to make life more comfortable. Researchers have studied both empirical as well as theoretical aspects of socio-economic causes and consequences of migration. Mainly these studies dealt with its selectivity by age, sex, marital status, education, occupation, spatial pattern of flow and distance including migration models and the behavioural aspects of the decision making.)

'Push and pull' theory is one of the earliest generalisation of why do people migrate from one place to another. Two sorts of pressures have been hypothesized in this study which could lead to migration from rural setting to urban. The pressure of rural surplus labour and poverty, due to the replacement of traditional mode of cultivation (labour intensive) by new scientific method (capital intensive), is the foremost. These factors are known as 'push factors'. The second type of pressure components on the migrants are

6. Bruce H.Herrick, Urban Migration and Economic Development in Chile, The MIT Press, London, 1965, p.10.

'pull factors' of urban centres. There are more employment opportunities, higher wages, better education, entertainment etc. which attract the migrants to cities.

Ravenstien (1885-89)⁷ says that migration is preponderantly of short distance, -i.e., the volume of migration diminishes as the distance from the centre of absorption increases, each main stream of migration produces a compensating counter stream; long distance movers generally prefer to go to big cities of commerce and industry; town dwellers are less prone to move than rural residents and females are more migratory than males. On the basis of above observations, he concludes the process of urbanisation vicissitudes people from region of lower economic opportunity to place where have better chances.

Stauffer (1940)⁸ describes - the number of persons migrating a given distance, is directly proportional to the number of opportunities at the place of destination and indirectly proportional to the number of intervening opportunities. From this, Kant and Zipf (1949)⁹ have developed their gravity model in which migration is proportional to the product of population of place of origin and destination

7. United Nations, The Determinants and Consequences of Population Trends, Vol.1, Population Studies, No.50, New York, 1973.

8. Ibid.

9. Ibid.

and inversely related to the distance. Somermeiger (1961)¹⁰ has modified the gravity model by introducing explanatory 'attractiveness factors' each of them with different values in the place of departure and arrival. This model enables to describe not only the net and gross-migration between two places but permits incorporation of all explanatory variables of pull and push dichotomy.

According to Schultz and Sjaastad (1962)¹¹ migration may be considered within a model of costs and returns on investment in human capital. The cost of investment must be compared with the returns. It means, expected income at the place of destination would be greater than overall investments.

Everett S.Lee's model (1963)¹² is elucidating the factors associated with pull and push theory of migration. Within these two forces he introduces the concept of intervening obstacles and personal factors. They are actually the investment costs of Schultz and Sjaastad model.

The Lewis-Fei-Ranis (1959)¹³ model of development gives attention to the process of labour transfer in between

10. Ibid.

11. Bruce H.Herrick, Urban Migration and Economic Development in Chile, The MIT Press, London, 1965.

12. George J.Demko (ed.), Population Geography: A Reader, McGraw Hill Book Co., New York, 1970.

13. Michael P.Todaro, Internal Migration in Developing Countries: A Review of Theory, Evidence, Methodology and Research Priorities, ILO, Geneva, 1976.

rural and urban areas. In this model, economy consists of traditional and modern sectors. Traditional sector or rural subsistence sector is characterised by zero or lower productivity and surplus labours. As well as, the modern sector consists of high productivity into which labour from rural subsistence sector is gradually transferred. The rate of labour transfer or migration and employment opportunities in the urban sector are proportional to the rate of urban capital accumulation. According to this model, the volume of migration is higher when the influence of primate city is higher over the region.

 Todaro's model (1976)¹⁴ is response to the urban rural differences in expected than actual earning. It is stimulated by rational economic consideration of relative benefits and costs in terms of financial and psychological conditions. Decision to migrate depends on expected rather than actual rural-urban real wage differentials. Here, the expected differential is determined by actual rural-urban wage differences and chances of getting employment in urban sector which is inversely related to urban employment rate. This kind of analysis does not seem to be in the context of existing institutional and economic framework of most developing countries.

14. Ibid.

All these theories and models are either situation oriented or descriptive in nature and have as their objectives on measuring volume of migration and, perhaps, some of the characteristic of migratory movement during a specific period of time. When the volume and direction of movements have been estimated from different statistics, the knowledge and characteristics of migrants are combined with the data on characteristics of people at origin and destination points, in order to analyse the decisive factors underlying the movements.

Urban Inmigration: An Appraisal of Indian Studies

In the sphere of migration studies, a considerable number of literature has developed during the last two decades, particularly, on rural-urban migration. It seems one of the most significant issues in developing countries due to the concentration of economic activities at certain points, which leads to uneven development. According to 1961, 1971 and 1981 censuses 33.0, 30.40 and 30.70 per cent of people to the total population respectively are migrants. Indian situation of rural-urban migration is not different from what it has been in other developing countries. It involves a drastic change in socio-economic set up and break in cultural and linguistic ties for the migrants.¹⁵

15. K.C. Zacharia, "Migration to Greater Bombay 1941-51", The Indian Journal of Social Work, 20(3), December 1959, pp.190-92.

It indicates changes not only in the life of migrants but also the life of people of their native places. Migrants act as an agent of cultural diffusion¹⁶ and add a very major contribution in the process of urbanisation.¹⁷

The excessive growth of rural population in relation to per capita agricultural production and land holding has been pushing the rural people to urban areas for improving their standard of living.¹⁸ The more an individual is poor, landless and socio-economically deprived, greater the chance of migration from rural to urban areas.¹⁹ The rich migrate out of desire for better and greater comforts of life, while poor migrate out of economic compulsion to improve his living conditions. The people of higher educational level and

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16. M.S. Gore, Inmigration and Neighbourhoods: Two Aspects of Life in a Metropolitan City, Bombay, Tata Institute of Social Sciences, 1970.
17. K.C. Zacharia, Migrants in Greater Bombay, Asian Publishing House, Bombay, 1968.
18. C.R. Prasad Rao, "Rural Urban Migration: A Clue to Rural-Urban Relations in India", The Indian Journal of Social Work, 30(4), January, 335-42. See also, Osaka City University, Institute for Economic Research, Rural Urban Migration and Pattern of Employment in India: An Interim Report of Socio-Economic and Socio-Linguistic Survey in Kanpur, Jullendar and Fatehabad, Osaka City University Press, 1983.
19. S. Mukherjee, "Understanding Canonical Analysis and Its Application Through Human Mobility Research," Geographical Review of India, 1979, 41(3), 234-49.

economic position have higher propensity to migrate.²⁰ Pace of rural out migration is determined by living conditions of urban; like housing, sanitation, medical, power and water supply, security of life and property, transportation and communication, education and entertainments.²¹

Rural outmigration seems to be highly concentrated among young and educated. Zacharia's analysis on Greater Bombay (1968) highlights that proportion of migrants varies with age. At age below 20 years, the migration rate is lower than the general average at the age 20 years and above constantly higher, reaching a maximum in the age group of 30-34 years. Quantitative analyses of 40 Indian villages²² and class one cities of India²³ are also verifying this generalisation. The Punjab Study (Oberoi and Manmohan Singh, 1983) observes that 88.7 per cent of rural outmigrants have formal education out of whom a little over one half have completed at least high school education. The study of Osaka

20. Oberoi and Manmohan Singh, Causes and Consequences of Internal Migration: A Study in Indian Punjab, Oxford University Press, New Delhi, 1983.

21. G.S.Gosal and Krishan, "Pattern of Internal Migration in India", in Leszek et.al (eds.), People on the Move, Methuen and Co., London, 1975, pp.193-206.

22. John Connel et.al, Migration from Rural Areas: The Evidence from Village Studies, Oxford University Press, New Delhi, 1976.

23. M.K. Premi and Ton, City Characteristics, Migration and Urban Development Policies in India, Papers of East-West Population Institute, No.92, Honolulu, 1985.

City University's Institute for Economic Research in India (1980), Greenwood²⁴ (1977:137), Premi (1985) and several other studies have found migrants possessing a higher educational attainment than non-migrants.

According to pull and push theory, the house-hold with more resources will tend to migrate less than those with fewer resources. But the studies are showing a different pattern in India. The sample study of North Indian villages (Connel, 1976) exemplifies most of the migrants in the sample came from other than landless agricultural households. Various studies - Oberoi and Singh (1983); J.P. Singh (1984: 143²⁵ and 1987:23)²⁶ and Najma Khan²⁷ (1986) also confirm this finding. It may be related with the prevailing economic status of Indian people, where 20 to 30 per cent of people are landless and more than 50 per cent are owning land too small to be economically profitable and spatial interaction of study areas' with surrounding regions. In the case of

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24. M.T. Greenwood, "An Analysis of the Determinants of Internal Labour Mobility in India," Annals of Regional Science, Vol.5, 1977, pp.137-51.
25. J.P. Singh, "Distance Pattern of Rural to Urban Migration in India: A Comparative Over Review of Keral and West Bengal", Man in India, 64(2), June 1984, pp.143-53.
26. J.P. Singh, "Educational Differentials in Cityward Migration in India," Man in India, Vol.67(1), 1987, 23-35.
27. Najma Khan, Pattern of Rural Out-migration: A Microlevel Study, B.R. Publishing Corporation, Delhi, 1986.

short distance migration, it is also true that rural poverty plays a main role to pushout people to nearby cities. For example, Muttagi's²⁸ study on Bombay Metropolitan city gives a typical profile of Gujarati migrants who come to Bombay are from poor families or junior members of a large family, uneducated or less educated and do not posses any specialised skills. At the same time Najma Khan (1986) has observed, after the sample study of 20 villages in U.P., that a considerable number of out migrants in these villages are self or head of the household.

In relation to caste and sex, migration rate is varying in India. Certain castes and communities are found to have a tradition of migrating without their female flocks.²⁹ The studies of Mysore and Banglore cities³⁰ have highlighted that the upper class people are more migratory than those belonging to lower castes. It is interesting that Najma Khan's (1986) findings lead us to the opposite direction. She says the proportion of scheduled caste outmigrants to total outmigrants is high and comparison of their corresponding share with residence shows a very high order selectivity.

28. P.K.Muttagi, Trends and Patterns of Migrants in Metropolitan Cities: A Case Study of Greater Bombay, paper presented at the Indo-Soviet Seminar on Problems of Migration in the Process of Urbanisation - September 18-23, 1984, Osmania University, Hyderabad.

29. J.F.Bulsara, Problems of Rapid Urbanisation India, Popular Prakashan, Bombay, 1964.

30. Noel P.Gist, "Selective Migration in South India," Sociological Bulletin, Vol.4(2), 1955, 147-60.

One common phenomena found in these studies is mot of the newly migrated males are single at the place of destination. It may be due to the fact that they are unable to meet the dependents' expences and other factors associated with new environment of destination. Studies of Premi (1976)³¹, (1985); Ashish Bose (1978)³²; Oberai and Singh (1983); Zacharia (1968); Rao and Desai (1965)³³; etc. give a clear picture about male and age selectivity of migration, particularly in long distance mobility.

Urban to urban movement is another stream of migration through which diffusions are trickling down from big cities to smaller towns. If we compare these streams of mobility with rural-urban, the latter has a predominant role in the process of urbanisation. Urban to urban migration is believed to be dominated by middle class people (J.P. Singh, 1987:23) and it may be due to the fastest growth of class one towns than other classes of towns. Ashish Bose (1978) has observed that urban to urban migration, especially migrants from small towns to big cities is becoming

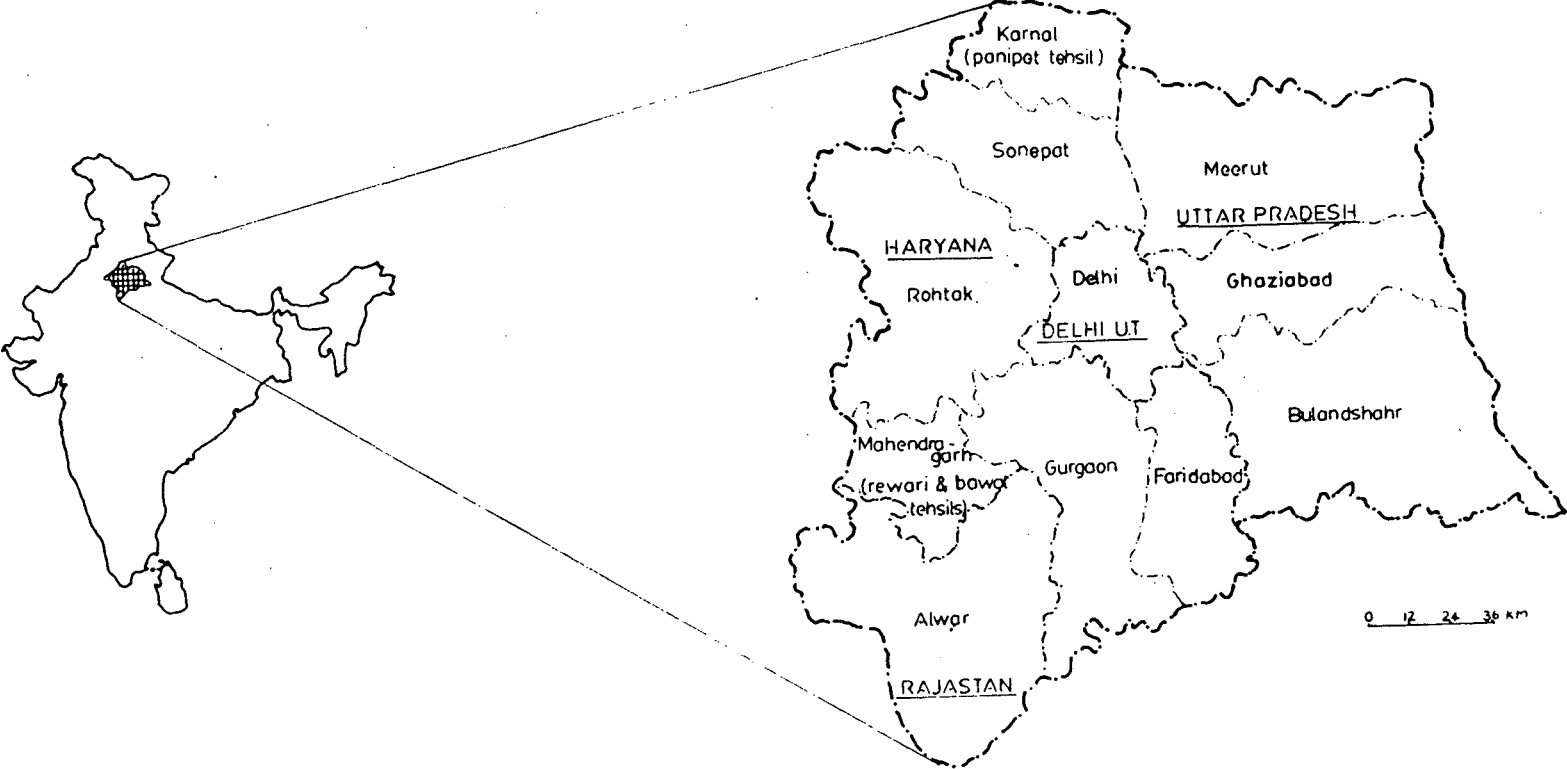
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31. M.K. Premi, "Urban Outmigration: Its Pattern and Characteristics of Outmigrants," Occasional Paper of CSRD, No.3, School of Social Sciences, JNU, New Delhi, 1976.
 32. Ashish Bose, India's Urbanisation 1901-2000, Tata McGraw Hill Publishing Co., Ltd., New Delhi, 1978.
 33. V.K.R.V. Rao and Desai, Greater Delhi: A Study in Urbanisation (1940-57), Asian Publishing House, Bombay 1965.

increasingly important in our country. This is because bigger cities are in a better position to offer more employment opportunities to migrants. Many scholars have observed the movement of people from small towns to big cities by 'step migration'. It has not been happening in India. The Studies of Zacharia (1968): Rao and Desai (1965); etc. support this fact. On the basis of distance from the place of origin and duration of residence at the place of enumeration, Premi (1985) has noticed - intradistrict urban to urban migration is higher than rural intradistrict and proportion of current migrants is significantly higher in service cities.

Area of Study

Present Study has a focus on the characteristics of migration and its related problems on the development planning of National Capital Region (NCR) of India. The NCR is a planning unit which was evolved and approved by the Government of India in 1962 for ensuring balanced and harmonised development of Delhi and its vicinity. It lies between $27^{\circ} 18'$ and $29^{\circ} 29'$ north latitude and $76^{\circ} 09'$ and $78^{\circ} 29'$ east longitude with an area of 30242 sq.km. and spread over parts of Haryana, Rajasthan and Uttar Pradesh states with the Union Territory of Delhi as its core (Map 1). Administrative division of NCR are:

LOCATION OF N.C.R.



MAP NO. 1

1. Union Territory of Delhi. It is the core region of NCR and consists of 1483 sq.km.
2. Haryana sub-region (13413 sq.km.) comprising Faridabad, Gurgaon, Rohtak and Sonapat districts; Rewari and Bawal tehsils of Mahendragarh district and Panipat tehsil of Karnal district. This region accounts for about 30.33 per cent of total area of the state.
3. Rajasthan Sub-region (4493 sq.km.). Comprising six tehsils of Alwar district, namely, Alwar, Ramgarh, Bahroor, Mandawar, Kishangarh and Tijra. The area under this region is 1.31 per cent of Rajasthan state.
4. Uttar Pradesh Sub-region (10853 sq.km.) comprises three districts of the state, namely, Meerut, Ghaziabad and Bulandshahr (Map 2).

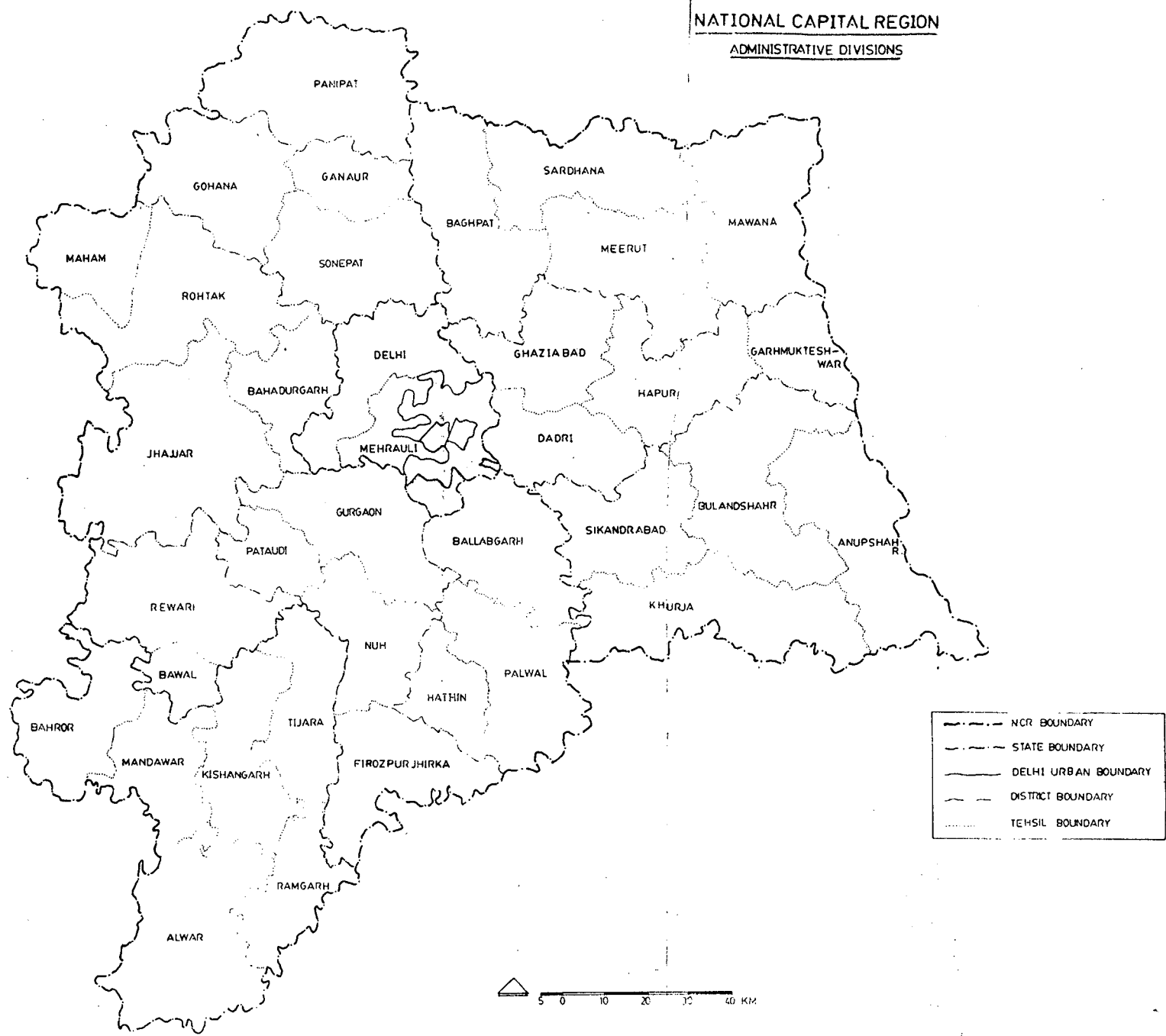
According to 1981 census NCR has 26 tehsils and 94 towns and has a population of 191.9 lakhs.

Morphology of NCR

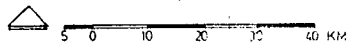
The prominent natural features of NCR are the river Ganges as its eastern boundary, the Yamuna, barren low hills of Aravallis and its out crops and sand dunes in the West, the flat topped wet hills of Aravalli ranges enclosing with fertile valleys and high table lands in the south-west, and rolling plains in the south.

NATIONAL CAPITAL REGION

ADMINISTRATIVE DIVISIONS



	NCR BOUNDARY
	STATE BOUNDARY
	DELHI URBAN BOUNDARY
	DISTRICT BOUNDARY
	TEHSIL BOUNDARY



On the basis of physiography, NCR can be divided into (a) Ganga-Yamuna doab, (b) Mid upland plain and (c) Hilly and sand dune regions in the south-west and western side.

(a) Ganga Yamuna Doab: It lies east of Yamuna river and comprises whole part of Uttar Pradesh sub-region. The region is almost a level alluvial plain with a slight slope from north to south and south east. The entire part of the region is well cultivated and there is no uneven ground except in the area of ravines near the river valleys and the scattered ridges in the upland tract.

(b) Mid-Upland Plain: This region is delimited by the Yamuna on the east and Aravalli hills on the west and south. It includes almost all the parts of Gurgaon and Rohtak districts, Sonapat district, Panipat tehsil of Karnal district, and Delhi Union Territory. On a closer examination, however, one finds the narrow belt along the Yamuna is quite distinct from the remaining part, which is above the flood level of the river. The former is known as 'Khadar', the lowlying flood plain of newer alluvium and the latter is 'bangar' made of older alluvium. Isolated outcrops are also visible in this region. It is an area of confluence of Aravalli hills, Indo-Gangetic plain and Indian desert.

(c) Hilly and Sand-dune Region: It lies South and south-western side of upland plain. The hills in this region are northern extension of the Aravallis, which is the oldest mountain system of the Indian sub-continent. This region has undergone number of repeated peneplanation and rejuvenation in the past. The part lying to the east of these hills is more precipitous; enclosed between them are fertile valleys and upland tables which are covered with forests.

The part lies to the west of Aravalli hills is almost plain and more or less sandy with isolated small hills and scene of shifting sand dunes. Many of them lie in the direction of westerly and south westerly winds which are fairly strong during the summer.

Objectives of the Study

Phenomenal growth of population in a region is determined by large scale immigration which responds much faster to economic changes than do aggregate population change. Immigration may control the nature and pace of economic growth and urbanisation and can cause major changes in the distribution of jobs, settlements, income and welfare of people. The aims of the present study are:

(i) To analyse the volume, pattern and characteristics of migration in NCR.

(ii) Its correlation with other socio-economic development variables

(iii) The critical assessment of prevailing NCR development programmes to divert Delhi bound migrants to ring towns around the metropolitan city.

Hypotheses

Following hypotheses are generated for analysing the nature and characteristics of migration to Delhi and NCR as a whole. They are:

(i) Sex ratio among the urbanward migrants is favourable to male population.

(ii) Less developed states are sending more number of migrants to Delhi.

(iii) Female migration is mainly consequent to marriage or movement of family as a whole.

(iv) Current employment-migrants have high literacy rate than old migrants.

(v) Highly educated people are more among the current employment migrants.

(vi) Work participation rate is high among the 'urban to urban' employment - migrants.

(vii) District which has high work participation rate in urban other service sector, receives larger number of migrants.

Data Base

Migration and General Economic Tables of 1961, 1971 and 1981 census of India are the main sources of data in this study. Census organisation of India has been collecting data on migration since first synchronous census, i.e., 1882. Up to 1961 census data on migration were obtained through particulars of birth place. If a person was born at a place other than the place of enumeration, he was treated as a migrant in census returns. The data presented in these censuses relate to the number of migrants by sex. In 1961 census, an effort was made to elaborate the scope of enquiry and information by recording rural-urban classification of birth place and place of enumeration and duration of residence at the place of enumeration. The drawback of these statistics is that a person who had migrated elsewhere, for all practical purposes and happened to be at the place of birth during the period of enumeration, was treated as a non-migrant at the census.

In 1971 census migration data are collected for the first time on the basis of place of last residence, to avoid the limitation of previous censuses, in addition to the question on birth place. 1981 census has included another question on reason for migration to highlight their motivation to live the native place. However, one cannot

compare entire migration tables of 1961, 1971 and 1981 censuses except D₁ table³⁴ of these censuses. Because, further cross classifications are made on the basis of birth place in 1961 census, on the basis of place of last residence in 1971 census and on the basis of place of last residence with 'employment' as reason for migration in 1981 census. However, D-2 table³⁵ of 1971 and 1981 are comparable with each other.

Though the tehsil level migration data are not available in our census, Panipat tehsil of Karnal district, Bawal and Rewari tehsils of Mahendragarh district and six tehsils of Alwar district are included in the present study by assuming the population mobility pattern of these tehsils are same as to the population mobility pattern of the respective district. The total number of migrants and data related to their characteristics are calculated with the help of following formula:

$$\frac{\text{Migrant population of the district male/female/rural/urban}}{\text{Population of the district male/female/rural/urban}} \times \text{Population of the tehsil/tehsils/male/female/rural/urban}$$

-
34. D-1 Table is related to population classified by place of birth.
35. D-2 Table is related to population classified by place of residence and duration of residence in the place of enumeration.

Methodology

In order to examine the volume and spatial flow of migration, the changing share of migrants to total population and various streams and components of migration to total migrants of each district have been analysed since 1961 census. Differences in the migration characteristics are brought out by its comparison with streams of migration, total and non-migrant population. Socio-economic factors associated with population mobility are studied through the analyses of correlation coefficients and stepwise multiple regression which was computed with the help of electronic computer. For this, migration variables are considered as dependent and other indicators relate to the urban development are as independent variables.

TH-2558

Scheme of Chapterisation

Population mobility, either voluntary or forceful, is the prime factor of population redistribution over a region. Most of these movements are for better livelihood - especially from rural areas to urban. The introduction chapter of the present study tells what is migration, its theoretical outlook, an appraisal of various studies conducted in India about urbanward migration followed by the nature of the study area (NCR) hypotheses, data base, methodology and limitation of the study.

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Chapter one - Spatial Distribution of Population and Migrants - brings out the rural-urban composition of population, sex ratio, density of population and the scenario of population mobility during 1961, 1971, and 1981 census at sub-regional level.

Decadal growth rate of migration and duration of migration are studied separately in the chapter two, i.e. temporal changes in the rate of migration, at sub-regional level. Delhi being the 'core-region' of the entire planning unit, the characteristics of Delhi bound migration like, spatial inflow, reason for migration, literacy rate, work participation and marital status of migrant population are carried out in detailed manner in the chapter three.

Correlates of urbanward male and female migration with other socio-economic variables of urban development are carried out through the analyses of coefficients of correlation and the compound influence of these variables on urbanward male migration is studied with the help of step-wise multiple regression analysis in the chapter four.

Conclusion chapter illustrates the syntheses of present study and the drawbacks on NCR development planning programmes to divert Delhi bound migration into surrounding mini Delhis. It also describes about some new strategies, which emerged from the present study, to achieve the goals of NCR regional plan for 2001.

Limitation of the Study

NCR being a planning unit, its limitation on the migration study is not much different from the genuine problems of administrative versus planning regions. They are:

(i) Census informations are totally bound with administrative units. Planning unit may cover more than one district or state.

(ii) Population mobility data within the planning unit is exclusively controlled by different hierarchies of administrative divisions. For example, those who moved from Delhi to Gurgaon are the inter-state or long distance migrants while those who come to Gurgaon from other districts of Haryana are the inter-district or medium distance migrants. Due to this NCR migration data gives spatial distortions.

(iii) Data on the movements of people between two districts of NCR are not available in our censuses; i.e. either they have been clubbed with total inter-district migrants or with inter state migrants of concerned district.

(iv) Relative changes on migration volume, over a period of time, cannot be estimated due to the bifurcation of states and changes in district boundaries during this period.³⁶

36. During 1961 census, Haryana was a part of Punjab state. After 1971 census boundary adjustments had witnessed in both Haryana and Uttar Pradesh sub-region of NCR (for more details see Census establishment reports of Haryana and Uttar Pradesh, 1981).

However, this problem has been over come by estimating current, intracensal and intercensal migration with the help of D-2 table of 1981 census.

It is noteworthy here that spatial variation for 1961, 1971 and 1981 data have been considered separately as given in respective census volumes.

Chapter - I

SPATIAL DISTRIBUTION OF POPULATION AND MIGRANTS

Population Distribution

National Capital Region had 191.92 lakhs of population during the year 1981. To the previous decades - 1961 and 1971 - they had accounted for 106.88 and 141.88 lakhs of population respectively. During these years, on the sub-regional scale, Uttar Pradesh has the highest per cent of population followed by Delhi, Haryana and Rajasthan. The share of Uttar Pradesh region in the total population has been declining census to census; i.e. from 41.63 per cent (1961) to 38.34 per cent (1971) and 36.31 per cent (1981). The same trend is also prevailing in Haryana and Rajasthan sub-regions. On the other hand, population of Delhi successively shows an increase unrestrainedly every decade and consequently has become a 'core region' of the entire planning unit. Its share to the total population has increased from 24.89 per cent (1961) to 28.66 per cent (1971) and 32.41 per cent (1981) (Table 1.1). The population projection for NCR sub-units indicates that Delhi will entail 36.41 per cent and 40.78 per cent of NCRs inhabitants during the year 1991 and 2001 respectively.¹

1. National Capital Region Planning Board, Interim Development Plan 2001, NCR, Ministry of Urban Development, Government of India, 1986.

Rural Urban Distribution

There are 6677 villages in NCR (1981) which cover 95.10 per cent of the total area. These villages are predominantly medium sized with 55 per cent of them having a population ranging from 500 to 1999. The vast tracts of rural area accommodate 71.10 (1961), 86.72 (1971) and 101.10 (1981) lakhs people. This forms 65.59 per cent, 61.13 per cent and 52.68 per cent of the respective year's total population. Delhi has the least proportion of rural inhabitants, i.e., 4.26 per cent in 1961, 4.83 per cent in 1971 and 4.47 per cent in 1981. Haryana and Uttar Pradesh sub-regions together hold more than 85 per cent of NCR rural population.

Urban population is steadily increasing over the years in NCR. About 91 lakhs or 47.32 per cent of the total population resides in urban areas in 1981 as against 38.87 per cent in 1971 and 34.41 per cent in 1961. The decadal growth of urban dwellers is 49.96 per cent (1961-71) and 64.68 per cent (1971-81). During this period, all India growth rate was 38.23 per cent and 46.39 per cent respectively. It shows that NCR is more rapidly urbanising, than the rest of the country. The region-wise, urban composition is higher in Delhi (63.51 per cent) followed by Uttar Pradesh (21.46 per cent), Haryana (13.12 per cent) and Rajasthan (1.91 per

cent). It is, however, significant to note that Haryana and Uttar Pradesh subregions have registered a higher urban growth rate than Delhi during 1961-71 and 1971-81 decades.

Sex Ratio

The sex ratio² of NCR is 840 females per 1000 males (1981). This is lower than the national average.³ The least proportion of females to male population (808) is observed in Union Territory of Delhi. The concentration of job opportunities in the metropolitan city and the subsequent inflow of more males are tilting the sex ratio favourable to the male population of Delhi. Rural sex ratio has declined from 874 in 1961 to 862 in 1971. However, it has remained unchanged in 1981. Meanwhile, during 1971-81, the urban sex ratio has improved with regards to females (Table 1.2).

Population Density

The population density of NCR in 1981 was 635 persons per square kilometer as against 469 in 1971 and 353 in 1961. The all India figure during the same period was 220, 176 and 141 persons respectively. Of the sub-region of NCR, Delhi

2. Sex ratio = $\frac{\text{Number of Females}}{\text{Number of males}} \times 1000$

3. In 1981 the sex ratio of India was 934 females per 1000 males.

is the most congested with 4192 persons per square kilometer followed by Uttar Pradesh (642), Haryana (368) and Rajasthan (237). The density of Rajasthan and Haryana sub-units are significantly lower than NCR average (Table 1.3).

Urban Settlement Pattern

There are 94 urban centres in NCR (1981) (Map 1.1). Out of them, eleven centres are 'class one'⁴ cities, namely, Delhi Urban Agglomeration,⁵ Bulandshahr, Ghaziabad Urban Agglomeration, Hapur, Meerut Urban Agglomeration, Faridabad Complex Administration, Gurgaon, Panipat, Rohtak, Sonapat and Alwar. There has been a spectacular increase in the number of urban centres in NCR, from 48 to 94, during the period of 1971-81. While in 1961-71, there had been an addition of 4 towns even though declassification or urban

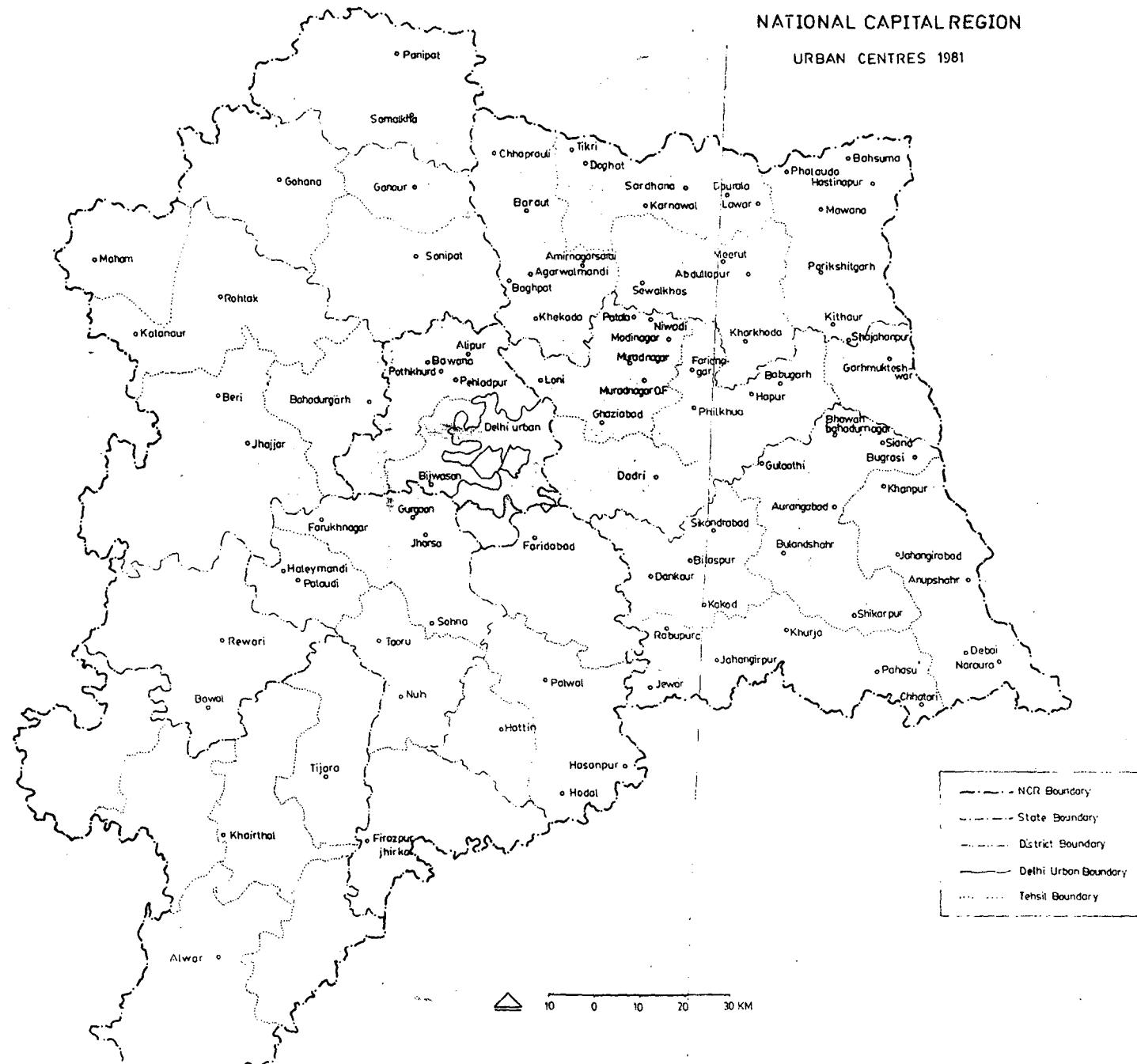
-
4. Indian census classifies urban centres into six different class categories by population size. They are as follows:

<u>Class Category</u>	<u>Population Size</u>
I	100,000
II	50,000-99,999
III	20,000-49,999
IV	10,000-19,999
V	5,000-9,999
VI	Less than 5,000.

5. The census of 1971 introduced the concept of urban agglomeration. According to the census, part II-A(i), Urban Agglomeration would be constituted in the following situations: (i) a city with a continuous outgrowth (the part of outgrowth being outside statutory limits but falling within the boundaries of the adjoining village or villages). (ii) one town with a similar out-growth or two or more adjoining towns with their out-growths as in (i); and (iii) a city and one or more adjoining towns with their out-growths all of which form a continuous spread.

NATIONAL CAPITAL REGION

URBAN CENTRES 1981



centres had taken place during that time. Class-wise distributions of NCR urban centres are given in Table 1.4. Growth of class one cities in this region need to be analysed separately, since their growth is mainly due to the consequence of population migration rather than natural increase. However, the non-availability of migration data in 1981 census at class one city level, except metropolitan cities, limit our analysis further at the city level.⁶ The Delhi Agglomeration is the only metropolitan city of this region, which accommodates more than two third of NCR urban population. The characteristics of population mobility towards urban units of Delhi are highlighted separately in chapter three.

Population Mobility

Human migration reveals the direction, history and spatial variation of economic growth and development. Nevertheless, in a country like India it is improper to measure economic development and growth on the basis of population mobility. This is because, in our country most of the migration is mainly determined by social factors rather than economic. According to Indian customs and traditions marriage is exogamous and after the marriage bride has to live with either her parents-in-law or with her husband. For these reasons female migration is higher in India, which thus

6. The census of 1981 generated city level migration data only for metropolises, i.e., 1000000+ cities, of India.

accounts for more than 69 per cent of the total migration. Male migration, on the other hand, can be attributed to a direct response to economic factors.

According to 1961, 1971 and 1981 censuses, 42.98, 49.44 and 67.10 lakhs of people are migrants⁷ to NCR. Among them more than 60 per cent are females. Urbanward movement of either sex is increasing over the last two decades in NCR. The following part of this chapter describes the scenario of population mobility during the last three census periods.

1961 Scenario

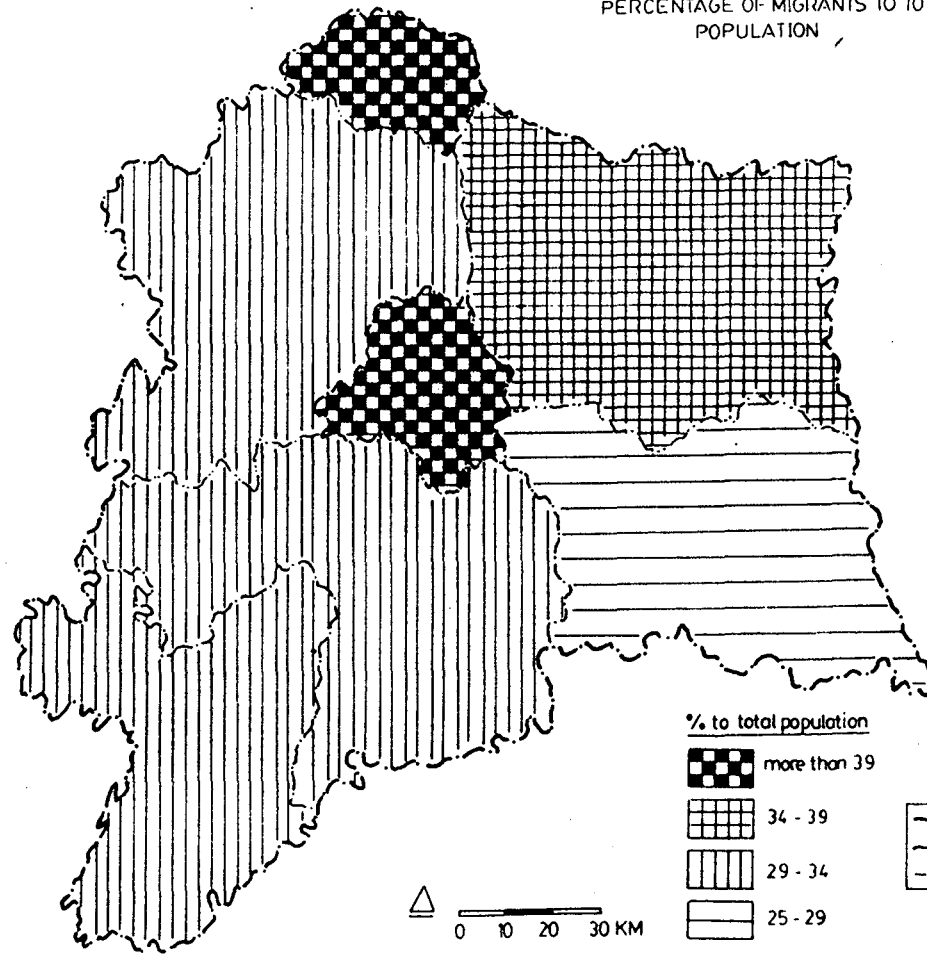
The migration in NCR during the sixties seemed to be higher than the national average. On the whole, about 33 per cent of the Indian population and 40.22 per cent of the NCR population were registered as migrants in 1961. The proportion of migrants to the total population was higher in Union Territory of Delhi (61.61 per cent) while the remaining sub-units had lower rate of migration than regional average (Table 1.5).

(1) Rural-Urban Composition

Eventhough migration in NCR shows a fair composition of rural-urban component, when it^{is} taken at sub-regional level,

7. On the basis of birth-place data.

NCR 1961
PERCENTAGE OF MIGRANTS TO TOTAL
POPULATION



MAP 1.2

rural migration is higher than urbanward migration except in Union Territory of Delhi. In the Union Territory of Delhi, Urban-ward migration accounts for 90 per cent of the total population. Uttar Pradesh and Haryana sub-regions together contain 87.30 per cent of NCR rural migration.

Urbanward migration is high in Delhi. It accounts for 71.70 per cent of NCR urban-ward migration. Proportion of urban migrants to the total migrants of NCR is lesser in Uttar Pradesh (15.66 per cent), Haryana (11.77 per cent) and Rajasthan (0.87 per cent) sub-units (Table 1.6).

Map 1.2 gives an idea about the spatial distribution of migrants at district level. Delhi and Panipat tehsil⁸ have a high per cent of migrants (above 39 per cent) to the total population; medium concentration of migrants are found in Meerut district while low rates are registered in Rohtak, Gurgaon and Alwar districts. In Bulandshahr district, out of the total population, only a minor portion is that of inmigrants.

(ii) Sex Ratio of Migrants

Sex ratio among the migrants in NCR is not in an ideal proportion. Females seem to out-number the males by about 1554 per 1000. The highest range of sex ratio has been

8. Estimated from Karnal district migration figure.

observed among Rajasthan migrants (3519) followed by Haryana (2714) and Uttar Pradesh (2196). Sex ratio of rural migrants is 3205 females per 1000 males. While for urban migrants it is 829 (Table 1.7).

(iii) Distance Migration

On the basis of distance, as mentioned earlier, internal migration can be divided into short, medium and long distance movements. Short or intra-district migration is high in Uttar Pradesh (63.73 per cent) and low in Union Territory of Delhi (8.51 per cent). In Delhi, inter-state migration accounted for 59.32 per cent of the total population. Apart from other sub-divisions of NCR, Delhi does not have inter-district migration, because it has been constituted as a single district. Females tend to participate more in medium and short distance migration.

International migration in another important aspects of population movement. In India, international migration is not as much important as other countries, like Canada, New Zealand, South Africa etc. International migrants in NCR are about 20.37 per cent of the total migrants. This is higher than the national average (7.06 per cent). In NCR, these migrants are heavily concentrated in Panipat tehsil and Union Territory of Delhi.

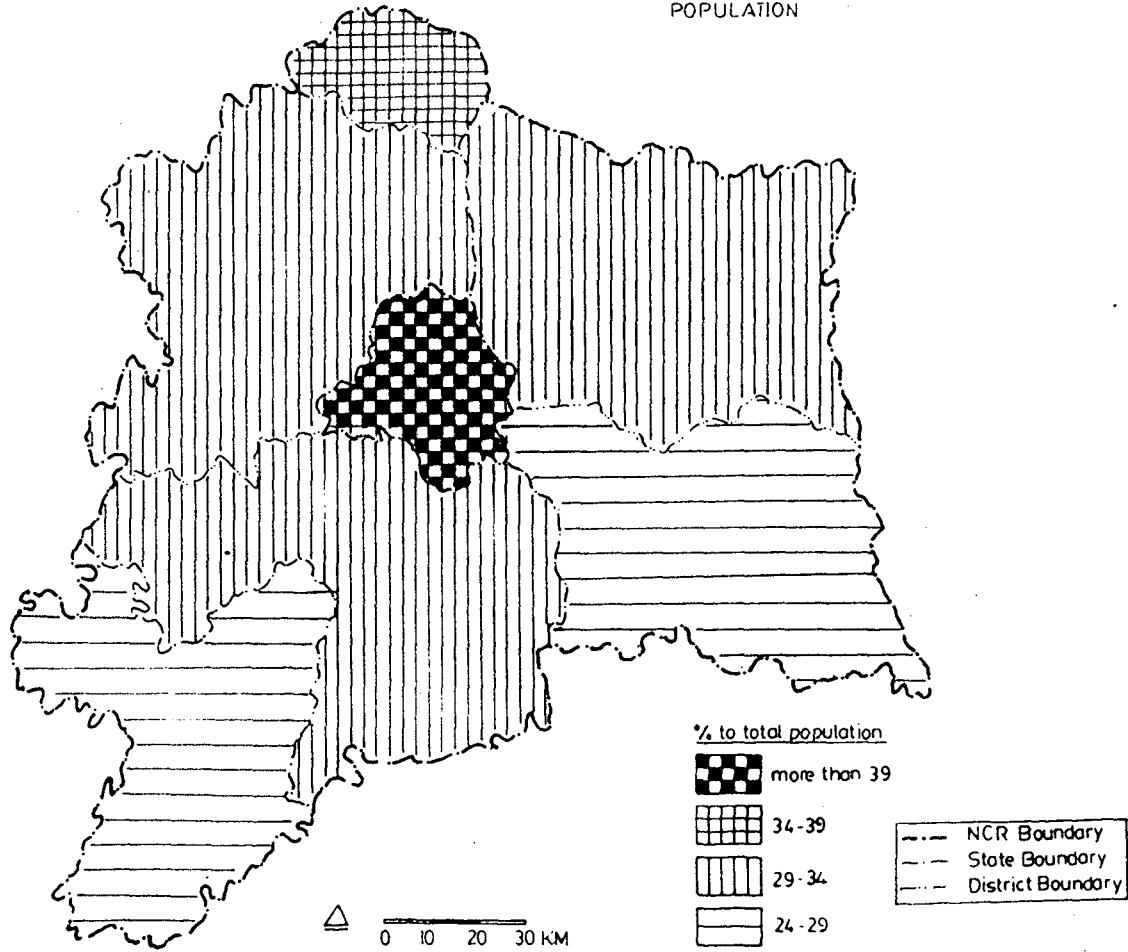
(iv) Streams of Migration

Rural-urban migration stream accounts above 60 per cent of total migration in all districts of NCR except Delhi. It is dominated by females and they account for more than 80 per cent of intra district movement of Uttar Pradesh and Rajasthan sub-regions. In Bulandshahr district, 91 per cent of rural to rural migrants are females and they form 44.20 per cent of total district migration. Urban to rural movement seems less than 2 per cent all over the region, particularly in short and medium distance migration. Urban to urban and rural to urban are well represented only in Union Territory of Delhi, especially in the case of inter state migration (Annexure 1).

1971 Scenario

In terms of absolute numbers, there is an increase of 6.45 lakhs persons on the total migration of NCR during 1961 to 1971. However, their relative share in the total population is less than what it had been in 1961. During 1971, NCR has had 34.85 per cent of total population as migrants. Excepting the Union Territory of Delhi in other sub-regions, the percentage of migrants to the total population is less than the NCR average. From the map 1.3 one can identify the changing trends of NCR migration pattern.

N C R 1971
PERCENTAGE OF MIGRANTS TO TOTAL
POPULATION



MAP 1.3

(i) Rural-Urban Composition

The analysis of regionwise distribution of migrants highlights that Union Territory of Delhi becomes a powerful focus which attracts 41 per cent of NCR migrants. During this period, more than 46 per cent of rural migrants had found their residence in U.P. villages. Their share on total population has gone up in Delhi (2.09 per cent), Haryana (5.00 per cent) and Rajasthan (1.18 per cent). Meanwhile, urban migration has declined in Delhi (1.16 per cent) whereas other sub-regions have had slight positive attainments.

(ii) Sex Ratio

The sex ratio is almost the same as in previous years except a mild variation on urbanward migration specially with regard to female migrants.

(iii) Distance Migration

The percentage of intra-district migration in Haryana (46.54 per cent), Uttar Pradesh (69.85 per cent) and Rajasthan (58.36 per cent) has increased in 1971. Meanwhile, it has increased in NCR and Delhi around 9.34 per cent and 5.23 per cent respectively. Short and medium distance migration together accounts for more than 90 per cent of U.P. region's total migration. Inter state migration is very high in Delhi (71.68 per cent). International migrants consist 14.67 per cent of NCR migrants. However, they are accounted around one fourth of the total migrants of Delhi.

(iv) Streams of Migration

Rural to urban and urban to urban streams of migration have increased all over the region. It is mainly because of the increase of their share in inter district and inter state migration. Female rural to rural migration has increased in Gurgaon, Panipat tehsil, Meerut and Alwar district, especially in the case of inter-state migration.

1981 Scenario

The 1981 census has brought-out the positive indications of migration growth all over India, even though they are on a minor scale. It is also visible on NCR data. About 35 per cent of NCR population has been enumerated as migrants during 1981 census. It is higher than the national average (30.70 per cent). The proportion of migrants to the total population has declined in Delhi (2.12 per cent) Uttar Pradesh (0.35 per cent) and Rajasthan (0.83 per cent) sub-regions while it has increased in Haryana region (0.73 per cent). The consequences of industrial development in Haryana, particularly in Faridabad and Gurgaon districts, was the main impetus for this migration trend. The study of spatial distribution of migration on the basis of regional total (table 1.6) brings out that Delhi's share has further increased 3.25 per cent in 1981. However, its urban share has declined 2.6 per cent. Meanwhile, in Haryana and Uttar

Pradesh regions urbanward migration has showed a positive growth of 1.91 per cent and 0.75 per cent respectively.

Faridabad, the newly formed district of Haryana constituency, has gained the second position, next to Delhi, by attracting 3.8 lakhs people from different parts of the country. They account for 38 per cent of the total population (Map 1.4).

(i) Rural Urban Composition

Proportion of rural migration to total migration has decreased about 8 per cent during the period 1971-81. Regional distribution of rural and urban migration is almost same as previous decade. However, in Haryana and Uttar Pradesh regions, urban migration has increased 1.91 per cent and 0.75 per cent respectively (Table 1.6).

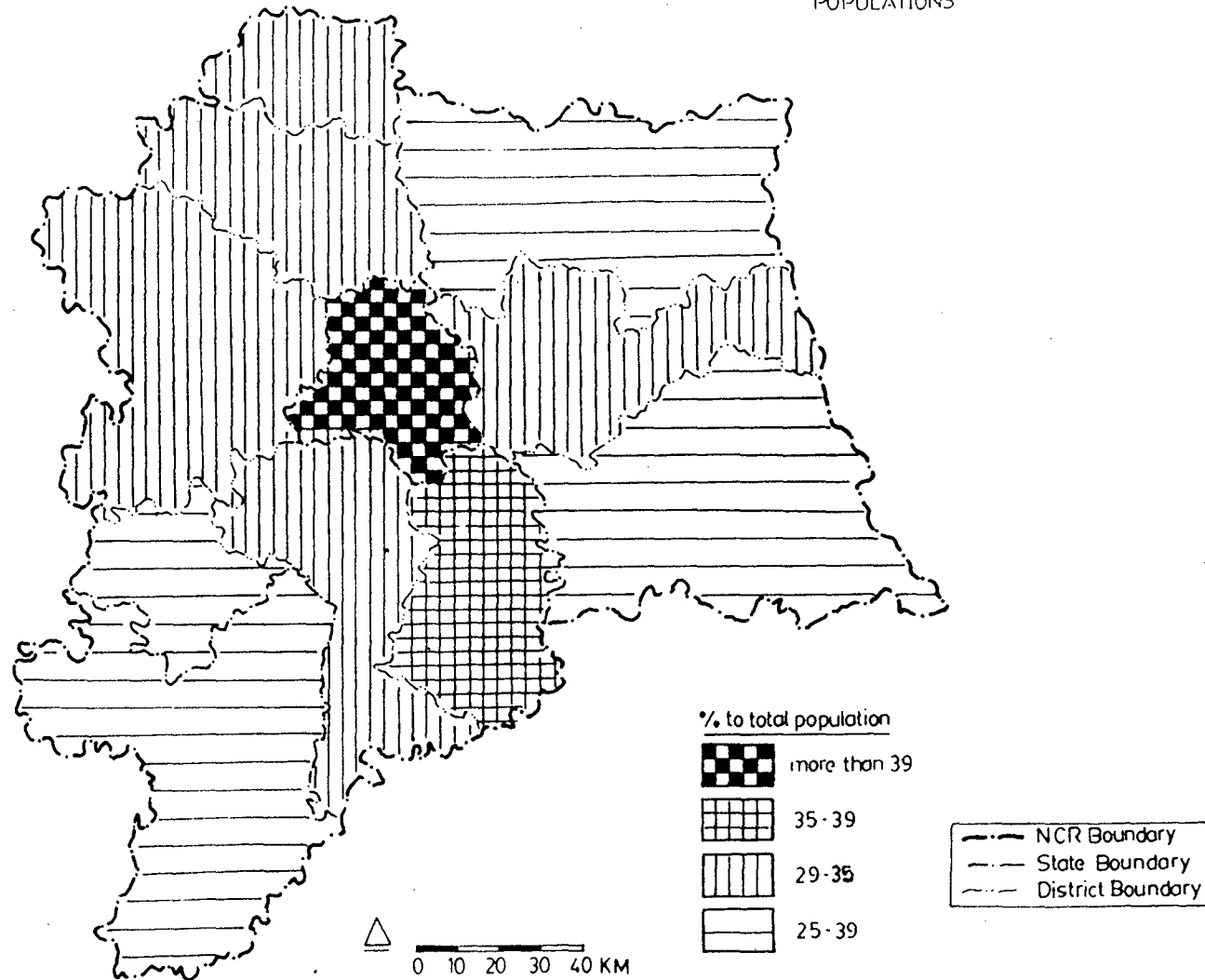
(ii) Sex Ratio

Sex ratio of the migrants in NCR is 1667 females per 1000 males. Even though there is a reduction of 55 females in the total sex ratio during 1971-81 their number has gone up by 1200 per males in rural areas (Table 1.7).

(iii) Distance Migration

Intra district and inter district migration account about 75 per cent of the district total, except in Delhi and Faridabad, and among them more than 82 per cent are females.

NCR 1981
PERCENTAGE OF MIGRANTS TO TOTAL
POPULATIONS



MAP 1.4

In the case of Delhi and Faridabad, 79.17 per cent and 53.32 per cent of the total migrants respectively are long distance migrants. During this period, inter-state rural to rural and rural to urban migration streams of either sex have increased.

Conclusion

Population growth rate of NCR is 36.48 per cent during 1971-81 against 32.89 per cent in 1961-71; while the national average has been reported to be 21.89 per cent (1971-81) and 24.83 per cent (1961-71). The higher growth rate of NCR population is due to the net addition of migrants. The population density is very high in Delhi (4194 person per square kilometer) followed by Uttar Pradesh (648 person), Haryana (368 person) and Rajasthan (237 person) sub-regions. Sex ratio of the NCR population is around 840 females per 1000 males.

Among other sub-regions, the percentage of migrants to the total population is high in Union Territory of Delhi (47.75 per cent in 1981). The number of intra and inter district migrants are less in Delhi than other states within NCR. The long distance movers are 59.32 per cent, 71.68 per cent and 79.17 per cent of the total migrants of Delhi in 1961, 1971 and 1981 respectively. The amount of inter state

migrants observed in a population is dependent upon the size of the state and the length of the state boundary. It is based on these that the interstate population movement is defined.

Rural to rural migration is important among other streams of migration. It is characterised by females. Although urbanward mobility is increasing in Haryana and Uttar Pradesh sub-regions, Delhi still holds more than two third of the total urban migrants. The sex ratio among the rural migrants is favourable to female population. They outnumber the males by 2205, 4018 and 5077 per 1000 during 1961, 1971 and 1981 respectively.

International movers account for 9.70 per cent of the total migrants in NCR. Among other sub-regions, their share is very high in Delhi (15.79 per cent). About 95 per cent of the total international migrants are living on the western part of NCR. Their share on the total migrants is declining all over the region, i.e. from 20.37 per cent in 1961 to 14.67 per cent in 1971 and 9.70 per cent in 1981.

Table 1.1
RURAL URBAN COMPOSITION OF POPULATION
1961-81

Sub Region	Rural/ Urban	1961	1971	1981
Delhi	T	26.74	28.65	32.41
	R	4.26	4.83	4.47
	U	64.15	66.12	63.15
Haryana	T	27.53	27.17	25.73
	R	35.33	36.80	30.07
	U	12.70	12.04	13.12
Uttar Pradesh	T	41.64	38.34	36.31
	R	52.38	50.12	49.65
	U	21.17	19.82	21.46
Rajasthan	T	5.49	5.82	5.55
	R	8.03	8.25	8.81
	U	1.93	2.02	1.91
NCR	T	100.0	100.0	100.0
	R	100.0	100.0	100.0
	U	100.0	100.0	100.0

Source: Compiled from Census of India, 1961, 1971 and 1981.

Note: Figures are percentage to NCR population.

Table 1.2

SEX RATIO - 1961-81

Sub Region	Rural/ Urban	1961	1971	1981
Delhi	T	785	801	808
	R	847	824	810
	U	777	798	808
Haryana	T	884	869	864
	R	866	886	883
	U	872	794	808
Uttar Pradesh	T	857	840	844
	R	865	842	843
	U	822	829	848
Rajasthan	T	894	891	895
	R	899	900	908
	U	859	831	832
NCR	T	847	839	840
	R	874	862	862
	U	800	804	817

Source: Compiled from Census of India, 1961, 1971 and 1981.

Note: Sex ratio = $\frac{\text{Female population}}{\text{Male population}} \times 1000$

Table 1.3

POPULATION DENSITY 1961-81

Sub Region	1961	1971	1981
Delhi	1793	2741	4194
Haryana	219	287	368
Uttar Pradesh	410	501	642
Rajasthan	141	183	237
NCR	353	469	635
India	141	176	220

Source: Compiled from Census of India 1961, 1971 and 1981.

Table 1.4

DISTRIBUTION OF URBAN SETTLEMENT IN NCR 1961-1981

Size Class	1961	1971	1981
I	2	4	11
II	3	6	3
III	10	9	16
IV	12	13	28
V	13	14	33
VI	4	2	3
All Classes	44	48	94

Source: Compiled from Census of India, 1961, 1971 and 1981.

Table 1.5

PERCENTAGE OF MIGRANTS TO THE TOTAL POPULATION
1961-1981

Sub-Region	1961			1971			1981		
	Person	Male	Female	Person	Male	Female	Person	Male	Female
Delhi	61.61	34.22	27.39	49.87	27.61	22.26	47.75	26.16	21.59
Haryana	32.31	8.70	23.61	30.80	8.17	22.63	31.53	8.77	22.76
Uttar Pradesh	34.15	10.68	23.47	27.44	6.08	21.36	27.09	5.78	21.31
Rajasthan	29.80	6.59	23.21	28.54	5.80	22.74	27.71	4.99	22.72
NCR	40.22	15.75	24.47	34.85	12.80	22.05	34.96	13.11	21.85

Source: Compiled from Census of India 1961, 1971 and 1981.

Note: Figures are percentage to the sub-regional total population
in respective years.

Table 1.6

SPATIAL DISTRIBUTION OF MIGRANT POPULATION
1961-1981

Sub-Region	1961			1971			1981		
	Total	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban
Delhi	38.11	4.78	71.70	41.01	6.87	70.54	44.26	6.34	67.94
Haryana	22.12	32.39	11.77	24.02	37.39	12.46	23.20	37.36	14.37
Uttar Pradesh	35.36	54.91	15.66	30.20	46.64	15.98	28.14	46.40	16.73
Rajasthan	4.41	7.92	0.87	4.77	9.10	1.02	4.40	9.00	0.96
NCR	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Source : Census of India 1961, 1971 and 1981.

Note : Figures are percentage to NCR migrants.

Table 1.7

SEX RATIO OF THE MIGRANTS - 1961-81
(MALE-FEMALE)

Sub-Region	1961			1971			1981		
	Total	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban
Delhi	800	2139	750	806	1862	754	826	1814	789
Haryana	2714	4226	1064	2768	4569	1049	2594	5734	1047
Uttar Pradesh	2196	2795	1053	3511	6898	1165	3686	8951	1445
Rajasthan	3519	4014	1376	3916	4851	1199	4551	6077	1319
NCR	1554	3205	829	1722	5018	847	1667	6214	913

Source : Compiled from Census of India 1961, 1971 and 1981.

Table 1.8
MIGRATION BY DISTANCE, 1961-81

Sub-Region	1961					1971				
	1 Intra- district	2 Inter- district	3 Inter- state	4 2+3	5 Inter- national	1 Intra- district	2 Inter- district	3 Inter- state	4 2+3	5 Inter- national
Delhi	8.51	-	59.32	59.32	32.17	3.28	▼	71.68	71.68	25.04
Haryana	44.70	15.79	18.51	34.30	21.00	46.54	15.40	26.65	42.05	11.41
Uttar Pradesh	63.73	26.26	6.82	33.08	3.19	69.85	21.75	6.17	27.92	2.23
Rajasthan	53.21	17.53	15.30	32.83	13.96	58.36	16.63	16.77	33.40	8.24
NCR	41.49	14.79	23.35	38.14	20.37	32.15	13.92	39.25	53.17	14.67

Source : Compiled from Census of India, 1961, 1971 and 1981.

Note : Figures are percentage to concern sub-region.

Contd. from Pre-Page (Table 1.8)

Sub-Region	1981				
	<u>1</u> Intra- district	<u>2</u> Inter- district	<u>3</u> Inter- state	<u>4</u> 2+3	<u>5</u> Inter- national
Delhi	5.04	-	79.17	79.17	15.79
Haryana	33.04	27.99	30.73	58.72	8.24
Uttar Pradesh	44.62	44.37	8.94	53.31	2.07
Rajasthan	56.62	19.26	19.20	38.46	4.92
NCR	24.91	19.81	45.58	65.39	9.70

Chapter - II

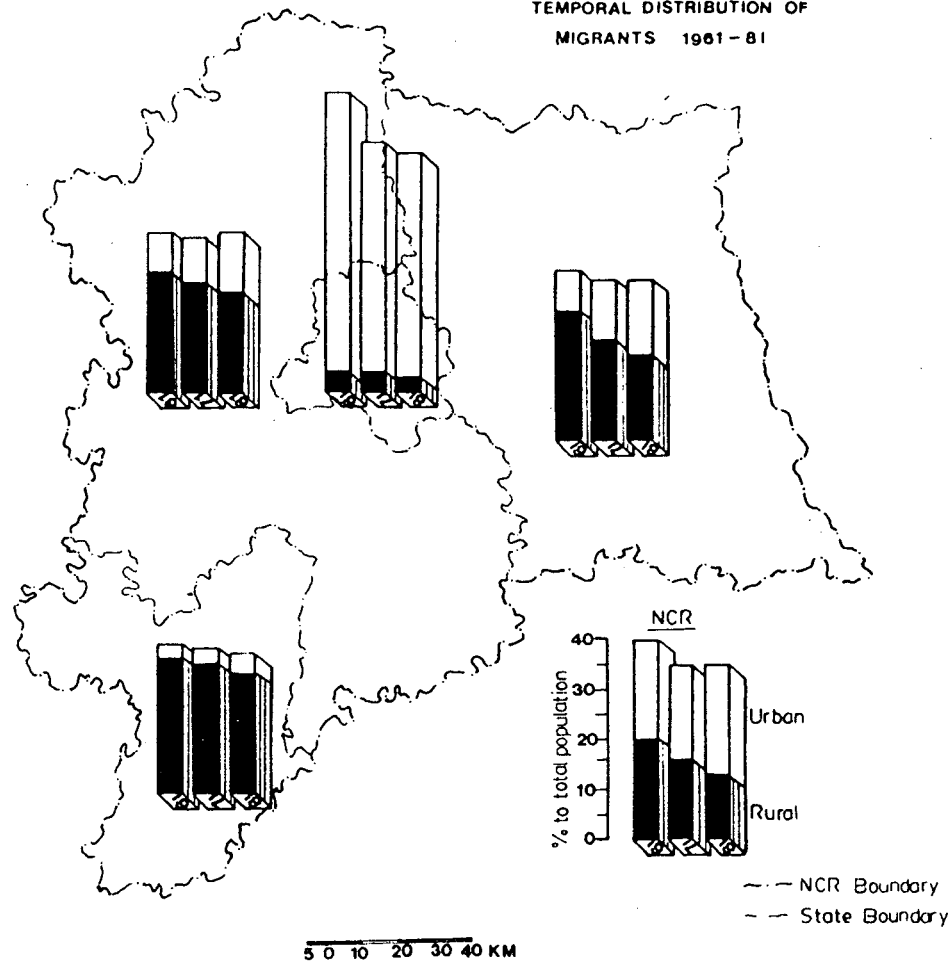
TEMPORAL CHANGES IN THE RATE OF MIGRATION

Before going to ascertain the determinants and consequences of migration in the 'core region' of NCR it would be better to acquaint the historical aspects of migration pattern in NCR with duration of migration. The data which have been examined for empirically assessing these trends are, population classified by place of birth of 1961, 1971 and 1981 censuses (Table D-1) and migrants classified by place of last residence and duration of residence in the place of enumeration (Table D-2) of 1981 census.

In NCR, the per cent of migrants to the total population has declined from 40.22 per cent in 1961 to 34.96 per cent in 1981. However, the 1981 ratio is slightly higher than what it was in 1971 (34.85 per cent). Similar change is also observed in Haryana sub-unit. Meanwhile, the remaining constituents have had a continuous drop in their mobility ratio (Table 2.1). The proportion of rural migration is deteriorating all over the region during the period of 1961 to 1981. The urban-ward migration has gone up 2.88 per cent in 1971-81 after a decrease of 1.38 per cent during 1961-71. However, the sub-regional level analysis of urban migration shows that the percentage is continuously decreasing only in the Union Territory of Delhi (Table 2.1 and Map 2.1).

NCR

TEMPORAL DISTRIBUTION OF
MIGRANTS 1961-81



MAP 2.1

It is true to say that the percentage of migrants to the total population is always higher during the initial phases of development than what would be in subsequent periods. It is because of the natural growth of population and due to the limitation of percentages and ratios in the field of temporal analysis. Also, the children who are born at the place of enumeration after their parents migration are treated as non-migrants in our censuses. To overcome this problem, we have calculated regionwise decadal growth of migration by using the formula

$$\frac{Pt_1 - Pt}{Pt} \times 100$$

where Pt and Pt_1 are the migrant population of t and t_1 period.

Decadal Growth of Migration During 1961-71

In NCR, migration growth rate during the period of 1961-71 was 15.01 per cent. The highest per cent of growth is observed in Haryana sub-unit (24.89 per cent) followed by Rajasthan (24.48 per cent), Delhi (23.78 per cent) and Uttar Pradesh (-1.78 per cent). Perhaps, the under enumeration of rural population during the 1971 census has tilted the migration growth rate negatively in U.P. region.

(i) Rural Migration Growth Rate

Rural migration has attained 52.52 per cent growth in the sub-unit of Delhi while it is 6.27 per cent for NCR as a whole. The massive investments on the industrial and commercial sectors of Delhi during the 1960s attracted large number of workers from neighbouring states. It created severe housing problems elsewhere in the city and compelled the people to find out their shelters in surrounding villages. By these migrants, ruralward migration increased manifold in Delhi during the period of 1961-71. Meanwhile, it has increased 22.65 per cent in Haryana and 22.99 per cent in Rajasthan sub units. However, in the case of U.P. sub-region, it has decreased 9.73 per cent (Table 2.2).

(ii) Urban Migration Growth Rate

Urban migration has attained the growth rate of 23.83 per cent in NCR during the period of 1961-71. It is lesser than the growth rate of Rajasthan (44.60 per cent), Haryana (31.10 per cent) and Uttar Pradesh (26.32 per cent) sub-regions. However, in Delhi, urbanward migration growth rate is 1.99 per cent less than the regional average (Table 2.2).

Decadal Growth Rate of Migration During 1971-81

During the period of 1971-81, migration growth rate has gone-up 23.73 per cent more than the previous decade in NCR. The sub-regional level, the least per cent of growth

is observed in Rajasthan (25.07 per cent) decended by Uttar Pradesh (26.47 per cent), Haryana (31.11 per cent) and Union Territory of Delhi (46.56 per cent).

(i) Rural Migration Growth Rate

Rural migration has shrunk to 48.63 per cent in Union Territory of Delhi while it has gone up 6.22 per cent all over the region. The highest percentage of growth is noticed in Rajasthan (22.32 per cent) followed by Haryana (12.37 per cent), Uttar Pradesh (11.94 per cent) and Union Territory of Delhi (3.89 per cent).

(ii) Urban Migration Growth Rate

Urbanward migration has positively grown in all units of NCR. The sub-regional level, the maximum growth rate is observed in Haryana (79.49 per cent), which had the second position in 1961-71 decade, followed by Uttar Pradesh (63.18 per cent), Delhi (50.09 per cent) and Rajasthan (46.36 per cent). However, the growth rate of Delhi and Rajasthan are below the regional average (55.84 per cent).

Whether the migration growth rate of NCR is related to the increase of short and long distance movements or due to the effect of any of these mobility patterns. To get the answer, we have added the inter-district and inter-state migration of Haryana, Uttar Pradesh and Rajasthan sub-regions

together. It avoids the comparability problem of interstate migration which has been taking place towards Delhi and other sub-units of NCR without any conceptual defect. Map 2.2 and Table 2.3 elucidate the sub-unit level distribution of NCR migration by distance.

1961-71 Scenario

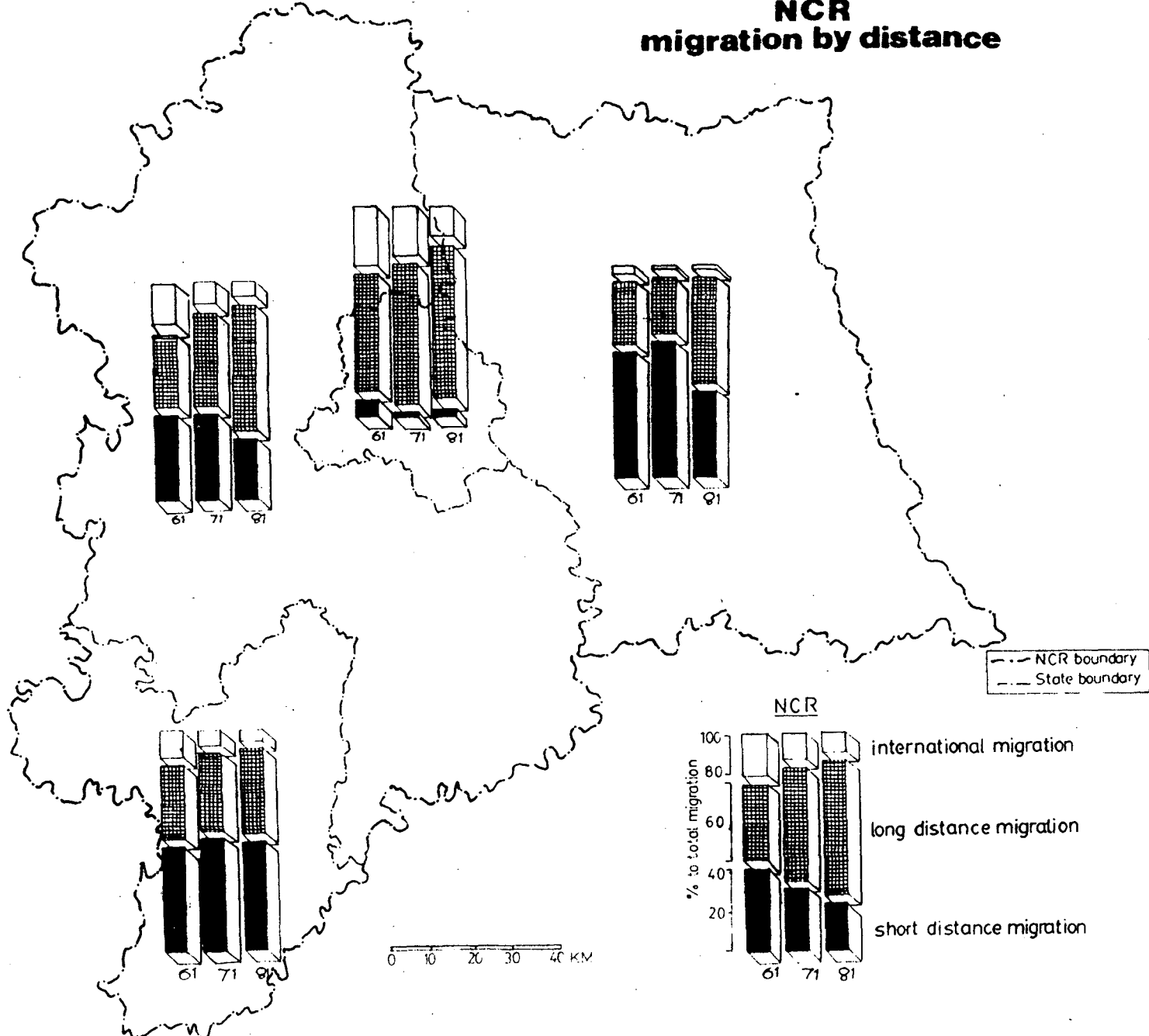
(i) Short Distance Migration

Short distance migration had a negative growth rate (-2.16 per cent), during 1961 to 1971 period in NCR. Meanwhile, all distance migration growth rate was 15.01 per cent. The negative growth rate of intra-district movement is mainly due to the fall off the same in Union Territory of Delhi (-52.12 per cent) and Uttar Pradesh (-13.11 per cent) sub-regions.

(ii) Long Distance Migration

Long distance migration attained a growth rate of 68.56 per cent all over the region. The sub-regional level, the highest per cent of growth is observed in Haryana (53.11 percent) followed by Delhi (49.53 per cent), Rajasthan (26.25 per cent) and Uttar Pradesh (19.98 per cent). International migration has negative response all over the region.

NCR migration by distance



1971-81 Scenario

(i) Short Distance Migration

The scenario of short distance migration growth during 1971-81 is extremely different from previous decade. Although the short distance migration has decreased in Haryana sub-unit (-6.92 per cent), it has gone up around 4.69 per cent in NCR. The highest per cent of growth is noticed in Union Territory of Delhi (124.24 per cent) followed by Rajasthan (21.34 per cent) and Uttar Pradesh (0.11 per cent). In the case of Delhi, the highest growth rate is because of the excessive growth of intra-district urbanward migration (196.38 per cent), especially boosted by the increase of urbanward male migration (271.40 per cent).

(ii) Long Distance Migration

Long distance migration has attained 66.49 per cent growth all over the region. This ratio is 2.07 less than the previous decadal growth rate. The highest per cent of growth is observed in Haryana sub-unit (83.09 per cent) followed by Uttar Pradesh (66.87 per cent), Delhi (61.85 per cent) and Rajasthan (66.49 per cent). The emergence of new districts namely, Sonipat and Faridabad,¹ after 1971 census and the

1. Census establishment report, Haryana, 1981.

industrialization which has taken place in Faridabad and Gurgaon accelerated the growth of long distance migration in Haryana sub-unit. International migration is still decreasing all over the region (-8.41 per cent).

Duration of Migration

The territorial movement of population, incoming or outgoing, is not uniform in the space at a point or points of time. As well as it does not have an unique character in a region throughout the period of development. It may be because of various temporal patterns which frequently arise from number of causes and have their impacts. In addition, it is likely to be associated either with development modality or with specific circumstances.

The D-2 table of the Indian census provides duration of migration data since 1961. The nature of data which are available from these censuses are as follows: (i) In 1961 census, the informations were collected and tabulated on the basis of place of birth while in 1971 and 1981 censuses they were based on the place of last residence. (ii) These informations are only available at the state and union territory level. However, to depict the characteristics of duration of migration district level computations of 1981 census are available from unpublished census sources.

To make comparison of different categories of duration of migration easily, we have regrouped the census data² into three distinct categories as follows:

1. Current Migration: It consists of those who migrated to the place of enumeration within one year before the census was undertaken.
2. Intracensal migration: Migration which had taken place after the 1971 census. This also includes the current migration of 1981 census.
3. Intercensal migration: It includes all population mobility which occurred before 1971 census.

1. Current Migration

In NCR, 6.22 per cent of the total migrants have changed their residence within one year before the 1981 census. The national average of the same is 1.66 per cent less than the NCR. At the sub-regional level, Haryana possesses the highest per cent of current migration (7.76 per cent) followed by Rajasthan (7.08 per cent), Union Territory of Delhi (6.71 per cent) and Uttar Pradesh (4.10 per cent). Although the figure of current male migration is 0.28 per cent higher than female migration in NCR, it is seconded

2. D-2 table of 1981 census classifies the duration of residence at the place of enumeration into six categories. They are (1) less than one year (2) 1-4 years, (3) 5-9 years, (4) 10-19 years, (5) 20 and above years and (6) age not stated.

by female in Rajasthan (1.40 per cent), Haryana (0.60 per cent) and Uttar Pradesh (0.10 per cent) sub-regions (Table 2.4).

2. Intracensal Migration

In the case of intracensal migration, the highest per cent is observed in Union Territory of Delhi (52.12 per cent) followed by Haryana (41.93 per cent) Uttar Pradesh (35.75 per cent) and Rajasthan (35.44 per cent). Among them, 93.77 per cent are urbanward migrants in the sub unit of Delhi. The sex ratio of urbanward intracensal migrations is 736 females per 1000 males. However, in the sub units of Haryana, Uttar Pradesh and Rajasthan, the sex ratio of rural migration is 2736, 1204 and 3618 females per 1000 male population respectively.

3. Intercensal Migration

Intercensal migration consists 51.86 per cent of all durational migration; in which urbanward migration possesses 27.39 per cent. The highest proportion of intercensal migration is noticed in Rajasthan sub-unit (63.68 per cent) followed by Uttar Pradesh (58.39 per cent), Haryana (57.22 per cent) and Union Territory of Delhi (43.74 per cent). Population mobility which had taken place towards the rural part of Haryana, Uttar Pradesh and Rajasthan sub-units before 1971 census is 70.57 per cent, 70.97 per cent and 89.63 per

cent of respective total intercensal migration. But in NCR their share is around 47.18 per cent. They have accounted for 4.92 per cent in the sub unit of Delhi.

Delhi accommodates 47.95, 50.52 and 38.34 per cent of NCR current, intracensal and intercensal migration respectively. The analysis after excluding Delhi's contribution to the total migration of NCR shows that movement towards rural areas has a lion's share in all categories of duration of migration. Among them, more than 70 per cent are female migrants.

Conclusion

During the period of 1961-71 and 1971-81 migration growth rate of NCR was 15.01 and 35.74 per cent respectively. At the sub-regional level, 1961-71 period, the highest per cent of growth is observed in Haryana (24.89 per cent). However, in 1971-81, Delhi has gained the first position (45.46 per cent). Rural migration seems to have a continuous decline in the sub-units of Haryana and Union Territory of Delhi. Mean time, the remaining constituents have an upward trend in their rural migration growth rate. Decadal urbanward migration growth is aggradising all over the planning unit. In 1981 the current, intracensal and intercensal migration rates of NCR are accounted for 5.06, 34.45 and 56.06 per cent of the total life time migration respectively. The

sub-unit level analysis reveals that Union Territory of Delhi possesses 47.95 per cent, 50.23 per cent and 38.34 per cent of NCR's current intracensal and intercensal migrants respectively. In Delhi, urbanward male migration shows an increasing trend in terms of absolute number; eventhough its share in the total population is declining. Haryana and Uttar Pradesh together hold 80.22 per cent of NCR intracensal migrants.

Table 2.1

PERCENTAGE OF MIGRANTS TO THE TOTAL POPULATION
1961-81

Sub-Region	1961			1971			1981		
	Total	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban
Delhi	61.61	3.88	57.73	49.87	3.87	46.00	47.75	2.63	45.12
Haryana	32.31	23.75	8.56	30.80	22.23	8.57	31.53	19.51	12.02
Uttar Pradesh	34.15	26.12	7.53	27.44	19.66	7.78	27.09	17.18	9.91
Rajasthan	29.80	26.87	2.93	28.54	25.27	3.27	27.71	24.00	3.71
NCR	40.22	20.19	20.03	34.85	16.16	18.67	34.96	13.44	21.52

Source : Compiled from Census of India 1961, 1971 & 1981.

Table 2.2
DECADAL GROWTH OF MIGRATION
1961-81

Sub-Region	1961-71			1971-81		
	Total	Rural	Urban	Total	Rural	Urban
Delhi	23.78	52.52	21.84	46.56	3.89	50.09
Haryana	24.89	22.65	31.10	31.11	12.37	79.74
Uttar Pradesh	-1.78	-9.73	26.32	26.47	11.94	63.18
Rajasthan	24.48	22.29	44.60	25.07	22.32	46.36
NCR	15.01	6.27	23.83	35.74	12.49	55.84

Source : Compiled from Census of India 1961, 1971 and 1981.

Total 2.3

DECADAL GROWTH RATE OF SHORT AND LONG DISTANCE
MIGRATION - 1961-1981

Sub-Region	1961-71			1971-81		
	Short distance migration	Long distance migration	Inter-national migration	Short distance migration	Long distance migration	Inter-national migration
Delhi	-52.12	49.53	-3.63	124.24	61.85	-7.63
Haryana	30.03	53.11	-32.14	-6.92	83.09	-5.31
Uttar Pradesh	-13.11	19.98	-0.90	0.11	66.87	-18.65
Rajasthan	36.54	26.65	-26.52	21.34	44.02	-25.32
NCR	- 2.16	68.56	-11.32	4.69	66.49	- 8.41

Source : Compiled from Census of India 1961, 1971 and 1981.

Table 2.4

DURATION OF MIGRATION - 1981
(Percentage to All Durational Migration)

Sub-Region		Current Migration			Intracensal Migration			Intercensal Migration			Period not Stated		
		Person	Male	Female	Person	Male	Female	Person	Male	Female	Person	Male	Female
Delhi	T	6.71	3.92	2.74	51.52	28.96	22.56	43.74	23.34	20.40	4.70	2.36	2.34
	R	0.97	0.57	0.40	3.21	1.56	1.65	2.15	0.32	1.83	0.18	0.09	0.09
	U	5.74	3.35	2.39	48.31	27.40	20.91	41.59	23.02	18.57	4.52	2.27	2.25
Haryana	T	7.76	3.58	4.18	41.93	15.21	26.72	57.22	10.70	46.52	0.85	0.42	0.43
	R	7.33	3.40	3.90	25.16	6.73	18.43	40.38	3.24	37.14	0.34	0.14	0.20
	U	0.43	0.18	0.25	16.77	8.48	8.29	16.84	7.46	9.38	0.51	0.28	0.13
Uttar Pradesh	T	4.10	2.00	2.10	35.75	11.13	24.62	58.39	8.34	50.05	5.86	1.90	3.96
	R	2.43	1.10	1.39	19.19	3.61	15.58	41.44	2.12	39.32	3.03	0.70	2.33
	U	1.61	0.90	0.71	16.56	7.52	9.04	16.95	6.22	10.73	2.83	1.20	1.63
Rajasthan	T	7.08	2.84	4.24	35.44	9.47	25.97	63.68	8.31	55.37	0.87	0.38	0.49
	R	6.14	2.36	3.78	26.92	6.26	22.66	57.08	5.86	51.22	0.80	0.34	0.46
	U	0.94	0.48	0.46	06.52	3.21	3.31	6.60	2.45	4.15	0.07	0.04	0.03
NCR	T	6.22	3.25	2.97	44.14	19.90	24.24	51.86	15.54	36.32	4.00	1.71	2.29
	R	3.07	1.44	1.63	13.88	3.53	10.30	24.47	1.75	22.72	1.05	0.28	0.77
	U	3.15	1.81	1.34	30.26	16.37	13.89	27.39	13.79	13.60	2.95	1.43	1.52

Source: Compiled from Census of India 1981.

Note : Total includes unclassifiable also.

Chapter - III

CHARACTERISTICS OF DELHI BOUND IMMIGRATION

In this chapter, some characteristics of immigration into Delhi; especially into the urban units Delhi are highlighted. They are, (i) spatial inflow of migration, (ii) reason for migration, (iii) literacy rate and educational attainments among the 'employment-migrants' and (v) marital status of migrant population.

1. Spatial Inflow of Migration

Union Territory of Delhi possesses around 9.72, 14.52 and 23.32 lakhs of migrant population in the year of 1961, 1971 and 1981 respectively. Out of them, migrants from Uttar Pradesh account for more than 40 per cent; i.e., 43.33 per cent in 1961, 46.33 per cent in 1971 and 49.81 per cent in 1981. The other major states from where the considerable number of people have migrated into Delhi in 1981 are Haryana (14.61 per cent), Punjab (9.30 per cent), Rajasthan (8.10 per cent), and Madhya Pradesh (2.30 per cent). These neighbouring states together contribute 81.12 per cent of the total inflow of Delhi in 1981. Their proportion of contribution in the year 1961 and 1971 were 89.33 per cent and 86.07 per cent respectively. Thus, they formed together as a 'catchment area' of sending people into Delhi. The

inflow from Haryana, Punjab, Rajasthan, Jammu and Kashmir, Tamil Nadu and Gao, Daman and Diu is continuously declining over the period of twenty years. However, immigration from Bihar, Kerala, Assam, Madhya Pradesh, Orissa, Uttar Pradesh, West Bengal etc. are increasing year by year (Table 3.1).

According to 'push and pull' theory less developed states send out large number of people into developed state or states. The present analysis, about the nature of Delhi bound migration, based on the per capita net domestic product of states and union territories of India in 1971 and 1981, at 1971 price level, with inflow from these states and union territories during the same period is also substantiating the 'push and pull' theory.

Table 3.2 illustrates that per capita income of Delhi in 1971 (Rs.1199) and 1981 (Rs.2872) are higher than the remaining states and union territories of India except Pondicherry (Rs.2930) in the year 1981. It is almost double than the national average. In these years, national per capita income was Rs.663 and Rs.1559 respectively. During the period 1971-81, Delhi's per capita income has gone up 139.53 per cent. While the apparent movement of national per capita income was 146.29 per cent. However, in real terms, Delhi's income growth is much higher than the national average.

In table 3.3, we have categorized the per capita income of states and union territories into five various groups like rupees less than 1000; 1000-1499; 2000-2499 and 2500-2999, to work out how many per cent of people are coming from each of these state categories into Delhi. It shows that 70.27 per cent of the total inflow is originating from the states whose per capita income is less than Rs.1500. Eventhough, the hypothesis is proved, in a close observation, the analysis is misleading the spatial inflow of migration to some extent. In reality, there are poorer states than Uttar Pradesh from where a negligible proportion of people is coming to Delhi for improving their living condition. This may be happending either due to the lack of information diffusion to these states and union territories or due to the feed back of various 'intervening obstacles'.

Streams of Migration

The proportion of inmigration from the rural areas is increased from 55.70 per cent, in 1971, to 57.24 per cent in 1981. However, the proportion of 1981 is still lower than what it was in 1961; i.e. 62.12 per cent. In the case of inflow from other urban units, the scenario is just reverse to the rural areas. That is, the volume of migration has declined from 42.76 per cernt, in 1971, to 41.23 per cent in 1981. In 1961, it was around 37.34 per cent of the total

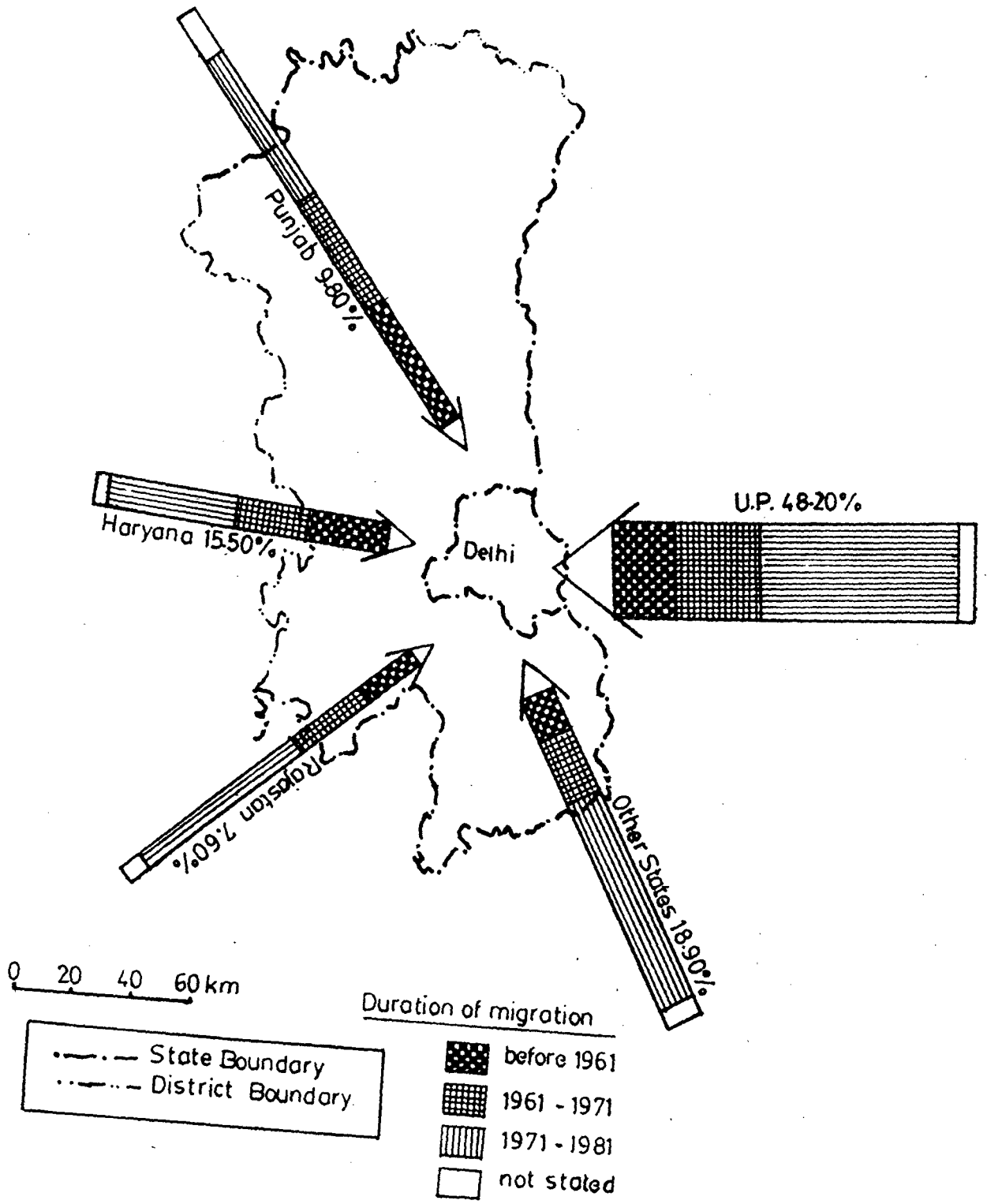
migration. Table 3.4 clearly describes the changing share of rural to rural, urban to urban, rural to urban and urban to rural streams of migration into Delhi during the year of 1961, 1971 and 1981. Urban to urban migration stream, which had seemed to be prompt during 1961-71 (41.45 per cent) is decreased in 1971-81 (41.87 per cent). Meanwhile, rural to urban stream is accentuated from 48.87 per cent, in 1971, to 53.29 per cent in 1981, after a decline of 5.31 per cent during the period of 1961-71. Rural to rural and urban to urban migration streams are continuously declining over the period of 1961, 1971 and 1981.

Following analyses are limited only to the urbanward migration of Delhi from other parts of the country. Because, (i) in 1981 census, the information related to the literacy, educational attainments and marital status of the migrants are available only for the urban units of Delhi, and (2) the urbanward inflow occupies around 94 per cent of the total immigration into Delhi. Therefore, the exclusion of ruralward migration does not make much differences in the overall characteristics of Delhi bound immigration.

Duration of Migration

In the lifetime migration of Delhi urban units, in 1981, the proportion of current migration is 6.48 per cent. According to the nature of place of origin, the share of newly

DELHI INTERSTATE IMMIGRATION PATTERN 1961-1981.



MAP 3.1

migrated people on the total migrants is varying. For example, the proportion of current migrants are high in the inflow from Madhya Pradesh (12.81 per cent) followed by Rajasthan (9.17 per cent), Uttar Pradesh (6.73 per cent), Haryana, (4.90 per cent) and Punjab (3.73 per cent). Intra-censal migrants (53.15 per cent) are more in number than the intercensal migrants. However, the percentage of intercensal migrants are more in the case of inflow from Punjab (60.24 per cent) and Haryana (50.75 per cent) (Table 3.5 and Map 3.1). The proportion of female migrants in the total migration is declining when the duration of migration becomes shorter and shorter. For example, their proportion in the current migration is 41.52 per cent while intra and inter censal migration possess 43.25 per cent and 41.10 per cent respectively.

2. Reason for Migration

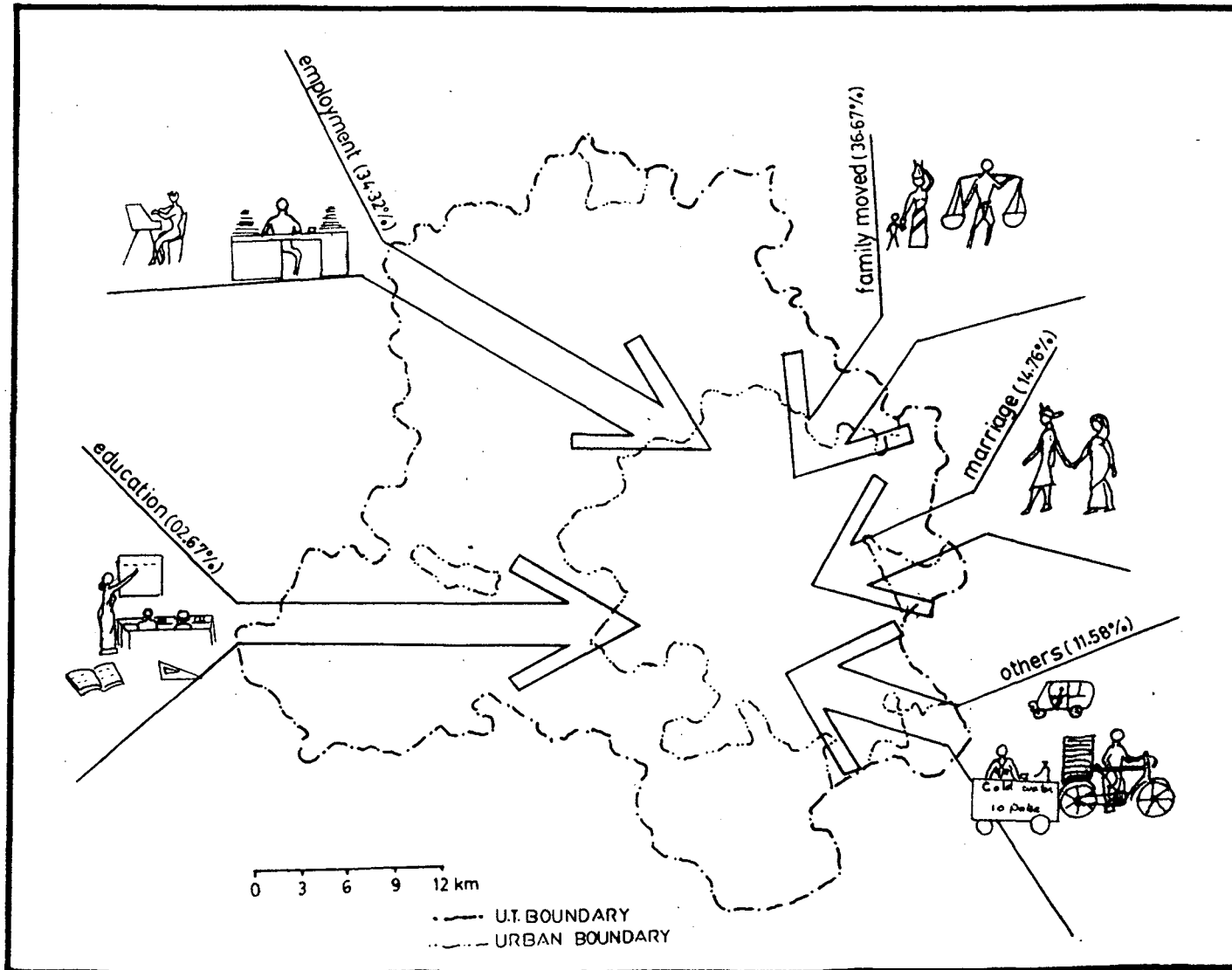
"Employment" and "family movement" are the two major reasons for immigration into Delhi. Former accounts for 34.32 per cent of the total migration. It is 2.35 per cent less than the latter one. In the case of "employment-migration", the proportion of male population accounts more than 90 per cent. Among them rural to urban stream holds predominant role (about 60 per cent). However, urban to

urban migration stream seems to have high velocity (60.97 per cent) in the total 'employment migration' from Punjab.

Associational migration is mainly characterised by child and old population.¹ In Delhi they accounted about 36.67 per cent of the total migrant population. Urban to urban stream of migration possesses 52 per cent of the total associational migration into Delhi. Among them, females account for 57.97 per cent. In the case of Rajasthan and Uttar Pradesh, large number of associational migrants are taking place from the rural areas. They have accounted for 59.23 per cent and 57.56 per cent of respective state's total immigration into Delhi. Marriage is the next important reason for migration. It accounts for 14.76 per cent of total immigration. Out of them, 98.58 per cent are females. The highest proportion of marriage migration is taking place from Haryana State (23.28 per cent). The least proportion of immigration into Delhi is for education. It accounts for 2.67 per cent of the total immigration. Educational-migration is also highly taking place from neighbouring states namely Haryana (2.87 per cent) and Uttar Pradesh (2.56 per cent). Around 11.58 per cent of the total migrants did not specify any of the above mentioned reasons (Table 3.6 and Map 3.2).

1. V.K.R.V. Rao and P.B. Desai, Greater Delhi: A Study in Urbanisation 1940-1957, Institute of Economic Growth, Delhi, 1965, p.92.

DELHI URBAN
Reason For Migration .1981



MAP 3.2

The sexwise analysis of reason for migration clearly indicates that more than half of the total male migration (56.76 per cent) is considered to be because of the prevailing unemployment problems in the states of their origin. If we include the associational movement of male dependents with employment migration, the proportion will be around 84.51 per cent. On the other hand, 48.12 per cent of the total female migration has been occurring due to the 'family movement'. Family movement and marriage together account for 81.36 per cent of the total female migration. This is also true in the case of female migration from Haryana (85.10 per cent), Uttar Pradesh (82.95 per cent), Punjab (81.35 per cent), Rajasthan (79.76 per cent) and Madhya Pradesh (75.38 per cent).

3. Literacy Rate and Educational Attainments Among the 'Employment Migrants'

Literates among the employment migrants are 66.88 per cent in 1981. It is higher than the urban literacy rate² (62.60 per cent). In the case of male and female migrations, it is 68.77 per cent and 42.88 per cent respectively. Illiterate people are more in the rural to urban migration stream (10.08 per cent). The comparison of migrants literacy rate with duration of migration - less than one year, one to four years, five to nine years and more than nine years - shows

2. Literacy rate = $\frac{\text{Number of literate person}}{\text{Total population}} \times 100$

that literacy rate declines when the duration of residence becomes shorter (Table 3.7). This means, among the current migrants literacy rate is lower than the old migrants.

Educational attainment is higher among the current migrants than as the old migrants.³ The analysis of literates among the employment-migrants by levels of education and duration of migration does not confirm Premi's finding. The proportion of literates below matric and technical diploma holders are more in the current migration. On the other hand, the proportion of matric but below graduates, graduates and above are more in the intercensal migration. The attainment of matriculation and higher education after migration into Delhi rises the proportion of matric and degree holders in the subsequent periods. The technical degree holders are more among the intracensal migrants.

The census data about the literacy and educational attainment of migrant population give information about at the time of census enumeration. It will distort the comparison of educational attainment with duration of migration. If we assume that the change in the literacy rate, after immigration into Delhi, is more from literate below matric

3. M.K. Premi and J.A.Ton, City Characteristics, Migration and Urban Development Policies in India, Papers of East-West Population Institute, No.92, Honolulu, 1985, pp.48-50.

to matric and below graduate category; then the educational attainments among the current migrants are much less than what it is among the intra and intercensal migrants. Table 3.8 depicts the distribution of literate migrants in the five categories of educational level by the duration of migration. On the basis of above mentioned assumption, the sixth column of the table represents the proportion of literates in the categories of other than below matric and graduate. It brings out that the proportion of highly educated people in the employment migration is declining when the duration of migration becomes shorter. In other words, it means highly educated people and duration of migration are positively correlated with each other.

4. Work Participation Among the 'Employment Migrants'

Work participation rate⁴ of migrant population tells what is the probability of getting job in the urban economy among them. Secondly, it helps to predict what will be the scenario of immigration in the coming years. High work participation rate among the migrants, generally, attracts more workers from outside to see their fortune in the urban labour market. Number of workers among those who

$$4. \text{ Work Participation Rate (WPR)} = \frac{\text{Number of Working Population}}{\text{Total population}} \times 100$$

migrated to Delhi for employment is 7.16 lakhs in 1981. Out of them, 1757 people are marginal workers. The work participation rate (WPR) among the employment-migrants are 89.30 per cent. This figure includes the WPR of intra district migrants also. Because, in the 1981 census the information related to migrant workers is aggregated for all distance migration. Neither short nor long distance migrants WPR is able to calculate separately from the census tabulation. Secondly, it does not provide data on the distribution of workers in the nine industrial categories of economic activities.

In the lifetime employment-migration, WPR is around 90 per cent. Among the male and female migrants, it is around 93.62 per cent and 45.39 per cent respectively. Table 3.9 highlights some interesting features about the WPR of Delhi urbanward employment-migration as follows:

- (i) Rural to urban migration stream (91.60 per cent) has high WPR than urban to urban migration stream (87.85 per cent).
- (ii) WPR and duration of migration are positively correlated in the case of rural to urban migration. It means, WPRs in the current migration (86.59 per cent) is less than the old migration (90.20 per cent).

(iii) In the case of female migration, WPR is high in the rural urban migration stream (42.95 per cent) than urban to urban migration stream. It is inversely correlated with the duration of migration.

(iv) The highest per cent of male work participation is observed among the migrants whose duration of residence is 1-4 years in urban Delhi than as others.

5. Marital Status of the Migration Population

Since, the census tabulation of age, sex and marital status provides information about the migrants' marital status at the time of enumeration, and not at the time of migration, it will deteriorate the analysis by the changes in the marital status which have taken place after the immigration into Delhi. However, the data on the current migration can be taken to picturise the marital status of migrant population, more or less accurately, at the time of migration.

The study of marital status is usually carried out for persons above a minimum age, generally based on the lower limit of age at marriage in a particular country. In India, it is observed that though the minimum legal age at marriage for female is 15 and for male 18, a sizable number of marriages

do take place below the minimum legal age.⁵ Table 3.10 illustrates the percentage distribution of male and female migrants by age and marital status; separately for current and life-time migration into Delhi urban agglomeration.

Among the life-time migrants 29.70 per cent of male and 18.63 per cent of female are never married. It includes child migrants also. They have accounted for 11.62 per cent and 14.77 per cent of the male and female life-time migrants respectively. Among the current migrants, 48.42 per cent of males and 33.14 per cent females are unamarried. In the case of male migration, the proportion of never married people is more in the age group 15-29 (49.20 per cent) than the age group of 0-4 (48.12 per cent). However, among the female migrants, 79.69 per cent of the never married people are in the age group 0-14.

In normal case, the number of unmarried people will decrease when the age group increases. However, it is not happening in the case of male migrant population of Delhi. Among the male migrants, the large number of unmarried people belonging to the age group of 15-29, are migrating into Delhi than married persons in the same age group; whereas

5. Asha A. Bhende and Tara Kanitkar, Principles of Population Study Bombay: Himalayan Publishing House, 1985, p.147.

most of the females are migrating into the city after getting married. This also confirms the high rate of female marriage migration into Delhi urban units.

Conclusion

Population mobility generally takes place from the area of high pressure on daily life to comparatively low pressure area. In terms of economic development it occurs from less developed region to developed one. The present study too, confirms the same. Around 70.27 per cent of the total immigration into Delhi is from the states where per capita income is less than Rs.1500. While the per capita income of Delhi and India as a whole is Rs.2872 and Rs.1559 respectively in the year 1981. However, the intensity of inflow decreases when the distance increases. The contribution of neighbouring states namely, Uttar Pradesh, Haryana, Punjab, Rajasthan and Madhya Pradesh, in the total inflow of Delhi is around 81.12 per cent in 1981, 86.07 per cent in 1971, and 89.33 per cent in 1961. Among them, urbanward migration accounts for 93.91 per cent in 1981. In the case of migration streams, rural to urban occupies 56.75 per cent of the total urbanward migration. It is 13.50 per cent higher than urban to urban migration which showed an increasing trend during the period of 1961-71.

The inter dependence between the causes of migration and their resultant effects may be illustrated schematically with the help of Fig.1. 'Employment' and 'Family movement' are the important twin reasons for male immigration into Delhi. They account for 84.51 per cent of the total male inflow. On the other hand, 81.36 per cent of the female migration occurs because of family movement and marriage. Literacy rate among the employment migrants is 66.88 per cent. The comparison of literacy rate with duration of migration shows that among the current migrants literates are less (51.98 per cent) than among the life time migrants (66.88 per cent). Also the proportion of highly educated people is less in the current migration. Work participation rate among the male migrants is 93.67 per cent, while it is 45.39 per cent among the female migrants. Rural to urban migration stream has high work participation rate than urban to urban migration stream. It is also true in the case of female migration. Among the current migrants, 48.42 per cent of male and 33.14 per cent of female are unmarried. In the case of male migration, never married people are more in the age group of 15-29; while in the female migration they are concentrated in the age group of 0-14. This also confirms the high rate of female marriage migration into Delhi metropolitan city.

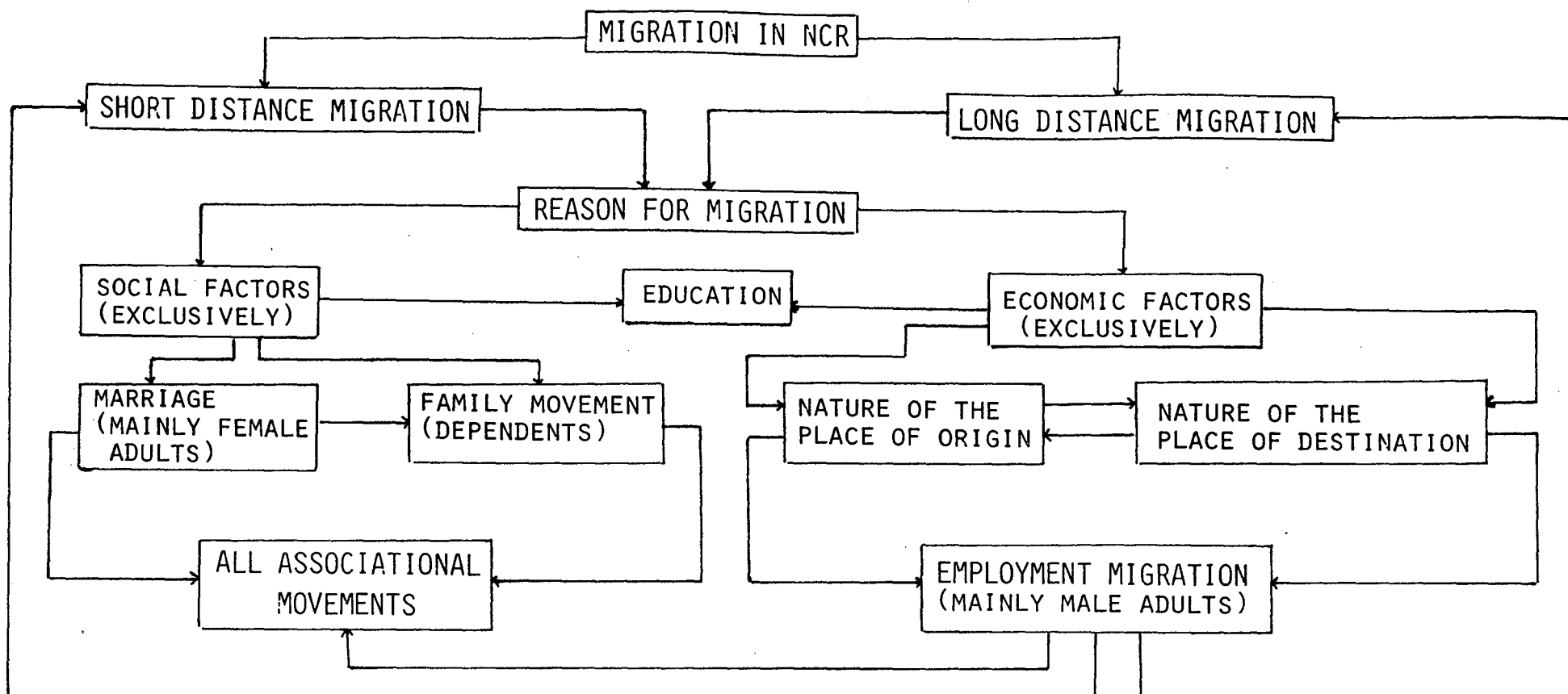


FIGURE - 1 : A SCHEMATIC REPRESENTATION OF THE NATURE OF INMIGRATION INTO DELHI AND NCR AS A WHOLE

INMIGRATION INTO DELHI - 1961-1981

Sl. No.	States & Union Territories	1961	1971	1981
1.	Andhra Pradesh	0.50	0.63	0.61
2.	Assam	0.12	0.16	0.18
3.	Bihar	1.00	1.60	4.12
4.	Gujarat	0.55	0.52	0.53
5.	Himachal Pradesh	0.73	2.60	2.15
6.	Haryana	-	16.06	14.61
7.	Jammu & Kashmir	1.14	0.92	0.73
8.	Kerala	1.05	1.32	1.36
9.	Madhya Pradesh	1.20	1.42	2.30
10.	Maharashtra	1.30	1.56	1.40
11.	Manipur	0.01	0.02	0.03
12.	Karnataka	0.47	0.53	0.46
13.	Orissa	0.13	0.20	0.27
14.	Punjab	35.04	12.86	9.30
15.	Rajasthan	9.77	9.39	8.10
16.	Tamil Nadu	1.97	1.90	1.66
17.	Uttar Pradesh	43.32	46.33	49.81
18.	West Bengal	1.60	1.75	2.06
19.	Tripura	0.01	0.01	0.02
20.	Goa, Daman & Diu	0.06	0.05	0.04
21.	Pondicherry	0.01	0.01	0.01
22.	Meghalaya	-	0.02	0.04
23.	Nagaland	-	0.01	0.01
24.	Sikkim	-	-	0.01
25.	Andaman Nicobar Islands	0.02	0.01	0.01
26.	Chandigarh	-	0.12	0.18
27.	Dadra Nagar Haveli	-	0.00	-
28.	Lakshadweep	-	-	-
29.	Arunachal Pradesh	-	-	0.01
30.	Mizoram	-	-	-
	TOTAL	100.00	100.00	100.00

Source: Compiled from Census of India 1961, 1971 and 1981.

Notes : 1. Migrants from Mizoram included with Assam in 1961.
Migrants from Haryana included with Punjab in 1961.
2. (-) Denotes insignificant.

Table 3.2

STATE PERCAPITA NET DOMESTIC INCOME
(at 1971 price level)

Sl. No.	States and Union Territories	1971	1981
1.	Andhra Pradesh	586	1313
2.	Assam	535	1221
3.	Bihar	402	927
4.	Gujarat	829	1028
5.	Haryana	877	2331
6.	Himachal Pradesh	678	1521
7.	Jammu & Kashmir	548	1496
8.	Karnataka	685	1314
9.	Kerala	594	1379
10.	Madhya Pradesh	484	1131
11.	Maharashtra	783	2261
12.	Manipur	377	1052
13.	Meghalay	*	1135
14.	Orissa	478	1101
15.	Punjab	1070	2771
16.	Rajasthan	620	1238
17.	Sikkim	*	835
18.	Tamil Nadu	581	1197
19.	Tripura	502	1206
20.	Uttar Pradesh	486	1280
21.	West Bengal	722	1553
22.	Goa, Daman & Diu	916	2794
23.	Pondicherry	844	2930
24.	Arunachal Pradesh	350	*
25.	Nagaland	*	*
26.	Delhi	1199	2872
	INDIA	633	1559

Source: Estimates of State domestic product 1960-61 - 1982-83, CSO, Deptt. of Statistics, Ministry of Planning, Govt. of India, 1984.

Notes : 1. Owing into differences in the source of material used, the figures for different states and union territories are not strictly comparable.

2. *Data is not available

Table 3.3

PROPORTION OF INMIGRANTS FROM EACH PERCAPITA
INCOME GROUP STATES, DELHI 1981

Category of Income	Income Limit (in Rs.)	No. of States & Union Territories	Proportion of in-migrants
Very low	Less than 1000	2	4.13
Low	1000-1499	14	66.14
Medium	1500-1999	2	4.21
High	2000-2499	2	16.01
Very High	2500-2999	3	9.35

Source: Compiled from Table 3.1 and 3.2.

Table 3.4

STREAMS OF INTERSTATE MIGRATION DELHI, 1961-81

Streams of Migration	1961	1971	1981
Rural to rural	7.94	6.83	4.95
Urban to rural	0.23	1.31	0.61
(Rural Ward Sub-Total)	(8.17)	(8.14)	(5.56)
Rural to Urban	54.18	48.87	53.29
Urban to Urban	37.11	41.45	40.62
(Urban Ward Sub-Total)	(91.29)	(90.32)	(93.91)
GRAND TOTAL	99.46	98.46	99.47

Source: Compiled from Census of India 1961, 1971 and 1981.

Note : 1. Figures are percentages to the respective year's total migration.

2. Place of birth unclassifiable as rural or urban is included in the total.

Table 3.5

DURATION OF MIGRATION DELHI URBAN - 1981

State of Origin	Duration of Migration							
	Total Migrants		Less than 1 yr.		1-9 years		10 & above yrs.	
	Male	Female	Male	Female	Male	Female	Male	Female
Haryana	49.37	50.63	2.48	2.42	19.51	20.40	25.41	25.34
Madhya Pradesh	53.13	46.87	7.08	5.72	29.37	26.14	14.32	12.76
Punjab	51.33	48.67	1.85	1.88	14.58	16.31	32.48	27.76
Rajasthan	54.11	45.89	5.15	4.02	23.91	20.64	22.89	19.03
Uttar Pradesh	58.81	41.19	4.14	2.69	28.62	19.51	23.89	16.99
All States & Union Territories of India	56.23	43.77	4.00	2.84	26.28	20.03	23.72	18.71

Source: Compiled from Census of India 1981.

Notes : 1. Figures are percentages to the respective state's total immigration.

2. Period not stated is included in the total migrants, i.e., all durational migrants.

Table 3.6

REASON FOR MIGRATION-DELHI URBAN 1981

States	Rural/ Urban Status of Place of Last Res.	Employment			Education			Family Moved		
		Person	Male	Female	Person	Male	Female	Person	Male	Female
Haryana	Total	26.19	24.50	1.69	2.87	1.97	0.90	36.71	16.67	20.04
	Rural	15.73	14.90	0.83	1.71	1.22	0.49	18.27	8.29	9.98
	Urban	10.37	9.52	0.85	1.16	0.74	0.42	18.38	8.35	10.03
Madhya Pradesh	Total	34.77	28.65	6.12	2.13	1.40	0.73	42.09	17.24	24.85
	Rural	22.26	17.93	4.33	0.60	0.41	0.19	20.00	7.89	12.11
	Urban	12.36	10.60	1.76	1.53	0.99	0.54	21.94	9.28	12.66
Punjab	Total	24.44	22.61	1.83	2.17	1.31	0.86	42.85	19.25	23.57
	Rural	9.30	8.80	0.50	0.69	0.42	0.27	13.18	5.73	7.45
	Urban	14.90	13.58	1.32	1.46	0.87	0.59	29.25	13.33	15.92
Rajasthan	Total	33.64	29.61	4.03	1.90	1.32	0.58	37.85	16.38	21.47
	Rural	23.36	20.44	2.92	0.91	0.67	0.24	22.42	9.66	12.76
	Urban	9.98	8.93	1.05	0.95	0.62	0.33	15.13	6.60	8.53
Uttar Pradesh	Total	37.96	36.01	1.95	2.54	1.84	0.70	34.52	14.46	20.06
	Rural	25.09	24.01	1.08	1.50	1.14	0.36	19.87	8.19	11.68
	Urban	12.77	11.91	0.86	1.04	0.70	0.34	14.60	6.25	8.35
All States & U.Ts. of India	Total	34.32	31.91	2.41	2.67	1.85	0.82	36.67	15.60	21.07
	Rural	20.59	19.40	1.19	1.33	0.98	0.35	17.51	7.36	10.15
	Urban	13.54	12.34	1.20	1.33	0.86	0.47	18.99	8.17	10.82

Table 3.6 Contd.

States	Rural/ Urban State's of Place of Last Res.	Marriage			Others		
		Person	Male	Female	Person	Male	Female
Haryana	Total	23.28	0.24	23.04	10.95	6.00	4.95
	Rural	12.74	0.13	12.61	5.36	3.01	2.35
	Urban	10.49	0.11	10.38	5.52	2.95	2.57
Madhya Pradesh	Total	10.69	0.20	10.49	10.32	5.63	4.69
	Rural	3.52	0.11	3.41	3.89	2.13	1.76
	Urban	7.13	0.09	7.04	6.33	3.44	2.89
Punjab	Total	16.25	0.21	16.04	14.32	7.97	6.35
	Rural	4.50	0.06	4.44	4.33	2.53	1.80
	Urban	11.62	0.15	11.47	9.79	5.34	4.45
Rajasthan	Total	15.17	0.25	14.92	11.44	6.41	5.03
	Rural	7.89	0.15	7.74	6.16	3.56	2.60
	Urban	7.18	0.10	7.08	5.08	2.75	2.33
Uttar Pradesh	Total	14.32	0.22	14.10	10.66	6.29	4.37
	Rural	7.16	0.12	7.04	5.57	3.40	2.17
	Urban	7.15	0.10	7.05	5.03	2.85	2.18
All States & U.Ts of India	Total	14.76	0.21	14.55	11.58	6.66	4.92
	Rural	6.82	0.11	6.71	5.13	3.08	2.05
	Urban	7.88	0.10	7.78	6.32	3.50	2.82

Source: Compiled Census of India, 1981.

Notes : (i) Figures are the percentages to respective state's total immigration into Delhi.

(ii) Place of Last Residence unclassified as rural or urban is included in the total.

Table 3.7

LITERACY AND EDUCATIONAL ATTAINMENT AMONG THE
'EMPLOYMENT-MIGRANTS' DELHI URBAN 1981

Duration of Migration	Nature of Place of Last res.	Illiterate			Literate			Literate Below Matric*			Matric but Below Graduate**		
		Person	Male	Female	Person	Male	Female	Person	Male	Female	Person	Male	Female
Less than 1 year	Total	48.02	39.24	8.78	51.98	49.24	2.74	27.14	25.91	1.23	14.91	14.09	0.82
	Rural	37.60	30.60	7.00	31.13	30.31	0.82	18.92	18.37	0.55	9.74	9.47	0.27
	Urban	10.42	8.64	1.78	20.85	18.93	1.92	8.22	7.54	0.68	6.17	5.62	0.55
1-4 years	Total	35.75	31.04	4.71	64.25	60.65	3.60	30.62	29.17	1.45	21.00	19.91	1.09
	Rural	25.49	22.31	3.18	37.62	36.44	1.12	20.59	20.01	0.58	13.07	12.71	0.36
	Urban	10.26	8.73	1.53	26.69	24.21	2.48	10.03	9.16	0.87	7.93	7.20	0.73
5-9 years	Total	35.43	28.66	3.53	67.78	64.69	3.09	31.92	30.64	1.28	22.68	21.77	0.91
	Rural	25.49	20.00	2.25	39.76	38.80	0.96	21.33	20.80	0.53	14.07	13.80	0.27
	Urban	9.94	8.66	1.28	28.02	25.89	2.13	10.59	9.84	0.75	8.61	7.97	0.64
10+ years	Total	24.32	21.34	2.98	70.68	68.20	2.48	32.39	31.26	1.13	23.80	23.14	0.66
	Rural	14.43	12.73	1.70	37.43	36.83	0.60	20.16	19.78	0.38	12.63	12.50	0.13
	Urban	9.89	8.61	1.28	33.25	31.37	1.88	12.23	11.48	0.75	11.17	10.64	0.53
All Duration	Total	33.11	29.07	4.04	66.89	63.87	2.96	31.37	30.08	1.29	22.13	21.29	0.84
	Rural	23.03	20.39	2.64	37.28	36.45	0.83	20.34	19.85	0.49	12.70	12.47	0.23
	Urban	10.08	8.68	1.40	29.55	27.42	2.13	11.03	10.23	0.80	9.43	8.82	0.61

Notes : * Includes figures for educational levels not classified

** Includes non-technical diplomas and certificates not equal to degree.

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Duration of Migration	Nature of Place of Last Residence	Technical Diploma or Certificate not Equal to Degree			Graduate and Above Other than Technical Degree			Technical Degree or Diploma Equal to Degree or P.G. Degree		
		Person	Male	Female	Person	Male	Female	Person	Male	Female
Less than 1 year	Total	0.69	0.68	0.01	6.45	5.76	0.69	1.78	1.64	0.14
	Rural	0.28	0.27	0.01	2.06	1.92	0.14	0.27	0.27	-
	Urban	0.41	0.41	-	4.39	3.84	0.55	1.51	1.37	0.14
1-4 years	Total	0.98	0.87	0.11	9.35	8.58	0.77	2.33	2.15	0.18
	Rural	0.40	0.36	0.04	3.07	2.96	0.11	0.43	0.40	0.03
	Urban	0.58	0.51	0.07	6.28	5.62	0.66	1.90	1.75	0.15
5-9 years	Total	1.04	0.96	0.08	9.94	9.36	0.58	2.16	1.98	0.18
	Rural	0.40	0.37	0.03	3.42	3.37	0.05	0.50	0.48	0.02
	Urban	0.64	0.59	0.05	6.52	5.99	0.53	1.66	1.50	0.16
10+ years	Total	0.97	0.88	0.09	11.81	11.35	0.46	1.69	1.57	0.12
	Rural	0.35	0.33	0.02	3.84	3.80	0.04	0.44	0.42	0.02
	Urban	0.62	0.55	0.07	7.97	7.55	0.42	1.25	1.15	0.10
All Duration	Total	0.98	0.90	0.08	10.42	9.83	0.59	1.97	1.82	0.15
	Rural	0.38	0.36	0.02	3.42	3.35	0.07	0.44	0.42	0.02
	Urban	0.06	0.54	0.06	7.00	6.48	0.52	1.53	1.40	0.13

Source : Compiled from Census of India, 1981.

Notes : 1. Place of last residence unclassified as rural and urban is excluded from the total.

2. Figures are the percentages to the respective durational migration.

3. Unspecified duration of residence includes in the all duration.

Table 3.8

EDUCATIONAL ATTAINMENT AMONG THE 'EMPLOYMENT-
MIGRANTS' - DELHI URBAN 1981

Duration of Migration	1 Literate below Matric	2 Matric but below Graduate	3 Technical Diploma or Certificate not equal to Degree	4 Graduate and Above Other than Technical Degree	5 Technical Degree or Diploma Equal to Degree	6 3+4+5
Less than 1 year	51.96	30.60	1.32	12.41	3.42	17.15
1-4 years	47.65	32.68	1.52	14.55	3.63	19.70
5-9 years	47.62	33.94	1.53	14.67	3.18	19.38
(1-9 years)	(47.63)	(33.31)	(1.52)	(14.61)	(3.41)	(19.54)
10+ years	45.83	33.67	1.37	16.71	2.39	20.47
All Duration	46.93	33.11	1.41	15.54	2.93	19.96

Source : Compiled from Table 3.7.

Notes : 1. Figures are the percentages to the literates in respective duration.
2. All duration includes unspecified duration of residence also.

Table 3.9

WORK PARTICIPATION AMONG THE EMPLOYMENT - MIGRANTS
DELHI URBAN 1981

Duration of Migration	Place of Last Residence	Total Migrants for Employment			Workers			Non-Workers		
		Person	Male	Female	Person	Male	Female	Person	Male	Female
Less than 1 year	Total	100.00	88.64	11.36	86.59	79.75	6.84	13.41	8.89	4.52
	Rural	63.89	56.64	7.25	55.27	50.48	4.79	8.62	6.16	2.46
	Urban	31.60	27.77	3.83	27.22	25.31	1.91	4.38	2.46	1.92
1-4 years	Total	100.00	91.29	8.71	90.20	86.25	3.95	9.80	5.04	4.76
	Rural	58.57	54.54	4.03	53.49	51.60	1.89	5.08	2.94	2.14
	Urban	37.19	32.94	4.23	32.87	31.02	1.85	4.32	1.92	2.40
5+ years	Total	100.00	93.87	6.13	90.20	88.02	2.18	11.98	5.85	3.95
	Rural	54.67	52.19	2.48	50.62	49.76	0.86	4.05	2.43	1.62
	Urban	40.21	37.11	3.10	35.57	34.44	1.13	4.67	2.87	1.97
All Duration	Total	100.00	92.68	7.32	89.80	86.77	3.03	10.20	5.91	4.29
	Rural	56.28	53.02	3.26	51.55	50.15	1.40	4.73	2.87	1.86
	Urban	39.00	35.43	3.57	34.26	32.81	1.45	4.74	2.62	2.12

Source: Compiled from Census of India, 1981.

Notes : 1. All duration includes unspecified duration of residence also.

2. Total includes unspecified status of place of Last Residence also.

Table 3.10

MARITAL STATUS OF THE MIGRANTS - DELHI
URBAN AREA - 1981

Age Group	Current Migration						Life-Time Migration					
	<u>Never Married</u>		<u>Married</u>		<u>Widowed, Di- vorced and Separated</u>		<u>Never Married</u>		<u>Married</u>		<u>Widowed, Di- vorced and Separated</u>	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
0-14	23.30	26.41	0.19	0.40	*	*	11.62	14.77	0.09	0.11	*	*
15-29	23.82	6.40	23.63	40.60	0.14	0.16	16.33	6.33	16.47	26.10	0.11	0.15
30-59	1.18	0.25	24.52	19.14	0.61	1.87	1.56	0.39	45.17	42.31	1.10	3.99
60+	0.07	0.02	2.17	1.81	0.64	2.81	0.15	0.03	6.01	3.74	1.32	4.90
All Ages	48.42	33.14	50.15	61.97	1.40	4.85	29.70	18.63	67.75	72.29	2.52	9.05

Source : Compiled from Census of India, Delhi 1981.

- Notes :
1. Figures are the percentages to the total migrants of respective sex.
 2. Unspecified marital status is included in the total migrants.
 3. Age not specified includes in all age group.
 4. *Denotes insignificant.

Chapter - IV

CORRELATES OF URBANWARD MIGRATION

The main emphasis of this chapter is to bring out the influence of selected socio-economic variables on the urban ward male and female migration. For this, eight variables are selected. Among them, the first variable is related to the urbanward migration and others are related to the various aspects of urban development. Because, urbanward migration, especially in the case of male migration, is more or less regulated by economic reasons. In the methodological side, the first preference is given to the analysis of correlation coefficients among these selected variables under the subtitles of Selection I and Selection II respectively for male and female migration. In the second part, the data of Selection I are again subjected to step-wise multiple regression analysis by considering the first variable as dependent and others are as independent.

Characteristics of the VariablesPercentage of Migrants Among the Urban Population (Y)

Number of migrants in a region is varying by the influence of socio-economic developments, which have taken place within as well as outside the region. The proportion

of migrants among the urban male population is very high in Faridabad (53.51 per cent) and Delhi (49.40 per cent) districts. However, in NCR, they are accounted for 43.19 per cent. Their ratio is below the regional average in the remaining districts. Proportion of female migrants is very high in Faridabad (59.60 per cent) and Gurgaon districts (54.13 per cent) while they are accounted for 48.30 per cent of the total urban female population in NCR (Table 4.1 and Map 4.1).

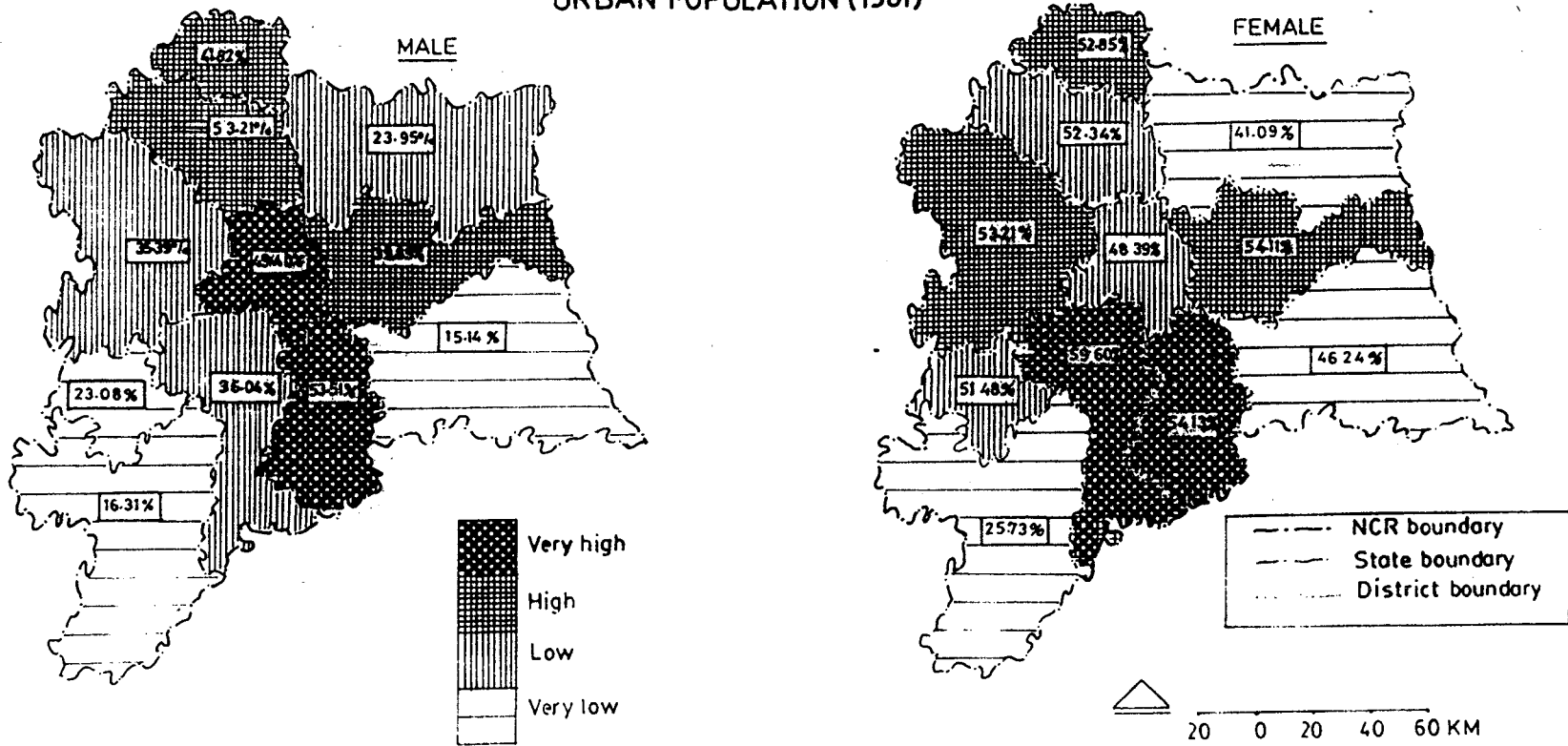
Percentage of Urban Population in the Total Population (X_1)

Degree of urbanisation is an indicator of development. Because, in urban areas, generally, the standard of living is better than rural areas. In NCR, 47.93 per cent of the total male and 46.60 per cent of the female population are living in urban centres. In terms of district total, their proportion is very high in Delhi (male 92.73 per cent and female 92.74 per cent) and very low in Bawal and Rewari tehsils (male 13.40 per cent and female 12.71 per cent) of Mahendragarh district (Table 4.1 and Map 4.2).

Work Participation Rate (WPR) in Urban Primary Sector (X_2)

Proportion of workers engaging themselves in primary

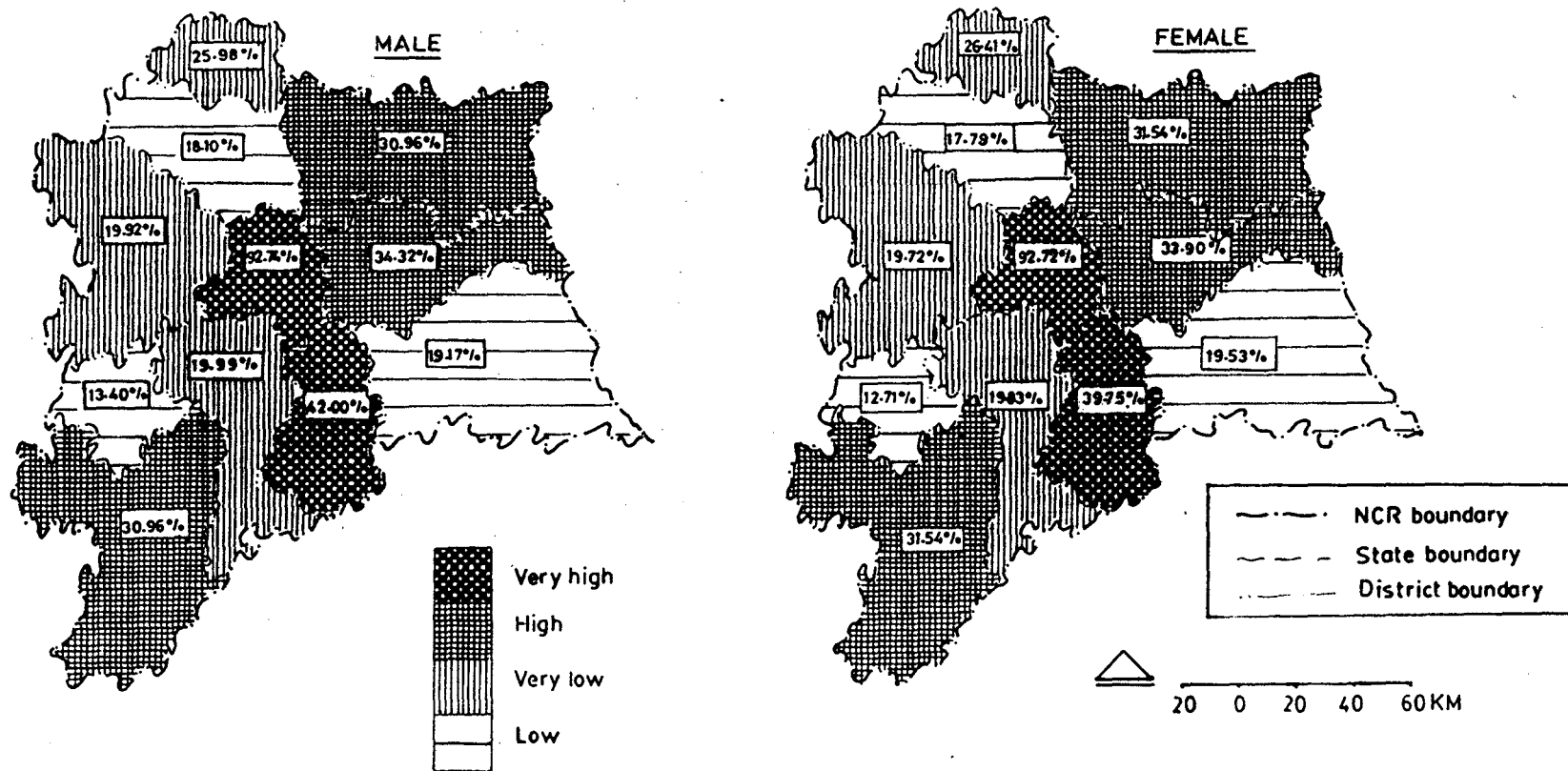
NCR PERCENTAGE OF MIGRANTS AMONG THE URBAN POPULATION (1981)



MAP 4.1

NCR

PERCENTAGE OF URBAN POPULATION TO THE TOTAL POPULATION (1981)



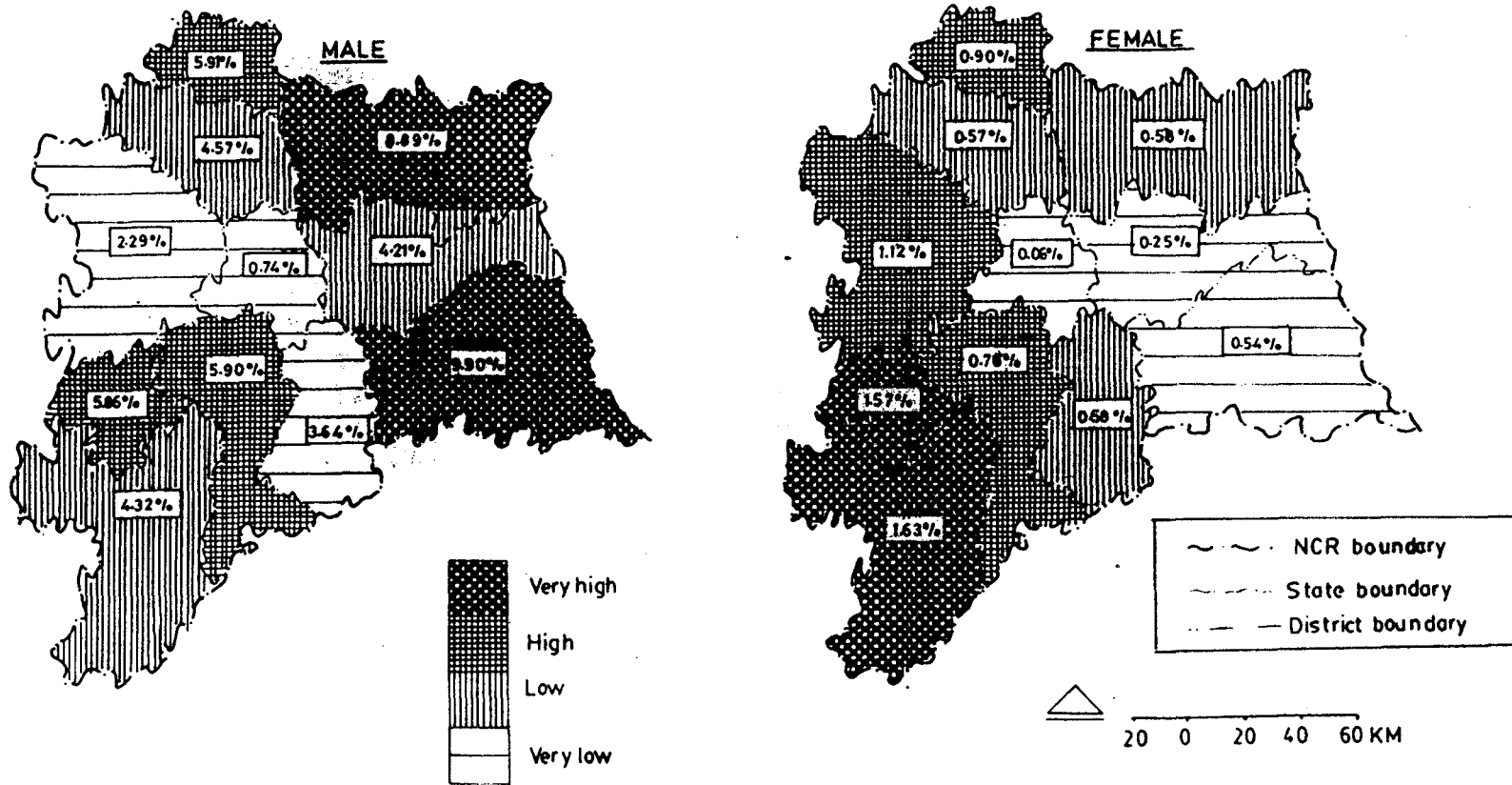
MAP 42

activities¹ can vary the inflow of population into urban units. For example, when the demands of milk, milk products, eggs, meat, etc. increase in urban centres, work participation rate in these and allied activities increases at the fringe areas of urban centres. In NCR, 2.62 per cent of male and 0.12 per cent of female population are engaged in primary activities. In the case of male population, 2.62 per cent are working primary activities except Delhi (0.74 per cent) and Rohtak (2.29 per cent) districts. Female work participation rate in this sector is also very low in Delhi urban centres (0.06 per cent). However, in all other districts of NCR their WPRs is higher than the regional average (Map 4.3).

-
1. For the purpose of analysis, we have regrouped the census classification of workers into four sectors. The comparison between these two classifications are fairly illustrated in the following table:

<u>S.No.</u>	<u>Sector</u>	<u>Census Categories of Workers</u>
I	Primary	Cultivators(I), Agricultural Labourers(II), Forestry, Fishing, Hunting and Plantations, Orchard's and Allied activities (III).
II	Manufacturing	Mining and quarrying(IV), Manufacturing, processing, servicing and repairs in household industries (Va) and other than household industries (Vb).
III	Infrastructural	Construction (VI), Trade and Commerce (VII) and Transport, Storage and Communications (VIII).
IV	Other Services	Other Services (IX)

NCR WORK PARTICIPATION RATE IN PRIMARY SECTOR (1981)



MAP 4.3

Work Participation Rate in Manufacturing Sector (X₃)

Industrialisation is one of the factors which attracts a large number of workers from outside the urban centres. It is one of the best indicator of economic development. Among other districts of NCR, Faridabad (28.37 per cent) and Ghaziabad (17.74 per cent) have the highest male WPR in manufacturing activities. While female WPR is more in Karnal tehsil (1.38 per cent) and Faridabad district (1.20 per cent). They have accounted for NCR as 6.42 per cent (male) and 0.42 per cent (female) (Map 4.4).

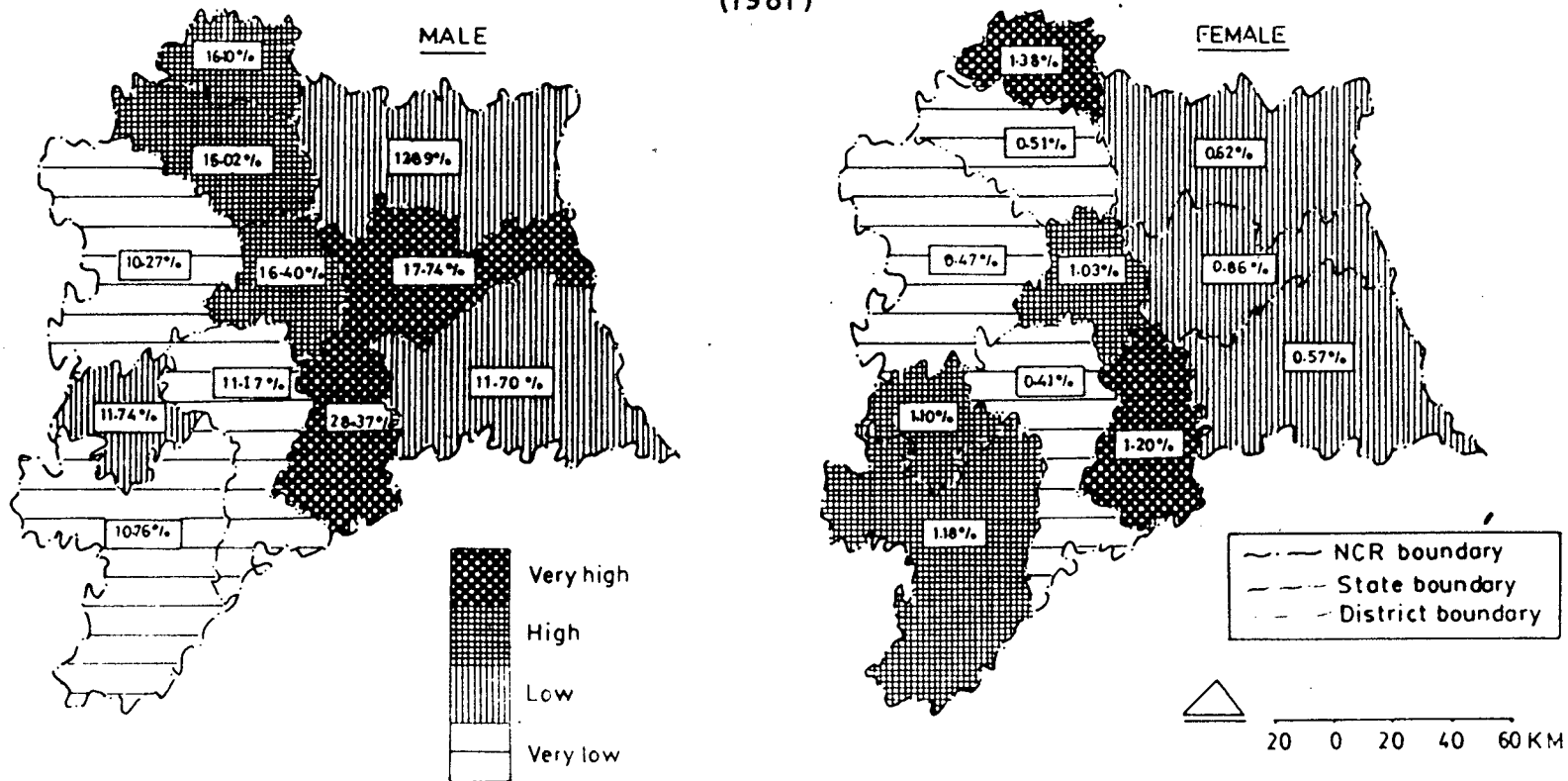
Work Participation Rate in Infrastructural Activities (X₄)

WPR in infrastructural activities denotes the processes of urban development. It includes people engaged in construction works, transport, communication, trade and commerce. In NCR, 18.33 per cent of male and 0.38 per cent of female population are participating in these works. In the case of male population, it is around three times higher than the WPR in manufacturing sector. Also, male WPR_{in} infrastructural activities is more than 20 per cent in Delhi and Bawal and Rewari tehsils of Mahendragarh district (Map 4.5).

Work Participation Rate in Other Services (X₅)

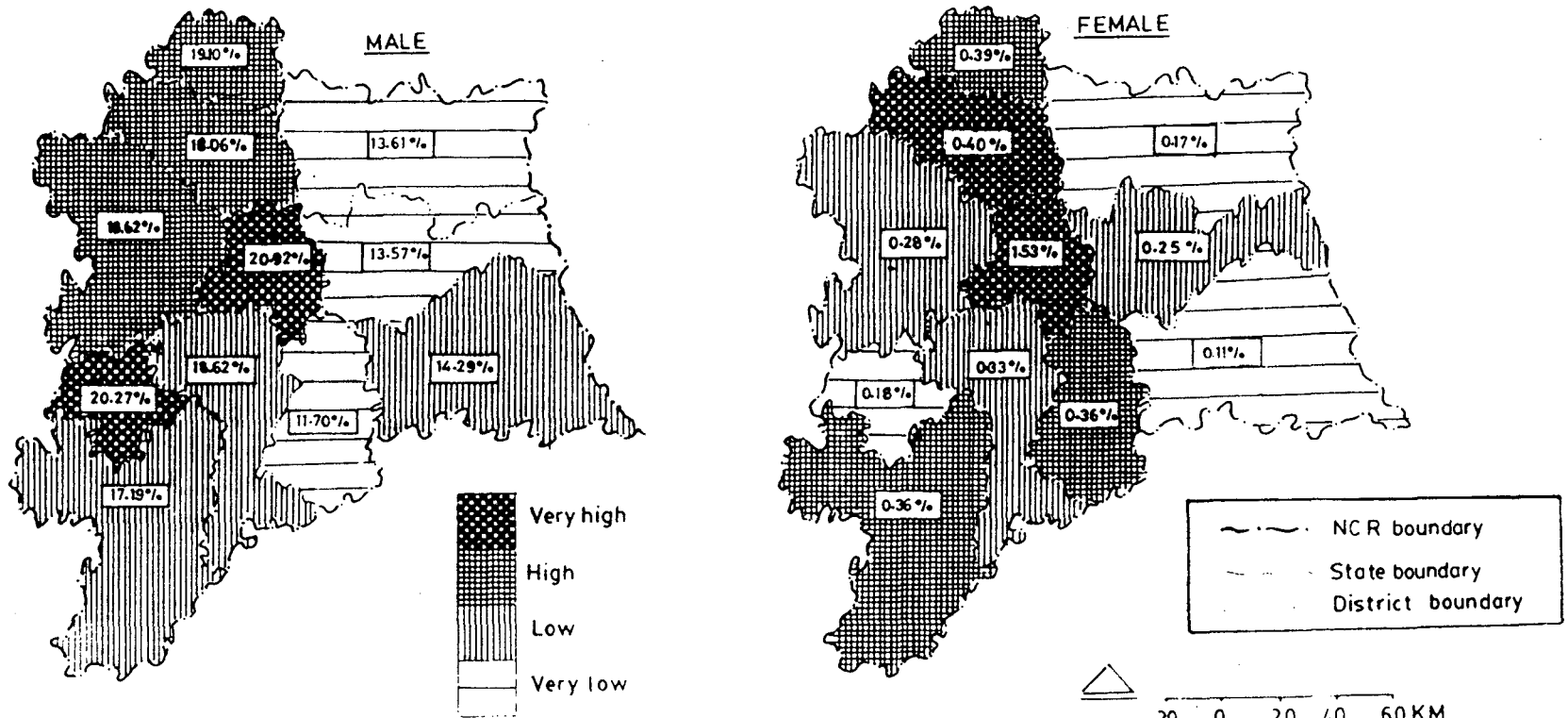
According to 1981 census, all workers, i.e., those have been engaged in some economic activities during the last one year other than cultivators, agricultural labourers and household industrial workers are treated as other workers. It

NCR WORK PARTICIPATION RATE IN MANUFACTURING SECTOR (1981)



MAP 4-4

NCR WORK PARTICIPATION IN INFRASTRUCTURAL ACTIVITIES (1981)



MAP45

include political and social workers, all government servants, municipal employees, teachers, priests etc. In NCR, they are accounted for 13.78 per cent (male) and 1.46 per cent (female). However, male WPR is higher than the regional average in Delhi (15.12 per cent) and Gurgaon (13.89 per cent) districts while female WPR is high in Delhi (4.05 per cent) and Rohtak (3.31 per cent) districts (Map 4.6).

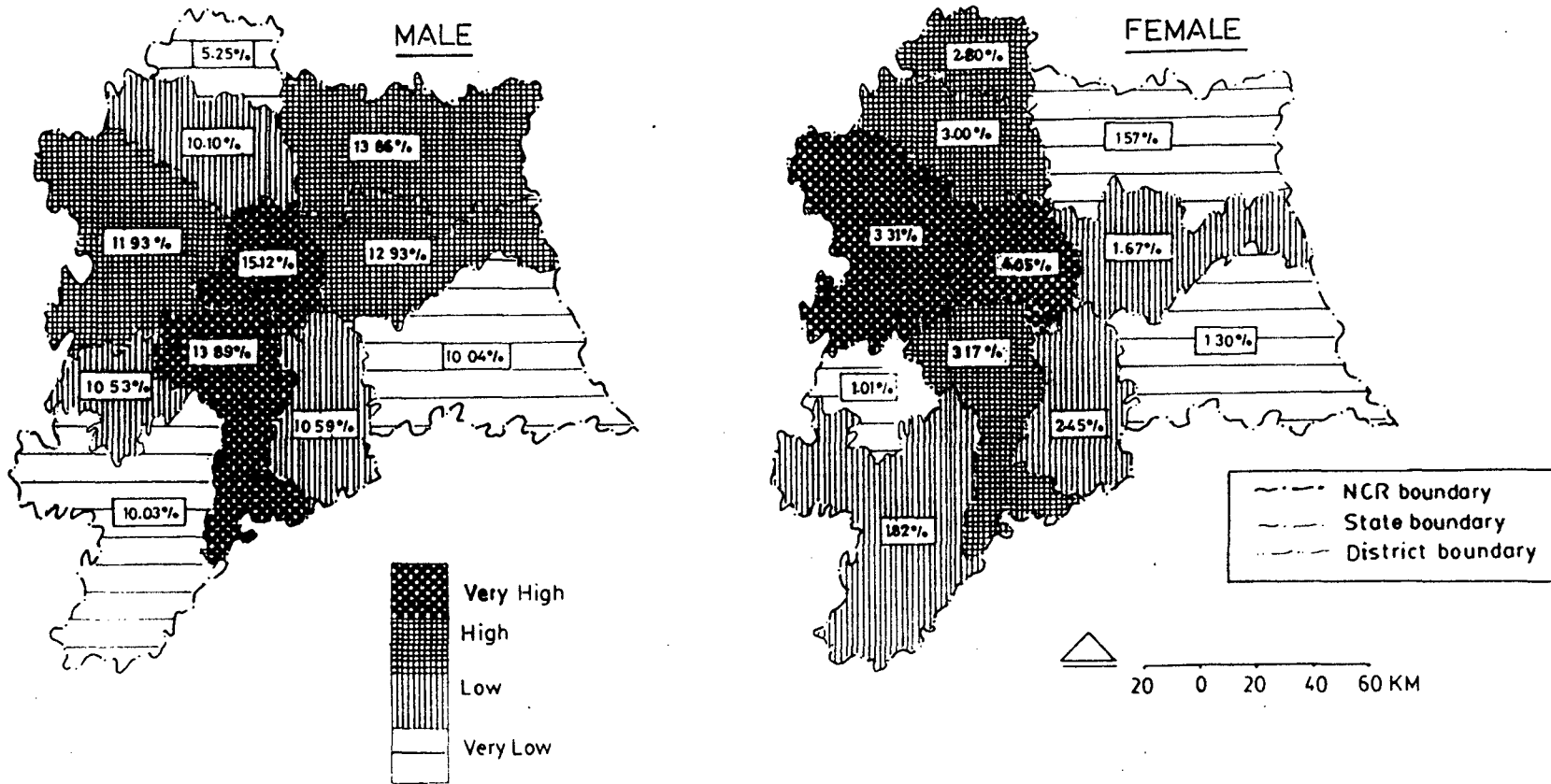
Urban Literacy Rate (X_6)

Literacy rate is one of the indicators of social development. Urban development and literacy rate are positively correlated each other. Literacy rate of urban male and female population are 61.98 per cent and 48.78 per cent respectively in NCR. In the case of male population, it is lower than the regional average in Meerut (54.13 per cent), Ghaziabad (58.64 per cent) and Bulandshahr (44.42 per cent) districts. Meanwhile, female literacy rate is lower than the regional average in Faridabad (44.05 per cent), Bawal and Rewari tehsils (42.47 per cent), Alwar (38.86 per cent), Meerut (34.23 per cent), Ghaziabad (36.91 per cent) and Bulandshahr (26.34 per cent) districts (Map 4.7).

Per Capita Expenditure for Urban Amenities (X_7)

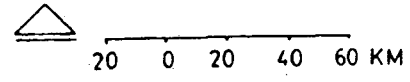
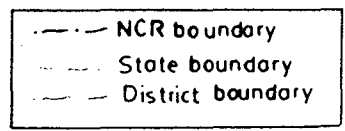
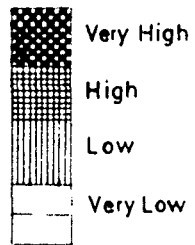
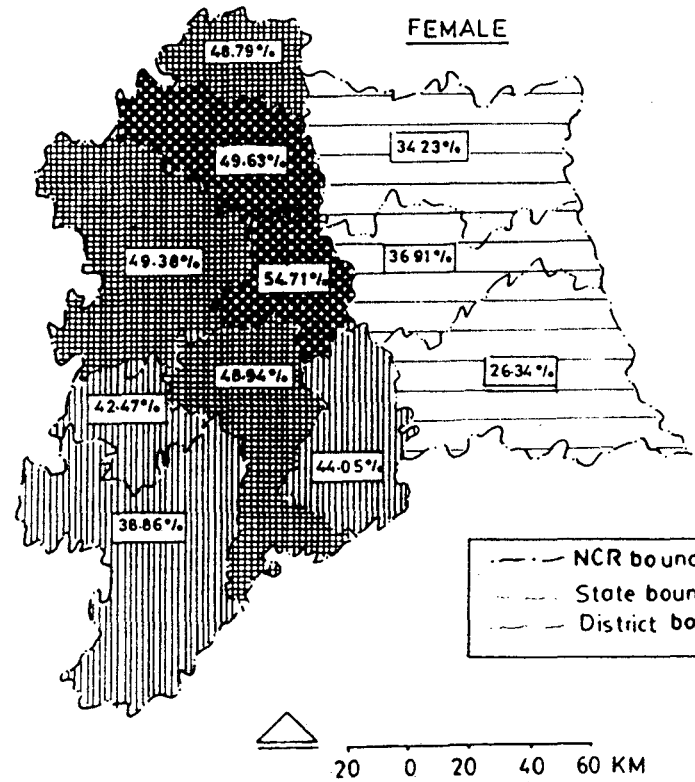
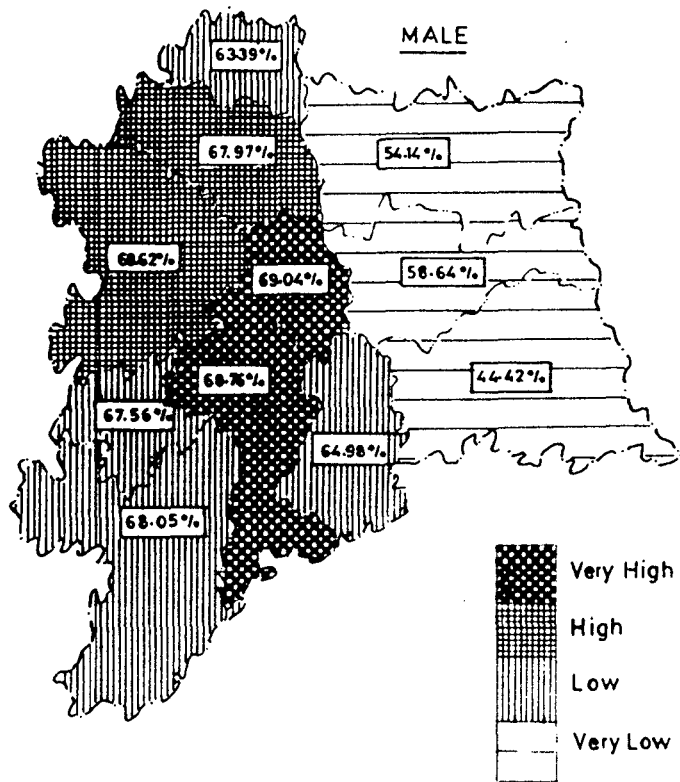
It shows the degree of urban development. Cities which are spending large amount of money for urban amenities are attracting more number of people from surrounding regions. The average expenditure for urban amenities in NCR is Rs.167.

NCR WORK PARTICIPATION RATE IN OTHER SERVICES (1981)



MAP 4.6

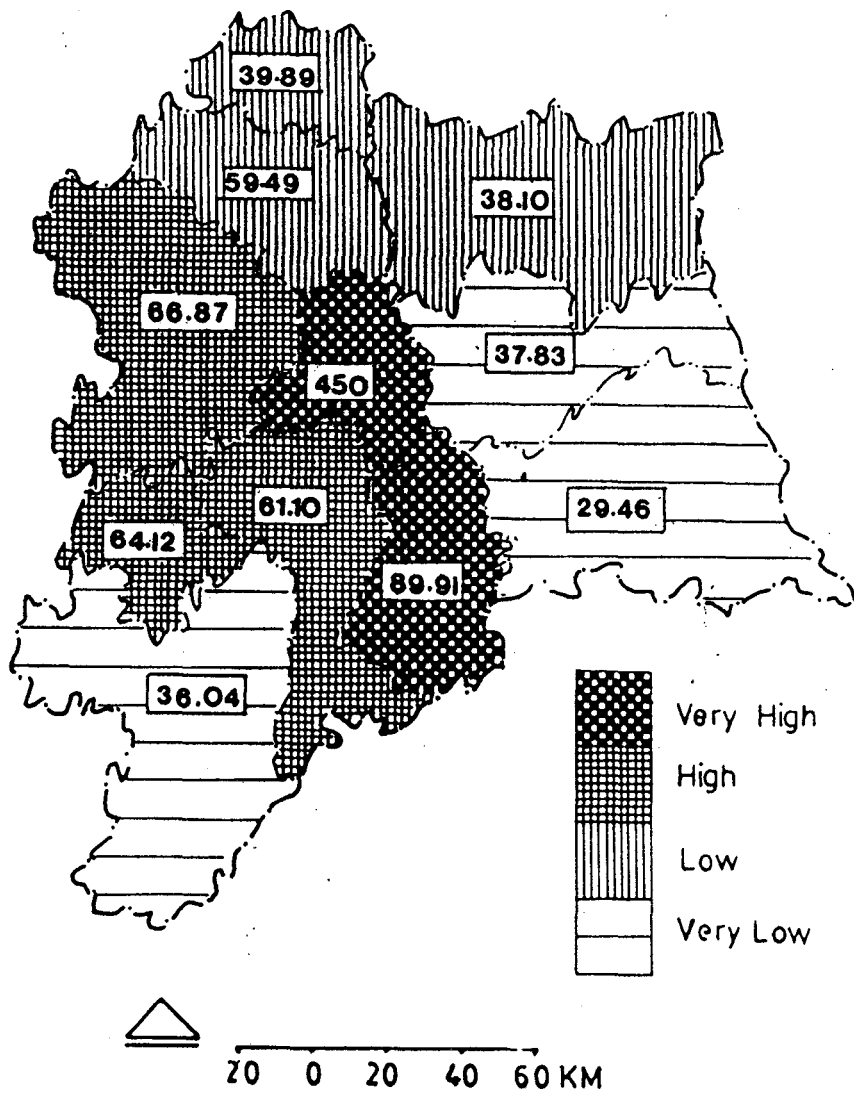
NCR URBAN LITERACY RATE (1981)



MAP 47

NCR

PERCAPITA EXPENDITURE - FOR URBAN AMENITIES 1981 (IN RS.)



MAP 4-8

5 per cent level of significance. It means, increase in the male WPR in urban manufacturing sector (X_3) causes an increase of 72.80 per cent in urbanward male migration. Meanwhile, WPR in primary sector has inverse correlation with urbanward male migration. If there is an addition of workers in this sector male migration rate decreases about 65.90 per cent in urban areas. Remaining variables are correlated with dependent variable at above 10 per cent level of significance.

Selection II

In this selection, percentage of migrants among the urban female population is considered to be as dependent variable (Y) and other variables related to female population are as independents. Among the independent variables, work participation rate of urban females in other services (X_5), urban female literacy rate (X_6) and per capita expenditure for urban amenities have positive correlation with urbanward female migration rate. Remaining variables are inversely correlated with dependent variable. Correlation coefficients of these variables are not significant even at 10 per cent level (Table 4.3). Because, their migration rate is more or less regulated by the factors of marriage and family movement (about 81.36 per cent) rather than economic reasons.

Stepwise Multiple Regression Analysis

The analysis of stepwise multiple regression is useful to ascertain as to how much the dependent variable gets change

when the independent variables are added one by one. From Table 3.4, one can easily understand the contribution of added explanatory variables on the proportion of migrants among the urban male population by examining the column of ΔR^2 . Same time, it also helps to know whether the new variable is worth including in the model or not by examining the column of \bar{R}^2 . Selection of explanatory variable for each step is based on the value of coefficient of determination (R^2). In the first step, the explanatory variable which has the maximum R^2 value is selected for regression analysis. In the second step, the variable which has the next highest value of R^2 is added in the previous regression equation. Likewise the variables are added one by one and the entire analysis is carried out for each step. In the present study, the analysis is carried out only for urbanward male migration. Because, in India female migration almost (about 82 per cent) depends on male migration. Secondly, the selected explanatory variables for explaining female urbanward migration have high rate of inter correlation among themselves. It is in contrast to the basic assumption of multiple regression analysis, i.e. there is no linear relation between any of the explanatory variables.

The result of stepwise multiple regression analysis (Table 4.4) describes that work participation rate (WPR) of

male population in urban manufacturing sector (X_3) has the maximum influence on the urbanward inflow of male population followed by WPR in urban primary sector (X_2), in infrastructural activities (X_4), in other services (X_5), percentage of urban population in the total male population (X_1), urban literacy rate (X_6) and per capita expenditure for urban amenities (X_7). However, the contribution of variables X_4 , X_5 , X_1 , X_6 and X_7 are very low in increasing the value of coefficient of determination. The study of \bar{R}^2 (coefficient of determination adjusted to degree of freedom), however, shows that though the contribution of WPR infrastructural activities (X_4) is low in the value of R^2 , it can be retained in the analysis, as it has not caused any change in \bar{R}^2 . The value of \bar{R}^2 decreases when other variables are added in this model after 3rd step. It shows that their contribution in increasing the value of R^2 is not strong enough to counter balance the reverse effect on the explanatory power of the model which is regulated by the degree of freedom $n-k$.

The regression coefficients from step one to three show consistently significant values for male work participation rate in manufacturing, primary and infrastructural activities at 5 per cent level of significance. The F value for analysis of variance is also significant up to step three.

Thus, the relationship as given in step three ($\bar{R} = 0.720$) may be identified as an optimal fit in this model. It means, by the effect of these three economic variables, 72 per cent variation may occur on the inflow of urbanward male migration in NCR.

An important point to note at this stage is that the analysis moves from step 5 onwards, the sign of the regression coefficients of supplementary variables, i.e., X_1 , X_6 and X_7 have changed from the sign of correlation coefficients. It is because of the problems of 'multicollinearity'⁴ among the independent variables X_1 - X_7 and X_2 - X_6 . The correlation coefficients among these variables are 0.918 and -0.779 (Table 4.2). It may affect the result of multi-variable analysis unless and until other statistical analysis are done to overcome the problem. However, because of some technical problems it is not carried out in the present study.

Conclusion

The analysis of spatial distribution of socio-economic variables indicates that almost all of these variables are concentrated at Delhi followed by Faridabad district. Faridabad

4. Multicollinearity refers to the condition of explanatory variables that are assumed to be nonstochastic in nature. It is the future of the sample and not of the population.

becomes an important centre in this region after Union Territory of Delhi. The results of correlation coefficients describe that an increase in the work participation rate of male population in manufacturing activities with the lessening of primary activities in urban centres attract large number of workers from outside areas. Urban literacy rate (X_6), per capita expenditure for public amenities (X_7) and proportion of urban population among the total male population (X_1) also accelerate urbanward inflow of male population. However, its contribution on the total migration is not as much significant as variables X_3 and X_2 . In the case of female migration, increase of female WPR in other services, literacy rate and per capita expenditure for urban amenities have little influences. They are positively correlated with urbanward female migration. The analysis of stepwise multiple regression reveals that the contribution of manufacturing, declining primary activities and infrastructural activities together may cause 72.0 per cent positive variation on urbanward male migration. It is the maximum attractive power of NCR urban centres according to this model. The present analysis is, also, not free from the problems of multicollinearity which distorts the analysis at certain level.

Table 4.1

INDICATORS OF SOCIO-ECONOMIC DEVELOPMENT, NCR 1981

Districts/ Tehsils	Percentage of Migrants Among Urban Population (Y)		Percentage of Urban Population in the Total Population (X ₁)		Urban WPR in Primary Sector (X ₂)		Urban WPR in Manufacturing Section (X ₃)	
	Male	Female	Male	Female	Male	Female	Male	Female
Delhi	49.40	48.39	92.74	92.72	0.74	0.06	16.40	1.03
Rohtak	35.19	53.21	19.92	19.72	2.29	1.13	10.27	0.47
Gurgaon	36.04	54.13	19.99	19.83	5.90	0.78	11.17	0.41
Sonipat	41.13	52.34	18.10	17.79	4.57	0.57	15.02	0.51
Faridabad	53.51	59.60	42.00	39.37	3.64	0.58	28.37	1.20
Karnal	41.83	52.85	25.98	26.41	5.91	0.90	16.10	1.38
Bawal & Rewari	23.08	51.48	13.40	12.71	5.86	1.57	11.74	1.10
Meerut	23.95	41.09	30.96	31.54	8.89	0.58	12.84	0.62
Ghaziabad	39.89	54.11	34.32	33.90	4.21	0.25	17.74	0.86
Bulandshahr	15.14	46.24	19.17	19.53	9.90	0.54	11.70	0.57
Alwar	16.34	25.73	30.96	31.54	4.32	1.63	10.76	1.18
NCR	43.19	48.30	47.93	46.60	2.62	0.12	6.42	0.42

Table 4.2

CORRELATION MATRIX OF SELECTION I

Variable	Y	X ₁	X ₂	X ₃	X ₄	X ₅	X ₆	X ₇
Y	1.00							
X ₁	0.515	1.00						
X ₂	-0.659**	-0.574	1.00					
X ₃	0.728**	0.377	-0.291	1.00				
X ₄	0.031	0.164	-0.415	-0.418	1.00			
X ₅	0.108	0.461	-0.249	-0.088	-0.086	1.00		
X ₆	0.458	0.189	-0.779*	-0.047	0.587	0.082	1.00	
X ₇	0.486	0.918*	-0.614*	0.181	0.453	0.453	0.328	1.00

Note : *Significant at 1% level of significance.

**Significant at 5% level of significance.

Table 4.3

CORRELATION MATRIX OF SELECTION II

Variable	Y	X ₁	X ₂	X ₃	X ₄	X ₅	X ₆	X ₇
Y	1.00							
X ₁	-0.066	1.00						
X ₂	-0.415	-0.558	1.00					
X ₃	-0.120	0.318	0.227	1.00				
X ₄	-0.006	0.921*	-0.447	0.242	1.00			
X ₅	0.279	0.505	-0.352	-0.145	0.705**	1.00		
X ₆	0.374	0.357	-0.050	0.117	0.615**	0.853*	1.00	
X ₇	0.064	0.918*	-0.466	0.117	0.971*	0.619**	0.534	1.00

Note : *Significant at 1% level of significance.

**Significant at 5% level of significance.

Table 4.4

RESULT OF STEPWISE MULTIPLE REGRESSION ANALYSIS

Variable	Regression Co-efficient	S.E. of Regression Co-efficient	Computed T. Value	Co-efficient of Dittermination R^2	ΔR^2	\bar{R}^2	F. Value for Analysis of Variance
Step 1 X_3	1.83	0.569	3.185**	0.530	-	0.530	10.144**
Step 2 X_3	1.46	0.462	3.160**	0.748	0.218	0.720	11.878*
X_2	-2.387	0.907	-2.632**				
Step 3 X_3	1.876	0.644	2.912**	0.776	0.028	0.720	8.086**
X_2	-1.634	1.218	-1.341				
X_4	1.081	1.155	0.935				
Step 4 X_3	2.122	0.750	2.830**	0.794	0.018	0.706	5.777**
X_2	-1.081	1.477	-0.732				
X_4	1.539	1.356	1.135				
X_5	0.763	1.059	0.720				
Step 5 X_3	2.402	0.961	2.501**	0.805	0.011	0.675	4.120
X_2	-1.096	1.575	-0.696				
X_4	1.913	1.611	1.187				
X_5	1.213	1.416	0.856				
X_1	-0.098	0.186	-0.526				

Contd...

Table 4.4. Contd...

Variable	Regression Co-efficient	S.E. of Regression Co-efficient	Computed T.Value	Co-efficient of Dittermination R ²	ΔR^2	\bar{R}^2	F.Value for analysis of Variance
Step 6	X ₃	2.475	1.161	2.132	0.806	0.001	2.769
	X ₂	-1.370	2.442	-0.561			
	X ₄	2.116	2.191	0.966			
	X ₅	1.309	1.687	0.776			
	X ₁	-0.124	0.264	-0.471			
	X ₆	-0.134	0.832	-0.161			
Step 7	X ₃	2.612	1.935	1.350	0.807	0.01	1.787
	X ₂	-1.360	2.817	-0.483			
	X ₄	2.600	5.539	0.469			
	X ₅	1.573	3.320	0.474			
	X ₁	-0.065	0.675	-0.097			
	X ₆	-0.191	1.125	-0.170			
	X ₇	-0.018	0.186	-0.098			

Note : *Significant at 1% level of significance.

**Significant at 5% level of significance.

SYNTHESIS AND POLICY IMPLEMENTATION

Synthesis

An overall analysis of migration data since 1961, reveals that proportion of migrants to the total population is high in the National Capital Region (NCR) of India than India as a whole. During the period of 1961, 1971 and 1981 censuses 40.22 per cent, 34.85 per cent and 34.95 per cent of the total population of NCR were enumerated as migrants respectively. While in India, they had accounted for 33.0 per cent in 1961, 30.40 per cent in 1971 and 30.70 per cent in 1981. Among other sub-units of NCR, the percentage of migrants to the total population is high in Union Territory of Delhi; i.e., 61.61 per cent in 1961, 49.87 per cent in 1981. The number of short distance migrants are more in Uttar Pradesh (63.73 per cent) sub-region and low in the sub-region of Delhi (8.51 per cent). The long distance migrants are accounted for 79.17 per cent of the total migrants in Delhi sub-unit while they have been accounted for 45.58 per cent in NCR. Rural to urban migration stream accounts above 60 per cent of the total migration in all districts of NCR except in Delhi. It is characterised by female migration. The sex ratio among the rural-ward migrants are favourable to female population. They outnumber the males by 2205, 4018 and 5077 per 1000 during the year of 1961, 1971 and 1981 respectively.

Migration growth rate in NCR during the period of 1961-71 and 1971-81 were 15.01 per cent and 35.74 per cent respectively. The sub-regional level, in 1961-71 decade, the highest growth rate is observed in Haryana (24.89 per cent). Meanwhile, in 1971-81 decade, it has noticed in Union Territory of Delhi (45.46 per cent). Eventhough rural-ward migration growth rate is continuously declining in the sub-units of Haryana and Delhi it has been showing an upward trend in the remaining constituents of NCR. Although urban-ward mobility is increased in Haryana and Uttar Pradesh sub-regions, Delhi still holds more than two third of the total urban migrants of NCR. In Delhi, the percentage of urban male migrants to the total population is decreasing during these periods. However, in absolute terms, they are aggradi-sing from 8.77 lakhs in 1961 to 10.66 lakhs in 1971 and 15.69 lakhs in 1981. Urban to urban migration stream which has seemed to be prompt during the period of 1961-71 is decreased in 1971-81 all over the region.

In the case of Delhi bound migration, following characteristics are identified. They are: (i) neighbouring states namely, Uttar Pradesh, Haryana, Punjab, Rajasthan and Madhya Pradesh together contribute 81.12 per cent of the total inflow of Delhi. (ii) Around 70.27 per cent of the total inflow into Delhi is originating from the poorer states

whose per capita income is less than Rs.1500; (iii) Intra-censal migrants are more in number (53.15 per cent) than the intercensal migrants (42.43 per cent); (iv) Employment and Family movement are the two major reasons for the immigration into Delhi urban areas; (v) Among the employment-migrants more than 90 per cent are male population; especially in the age group of 15-29 years; (vi) female migration seems to be the congregation of marriages and family movements. They together respond 81.36 per cent of the total female migration; (vii) Literacy rate among the employment migrants (66.88 per cent) is higher than the urban literacy rate (62.60 per cent); (viii) Among the current employment-migrants literacy rate and educational attainment are less than the intra-censal and intercensal migrants; (ix) work participation rate is high among the life time employment migrants (89.80 per cent) than as current migrants (86.59 per cent); (x) Rural to urban stream of employment-migration has high work participation rate (91.60 per cent) than as urban to urban stream of migration (87.85 per cent); (xi) Female work participation rate and duration of migration are inversely correlated each^{to} other; (xii) Unmarried people are more among the current male migrants (48.42 per cent) than as current female migrants (33.14 per cent); (xiii) Unmarried male migrants are found to be more in the age group of 15-29 years (49.20 per cent) than the age group of 0-14 years (48.12 per cent).

Identification of causal relationships among the urban development indicators and urbanward migration are carried out through the analysis of correlation coefficients. The results of the analysis can be summarised as follows: (i) work participation rate in urban primary sector is inversely related with the urban-ward migration at a higher rate; (ii) male work participation rate in urban manufacturing sector has high positive correlation with urbanward male migration; (iii) the variables like, percentage of urban population among the total female population, female WPR in urban primary, manufacturing, infrastructural and other service sectors, urban female literacy rate and per capita expenditure for urban amenities have not much influence in the urbanward female migration. Because, it is more or less associated with male migration.

The result of stepwise multiple regression analysis says that work participation rate in urban manufacturing sector declining primary sector and infrastructural activities have the maximum influence (around 72 per cent) in the urbanward male migration.

Nature of the Hypotheses

(1) The sex ratio among the urbanward migrants are favourable to male population, is proved. In urbanward migration, females are less numbered than males by 750, 754 and 789 per

1000 population respectively in the year 1961, 1971 and 1981.

(2) Less developed states are sending more number of migrants to Delhi, is proved.

(3) Female migration is mainly consequent to marriage or movement of family as a whole, is proved.

(4) Current employment-migrants have high literacy rate than old migrants, is disapproved.

(5) Highly educated people are more among the current employment-migrants, is disapproved.

(6) Work participation rate is high among the urban to urban employment-migrants, is disapproved.

(7) District which has high work participation rate in urban 'other service' sector, is receiving large number of migrants, is partially proved. It is because of the multicollinearity problems among the independent variables of stepwise multiple regression analysis.

Evaluation of NCR Draft Regional Plan 2001

The population of Delhi has been growing at ^avery high rate since it became the national capital. It adversely affects the overall quality of life in the city by extreme congestion and proliferation of slums, inadequate supply of essential urban services and the raise of water and air

pollution level beyond the accepted international standards for health and efficiency. To curb these problems, government has decided to expand the planning areal unit beyond the limit of the Union Territory of Delhi and decentralisation of certain economic activities to the surrounding towns. The National Capital Region Planning Board (NCRPB) was constituted to prepare and oversee the implementation of long term regional development policies to achieve the objectives of balanced development around Delhi, in 1961, by the Government of India in the nature of an advisory board with the Union Minister of Home Affairs as its Chairman. This Board was subsequently reconstituted in 1973 under the chairmanship of Works and Housing Minister with the Chief Minister of Haryana, Rajasthan, Uttar Pradesh and Lt. Governor of Delhi and other senior officials as members. Finally, the National Capital Region Planning Board Act, 1985 was passed by the Parliament in January, 1985 after the State Legislatures of Haryana, Rajasthan, and Uttar Pradesh had passed resolutions for setting up the Board. With the passing of the Act by the Parliament the processes of setting up the NCRPB is completed. The NCR includes besides the Union Territory of Delhi, three districts of Uttar Pradesh, four districts and three tehsils of Haryana State and six tehsils of Alwar district of Rajasthan state.¹ The organisation

1. For more details see the introduction chapter.

structure of NCRPB for implementing the development programmes and policies is schematically illustrated in the Figure 2.

Objectives and Goals of NCR Plan

Planning for NCR has two principal objectives and goals each. They are as follows:

Objectives

- (1) To reduce the rapid growth of economic activities and of population in the Union Territory of Delhi by directing the growth outside it; particularly to other towns of NCR and
- (2) To ensure provision of minimum standards of essential services to the urban and rural populations of the NCR through expansion and improvement of various physical and social infrastructures.

Goals

- (1) Evolving harmonised policies for control of land use and development of infrastructure in the NCR so as to avoid any haphazard development of the region, and
- (2) Achieving a manageable Delhi by 2001 A.D.

NCR Draft Regional Plan (DRP) has outlined same policy measures and development programmes to achieve these objectives and goals. They are:

- (1) Administrative sanctions;
- (2) Fiscal incentives and disincentives;

PROPOSED ORGANISATIONAL STRUCTURE
FOR IMPLEMENTATION

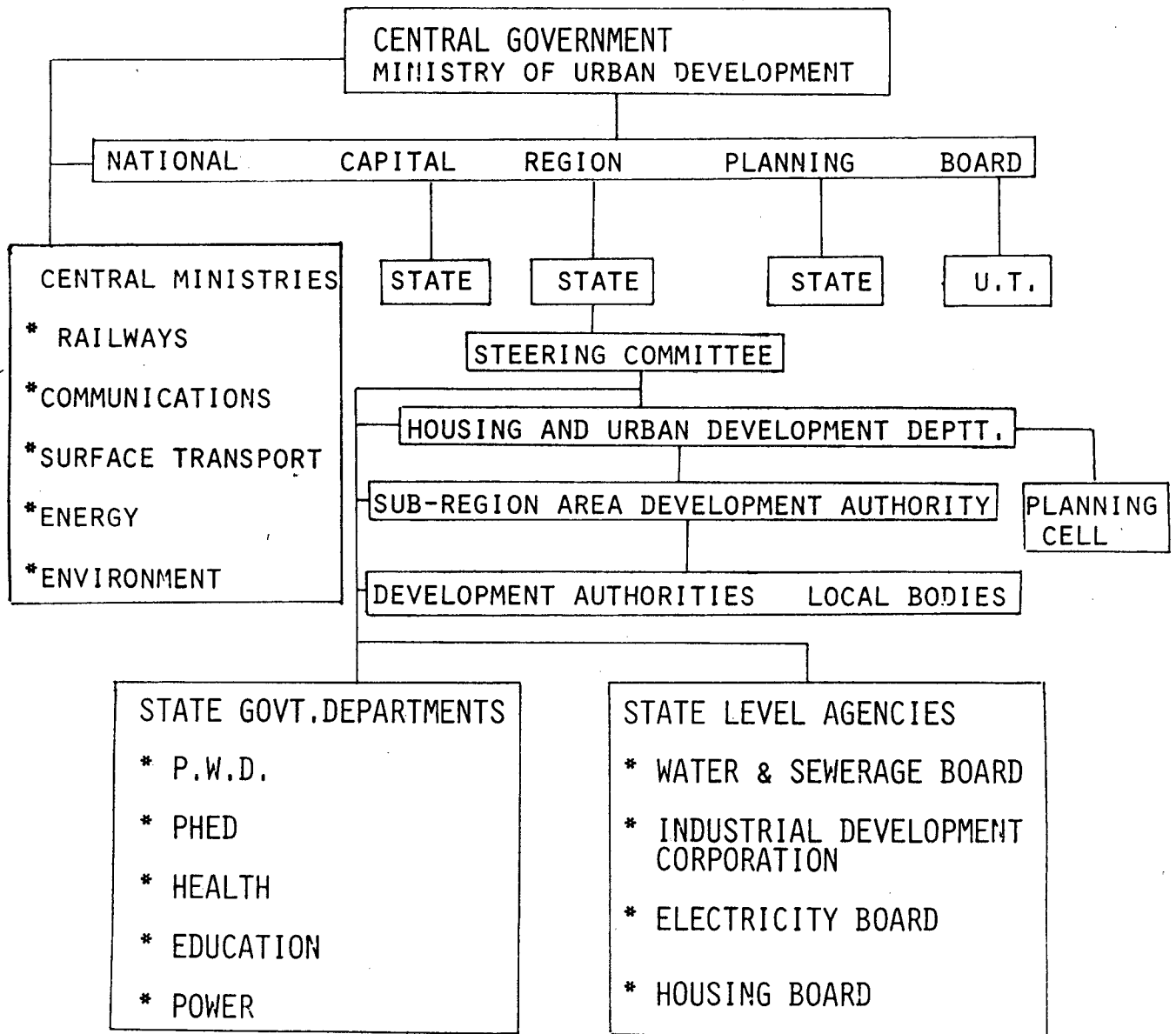


FIGURE - 2

SOURCE : DRAFT REGIONAL PLAN 2001, NCR

- (3) Programmes of landuse and development;
- (4) Expansion of physical and social infrastructures;
- (5) Improvement of communication links between the towns and the Union Territory; and
- (6) Programmes to provide the minimum standards of essential services to the population of NCR projected for 2001.

For the first phase of implementation of these programmes NCRPB has selected eight towns,² within NCR but outside the Delhi Metropolitan Area (DMA) at a priority level through the decentralisation of economic activities from the core region. This is to be achieved through strict enforcement of the accepted policies and criteria for location of offices in Delhi, viz.,

- (1) "that they perform ministerial functions, protocol functions or liaison functions which by their nature, cannot be performed anywhere else except in the National capital. The existing offices which do not perform any of the above functions should be identified and shifted from Delhi. In the case of public sector offices, there is an urgent need to scrutinise the list of existing offices and allow them to retain only very small establishments to cater for corporate

2. Priority towns are (1) Meerut, (2) Hapur, (3) Bulandshahr-Khurja, (4) Panipat, (5) Rohtak (6) Palwal (7) Rewari-Dharuhera-Biwadi and (8) Alwar.

and liaison functions. The rest of the establishments should be shifted out of Delhi..."³

(2) "...A similar control on the opening of new central government and public sector offices in the DMA towns should be exercised".⁴

(3) "The offices of public sector undertakings which dealt with the northern region and are functioning in Delhi ...should be located in other towns of NCR".⁵

(4) In order to accelerate the processes of shifting of existing offices from Delhi to other surrounding cities provide incentives, such as house rent, city compensatory allowances etc. available to employees in Delhi should be given to the employees who may be affected by this shifting for a limited period.

(5) Incentives and concessions and infrastructure should be made available in the regional towns to encourage and accelerate the growth of trade.

(6) To increase the efficiency of rail and road traffic coordinate various transport authorities and modes in the Region by way of creation of unified metropolitan transport authority for the entire Region.

3. National Capital Region Planning Board, Draft Regional Plan 2001 National Capital Region, NCRPB, Ministry of Urban Development, Government of India, 1987; pp.8-12.

4. Ibid.

5. Ibid.

Dispersal of manufacturing industries is to be achieved by:

- (1) Continuing the present policy of not promoting location of medium and large scale industries within Delhi, and restricting location of even small scale industries to those employing 20 or less persons, and required either for providing or servicing the consumer needs of Delhi's population.
- (2) No large-scale or medium-scale industries should be permitted to be set up, also in the DMA.
- (3) The towns selected for priority development should have a strong industrial content, and incentives should be given for location of large, medium and small scale industries in them by developing industrial estates in these towns. In addition to these towns, there should be no restrictions on the growth of industries in the region except in the areas reserved for conservation.

Drawbacks of the Plan

- (1) The thrust of the policy measures is on encouraging the shifts through a system of administrative checks and fiscal incentives and disincentives. The DRP gives particular emphasis to the latter for promoting dispersal of manufacturing industries and the distributive trades outside the union

territory. It will hamper the revenue of concerned state governments and local self governments.

(2) It does not provide the estimate costs of programmes and projects. Also there is no indication of the financial commitment that approval of the NCR plan will involve for the central government or the state governments.

(3) Incentives which are given to the employees of Delhi should be extended to all the employees of NCR towns to which the offices are shifted or located; not only for a limited period to the employees who may be affected by this shifting. Otherwise, there will be a wide gap in between the daily expenditure of employees working in Delhi and other NCR towns. It may compel the skill labourers to outmigrate to other metropolitan cities.

(4) Allowing the industries to establish anywhere else in the region except in the areas reserved for conservation is contradicting with policies for controlling air and water pollutions, especially with the case of location of industries which have high pollution level.

(5) It does not contain any programmes or policies focused on assisting the urban poor.

An overall review of proposed Draft Regional Plan gives some doubts about the implementation of plan from the

concerned state governments' side. Because, it needs large amount of public investment. This amount is, surely, much larger than the averages for the other areas of Uttar Pradesh, Rajasthan and Haryana states. The areas of Uttar Pradesh, Rajasthan and Haryana, which fall in NCR are already much developed and richer than any other parts of the states. Thus the governments may not be willing to continue the favoured treatment for relatively developed region. Secondly, there is a strong reluctance and political pressure against the large central allocation of resources for NCR areas in other state governments, particularly the states which have metropolitan cities and need huge amount of resource mobilization for its development.

Interference of NCR Plan with Present Study

1. The present study of population mobility pattern in NCR shows that the diversion of population inflow into Delhi metropolitan city through the development of satellite towns around Delhi may not succeed in a long term period until and unless balanced regional development takes place both in the rural and urban areas of the neighbouring states as well as the remaining states of the country simultaneously with NCR. Otherwise, the number of migrants into the NCR towns will continue to increase.

2. The stimulus of development in the priority towns attracts large number of workers from neighbouring rural areas than the rate of employment generation in these towns. The over flow of migrants and diffusion of information about the existing employment opportunities in the metropolitan city may cause more number of urban to urban migration into Delhi than as NCR plan visualises for the coming years.

3. Even if the dispersal of industries takes place into the surrounding towns of Delhi, the long distance migration, especially from the states of Bihar, West Bengal, Kerala etc., will continue to increase in the future if past trend continues to operate. The reasons behind this are: (a) the other NCR towns are not directly connected with remaining parts of the country and (b) the people who intend to migrate from these distant parts of the country do not possess enough information about the existing employment opportunities in this region other than those in Delhi. If the classified informations about the employment opportunities which exist in all NCR towns are advertised all over the country through the major mass medias may help to decrease the rate of employment-migration into Delhi.

4. Because of a good network of surface-transportation system among the NCR towns and Delhi, people tend to stay

back in Delhi and commute rather than to settle down in their place of work. This substantially increases the pressure of population on Delhi.

5. Overall, the lure of big city plays an important role in the scenario of urban to urban spatial flow of population. The charms of the big city of this region shall continue all over the country, especially in the Indo-gangetic plain, eventhough the decentralisation of major economic activities takes place into the priority towns. This also substantially increases the urbanward inmigration of Delhi.

Annexure I

STREAMS OF MIGRATION - 1961-1981

Sl. No.	Districts/ Tahsils		1961					
			Intradistrict Migration		Interdistrict Migration		Interstate Migration	
			Male	Female	Male	Female	Male	Female
1.	Delhi	R-R	0.17	0.85	-	-	1.56	3.15
		U-R	0.04	0.09	-	-	0.06	0.10
		R-U	0.66	0.59	-	-	20.64	11.50
		U-U	3.09	2.91	-	-	11.96	10.05
2.	Gurgaon	R-R	5.62	33.49	0.85	4.98	2.82	17.91
		U-R	0.22	0.74	0.16	0.31	0.46	1.03
		R-U	1.36	1.99	0.68	0.54	1.27	1.72
		U-U	0.40	0.79	0.75	0.83	1.01	1.55
3.	Rohtak	R-R	5.03	35.98	1.94	14.33	2.47	7.40
		U-R	0.21	0.53	0.17	0.43	0.20	0.38
		R-U	1.77	2.10	0.74	1.02	0.70	0.58
		U-U	0.67	0.53	0.65	0.95	0.53	0.61
4.	Panipat	R-R	5.72	20.92	4.57	11.63	1.80	2.64
		U-R	0.31	0.74	0.39	0.51	0.19	0.22
		R-U	1.62	3.35	1.15	1.85	0.85	0.65
		U-U	0.55	0.77	0.76	0.97	0.51	0.59
5.	Meerut	R-R	19.47	27.64	2.33	10.33	0.56	1.79
		U-R	3.48	6.89	0.28	1.35	0.23	0.45
		R-U	2.80	3.05	2.68	1.96	1.26	0.72
		U-U	0.79	1.23	1.63	1.78	1.48	1.28
6.	Bulandshahr	R-R	4.30	44.20	2.04	24.81	0.32	2.48
		U-R	0.24	1.56	0.22	1.17	0.11	0.37
		R-U	2.66	3.74	1.10	2.37	0.27	0.29
		U-U	1.13	1.92	1.07	1.32	0.42	0.43
7.	Alwar	R-R	6.38	40.37	1.79	12.76	1.98	10.48
		U-R	0.40	1.04	0.20	0.62	0.37	0.74
		R-U	1.52	2.48	0.41	0.61	0.26	0.30
		U-U	0.29	0.43	0.38	0.63	0.41	0.56

Annexure I - Contd.

Sl. Districts/ No. Tahsils		1971					
		Intradistrict Migration		Interdistrict Migration		Interstate Migration	
		Male	Female	Male	Female	Male	Female
1. Delhi	R-R	0.19	0.81	-	-	1.83	3.05
	U-R	0.24	0.38	-	-	0.32	0.62
	R-U	0.18	0.24	-	-	21.93	13.11
	U-U	0.57	0.56	-	-	15.92	13.78
2. Gurgaon	R-R	5.43	30.86	0.74	5.00	26.41	4.55
	U-R	0.42	1.42	0.20	0.47	1.11	2.23
	R-U	0.70	1.99	0.47	0.50	3.05	2.53
	U-U	0.58	0.81	0.58	0.70	3.03	3.21
3. Rohtak	R-R	4.65	36.41	1.47	14.93	1.80	7.70
	U-R	0.27	1.15	0.21	0.76	0.43	0.88
	R-U	2.91	3.14	0.70	1.21	1.22	0.99
	U-U	0.43	0.66	0.63	1.00	1.41	1.53
4. Panipat	R-R	5.34	22.86	1.68	10.21	4.51	5.92
	U-R	0.52	1.23	0.26	0.62	0.65	1.35
	R-U	2.06	4.08	0.77	1.85	1.81	1.60
	U-U	0.51	0.52	0.57	0.91	0.33	3.17
5. Meerut	R-R	4.94	34.98	2.57	14.16	0.79	2.30
	U-R	0.44	2.01	0.48	1.12	0.49	1.28
	R-U	4.50	5.04	3.51	2.96	1.96	0.85
	U-U	0.97	1.78	2.10	2.53	1.56	1.91
6. Bulandshahr	R-R	3.74	46.02	1.88	26.28	0.34	2.26
	U-R	0.30	0.16	0.36	0.29	0.17	0.34
	R-U	2.57	4.49	1.14	2.45	0.14	0.16
	U-U	0.49	1.97	0.80	2.05	0.24	0.63
7. Alwar	R-R	6.73	43.80	1.16	11.64	2.43	10.37
	U-R	0.44	1.69	0.30	1.25	0.53	1.20
	R-U	2.13	2.78	0.48	0.58	0.53	0.39
	U-U	0.23	0.38	0.45	0.72	0.50	0.75

Annexure I - Contd.

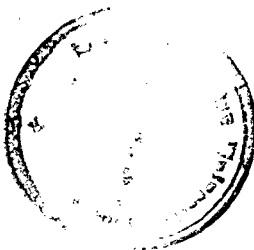
Sl. No.	Districts/ Tahsils		1981					
			Intradistrict Migration		Interdistrict Migration		Interstate Migration	
			Male	Female	Male	Female	Male	Female
1.	Delhi	R-R	0.08	0.43	-	-	1.46	2.45
		U-R	0.12	0.34	-	-	0.21	0.27
		R-U	0.14	0.24	-	-	25.42	16.64
		U-U	1.89	1.77	-	-	16.57	15.58
2.	Gurgaon	R-R	3.47	21.85	1.92	18.92	2.54	16.25
		U-R	0.09	0.59	0.13	1.06	0.43	2.01
		R-U	1.97	2.14	1.78	3.00	1.68	2.37
		U-U	0.96	0.91	9.33	1.92	2.39	3.60
3.	Rohtak	R-R	3.69	25.87	2.75	23.98	2.13	6.58
		U-R	0.21	1.01	0.25	1.22	0.31	1.03
		R-U	3.11	3.29	1.77	3.15	1.45	1.41
		U-U	0.44	0.84	0.79	2.16	1.39	2.19
4.	Panipat	R-R	4.68	14.35	3.08	11.32	2.33	3.02
		U-R	0.23	0.77	0.30	0.70	0.40	0.54
		R-U	4.36	7.20	3.06	6.03	4.89	2.31
		U-U	0.78	1.04	1.53	1.99	3.52	2.92
5.	Sonapat	R-R	2.56	23.25	2.56	26.59	2.11	8.60
		U-R	0.08	0.71	0.18	1.57	0.37	1.56
		R-U	3.36	2.67	1.45	2.45	1.90	1.77
		U-U	0.24	0.35	0.85	1.70	1.93	2.33
6.	Rewari & Bawal	R-R	4.53	30.10	2.13	13.30	2.74	24.56
		U-R	0.28	1.32	0.23	0.90	0.78	2.09
		R-U	1.56	2.38	0.80	1.06	0.89	2.48
		U-U	0.18	0.84	0.51	1.12	0.62	2.00
7.	Faridabad	R-R	1.95	14.68	0.61	5.52	2.29	11.75
		U-R	0.09	0.74	0.07	0.29	0.33	1.45
		R-U	2.09	2.90	2.27	1.84	13.47	8.69
		U-U	0.54	0.84	1.43	1.58	7.66	7.54
8.	Meerut	R-R	2.66	29.26	2.20	20.15	0.46	1.78
		U-R	0.18	1.85	0.29	1.72	0.19	0.97
		R-U	4.52	6.44	3.51	5.40	0.52	0.64
		U-U	1.42	2.15	2.65	4.25	1.13	2.17

Annexure I - Contd.

Sl. No.	Districts/ Tahsils		1981					
			Intradistrict Migration		Interdistrict Migration		Interstate Migration	
			Male	Female	Male	Female	Male	Female
9.	Ghaziabad	R-R	1.78	13.87	3.23	23.31	0.86	2.80
		U-R	0.23	1.11	0.37	1.66	0.23	1.17
		R-U	3.63	3.62	8.07	8.66	2.07	1.53
		U-U	1.21	1.69	4.12	5.40	2.60	3.56
10.	Bulandshahr	R-R	3.40	39.28	1.62	25.34	0.23	1.43
		U-R	0.21	2.25	0.26	2.10	0.12	0.67
		R-U	2.55	5.76	1.36	3.50	0.18	0.22
		U-U	0.64	2.98	1.04	3.14	0.30	0.93
11.	Alwar	R-R	5.70	41.78	1.38	12.62	1.98	12.44
		U-R	0.41	2.20	0.31	1.58	0.37	1.58
		R-U	2.21	2.67	0.68	0.79	0.53	0.69
		U-U	0.38	0.61	0.37	1.00	0.68	1.27

Notes : 1. Figures are percentages to the total migrants of concern district/tahsil.

2. Migrants of Panipat, six tehsils of Alwar district Bawal and Rewari are estimated from concern district total migrants.



Annexure II

MIGRATION BY DISTANCE - 1961-1981

Sl. No.	Districts/ Tahsils	Intradistrict Migrants			
		Rural		Urban	
		Male	Female	Male	Female
<u>1961</u>					
1.	Delhi	0.21	0.95	3.80	3.55
2.	Gurgaon	6.20	34.23	1.75	2.79
3.	Rohtak	5.24	36.52	2.44	2.64
4.	Panipat	6.03	21.69	2.18	4.35
5.	Meerut	23.07	34.65	3.59	4.28
6.	Buland shahr	4.61	45.87	3.74	5.66
7.	Alwar	6.82	41.66	1.82	2.91
<u>1971</u>					
1.	Delhi	0.44	1.20	0.80	0.84
2.	Gurgaon	5.85	32.30	1.33	2.86
3.	Rohtak	4.92	37.57	3.38	3.85
4.	Panipat	5.86	24.10	2.60	5.04
5.	Meerut	5.39	37.00	5.51	6.83
6.	Buland shahr	4.04	46.20	3.07	6.52
7.	Alwar	7.17	45.59	2.40	3.19
<u>1981</u>					
1.	Delhi	0.20	0.80	2.03	2.02
2.	Gurgaon	3.57	22.45	2.93	3.04
3.	Rohtak	3.90	26.89	3.55	4.13
4.	Panipat	4.90	15.11	5.14	8.26
5.	Sonepat	2.66	23.96	3.61	3.03
6.	Faridabad	2.04	15.43	2.64	3.74
7.	Meerut	2.85	31.13	6.00	8.64
8.	Ghaziabad	2.22	15.03	4.86	5.33
9.	Buland shahr	3.62	41.64	3.19	8.74
10.	Alwar	6.15	44.21	2.61	3.30
11.	Rewari & Bawal	4.90	15.11	5.14	8.26

Annexure II - Contd.

Sl. No.	Districts/ Tahsils	Interdistrict Migrants			
		Rural		Urban	
		Male	Female	Male	Female
<u>1961</u>					
1.	Delhi	-	-	-	-
2.	Gurgaon	1.02	5.30	1.43	1.38
3.	Rohtak	2.10	14.78	1.39	1.97
4.	Panipat	4.97	12.14	1.91	2.83
5.	Meerut	2.62	11.71	4.32	3.80
6.	Bulandshahr	2.27	26.10	2.18	3.70
7.	Alwar	2.00	13.50	0.79	1.24
<u>1971</u>					
1.	Delhi	-	-	-	-
2.	Gurgaon	0.95	5.50	1.06	1.20
3.	Rohtak	1.68	15.69	1.34	2.23
4.	Panipat	1.94	10.83	1.35	2.77
5.	Meerut	3.05	15.28	5.64	5.51
6.	Bulandshahr	2.24	26.57	1.95	4.52
7.	Alwar	1.48	12.94	0.93	1.30
<u>1981</u>					
1.	Delhi	-	-	-	-
2.	Gurgaon	2.06	19.98	2.72	4.92
3.	Rohtak	3.00	25.20	2.56	5.32
4.	Panipat	3.39	12.03	4.60	8.03
5.	Sonepat	2.74	28.16	2.31	4.15
6.	Faridabad	0.69	5.81	3.71	3.43
7.	Meerut	2.49	21.91	6.21	9.71
8.	Ghaziabad	3.61	25.10	12.22	14.11
9.	Bulandshahr	1.90	27.51	2.41	6.64
10.	Alwar	1.71	14.33	1.29	1.81
11.	Rewari & Bawal	3.39	12.03	4.60	8.03

Annexure II - Contd.

Sl. No.	Districts/ Tahsils	Interstate Migrants			
		Rural		Urban	
		Male	Female	Male	Female
<u>1961</u>					
1.	Delhi	1.63	3.25	32.76	21.68
2.	Gurgaon	3.30	18.96	2.28	3.28
3.	Rohtak	2.67	7.80	1.23	1.20
4.	Panipat	1.99	2.87	1.37	1.24
5.	Meerut	0.83	2.25	2.74	2.00
6.	Bulandshahr	0.47	2.87	0.70	0.73
7.	Alwar	2.36	11.30	0.78	0.86
<u>1971</u>					
1.	Delhi	2.20	3.70	38.45	27.33
2.	Gurgaon	5.70	18.63	6.18	5.82
3.	Rohtak	2.23	8.60	2.72	2.58
4.	Panipat	5.19	7.29	3.57	3.45
5.	Meerut	1.30	3.59	3.55	2.79
6.	Bulandshahr	0.52	2.61	0.40	0.80
7.	Alwar	2.97	11.60	1.05	1.15
<u>1981</u>					
1.	Delhi	1.68	2.73	42.36	32.40
2.	Gurgaon	2.98	18.26	4.08	5.97
3.	Rohtak	2.45	7.61	2.85	3.61
4.	Panipat	2.74	3.58	8.44	5.26
5.	Sonepat	2.48	10.17	3.83	4.11
6.	Faridabad	2.63	13.20	21.22	16.27
7.	Meerut	0.65	2.76	1.68	2.84
8.	Ghaziabad	1.11	4.01	4.69	5.10
9.	Bulandshahr	0.36	2.10	0.48	1.16
10.	Alwar	2.36	14.10	1.23	1.99
11.	Rewari & Bawal	2.74	3.58	8.44	5.26

Annexure II - Contd.

Sl. No.	Districts/ Tahsils	International Migrants			
		Rural		Urban	
		Male	Female	Male	Female
<u>1961</u>					
1.	Delhi	0.16	0.10	16.98	14.93
2.	Gurgaon	1.31	1.07	8.40	7.30
3.	Rohtak	3.78	3.52	6.52	6.20
4.	Panipat	10.07	9.26	8.85	8.25
5.	Meerut	0.25	0.21	1.93	1.76
6.	Bulandshahr	0.41	0.24	0.25	0.23
7.	Alwar	6.80	5.73	0.75	0.68
<u>1971</u>					
1.	Delhi	0.14	0.10	13.35	11.45
2.	Gurgaon	0.94	0.78	5.30	4.82
3.	Rohtak	1.96	1.98	4.89	4.38
4.	Panipat	7.10	6.60	6.29	6.02
5.	Meerut	0.47	0.27	2.10	1.72
6.	Bulandshahr	0.03	-	0.34	0.19
7.	Alwar	3.53	3.29	0.82	0.59
<u>1981</u>					
1.	Delhi	0.07	0.04	8.42	7.25
2.	Gurgaon	0.34	0.24	3.32	3.14
3.	Rohtak	1.12	1.00	3.51	3.30
4.	Panipat	3.37	1.64	9.00	4.50
5.	Sonepat	0.83	0.79	3.80	3.37
6.	Faridabad	0.11	0.10	4.94	4.04
7.	Meerut	0.23	0.19	1.49	1.22
8.	Ghaziabad	0.10	0.05	1.38	1.08
9.	Bulandshahr	0.02	0.01	0.12	0.10
10.	Alwar	2.02	1.73	0.63	0.52
11.	Rewari & Bawal	3.37	1.64	9.00	4.50

- Notes : 1. Figures are percentages to the total migrants of concern district/tahsil.
2. Delhi does not possess interdistrict migrants.
3. Total migrants of Panipat, six tahsils of Alwar district and Bawal & Rewari district of Mahendragarh district are estimated from D table of Panipat, Alwar & Mahendragarh districts.

BIBLIOGRAPHY

Books

- Bhende, Asha A. and Kanitkar, Tara, Principles of Population Studies, Himalaya Publishing House, Bombay, 1985.
- Bose, Ashish, India's Urbanization 1901-2001, Tata McGraw-Hill Publishing Company Ltd., New Delhi, 1980.
- Bulsara, J.F., Problems of Rapid Urbanisation in India, Popular Prakashan, Bombay, 1964.
- Connel, John et.al, Migration from Rural Areas: The Evidence from Village Studies, Oxford University Press, New Delhi, 1976.
- Cullen, Ian., Applied Urban Analysis: A Critique and Synthesis, Methuen and Co. Ltd., London, 1984.
- Demko, George J. (ed.), Population Geography: A Reader, McGraw Hill Book Company, New York, 1970.
- Duncan, O.D. and Houser, P.M. (eds.), Study of Population: An Inventory and Appraisal, Chicago University Press, 1959.
- Gore, M.S., Inmigration and Neighbourhoods: Two Aspects of Life in a Metropolitan City, Tata Institute of Social Sciences, Bombay 1970.
- Herrick, Bruce H., Urban Migration and Economic Development in Chile, The M.I.T. Press for Massachusetts Institute of Technology, London, 1965.
- Jackson, J.A., Migration, Cambridge University Press, 1967.
- Kamble, N.D., Migrants in Metropolis: A Study of Madras Metropolis, Uppal Publication, New Delhi, 1982.
- Khan, Najma, Pattern of Rural Out-Migration: A Microlevel Study, B.R. Publishing Corporation, Delhi, 1986.
- Kmenta, Jan, Elements of Econometrics, Macmillan Publishing Co. Inc., New York, 1971.
- Mahmood, Aslam, Statistical Methods in Geographical Studies, Rajesh Publications, New Delhi, 1977.

- Majumdar, Atreyi, Inmigrants and Informal Sector: A Case Study of Urban Delhi, Birla Institute of Scientific Research, Economic Research Division, New Delhi, published by Vision Book Pvt.Ltd., New Delhi, 1980.
- Mitra, A., Internal Migration and Urbanisation, Office of the Registrar General, Census of India, New Delhi, 1967.
- National Capital Region Planning Board, Interim Development Plan 2001 - National Capital Region, NCRPB, Ministry of Urban Development, Government of India, 1987.
- National Capital Region Planning Board, Draft Regional Plan 2001: National Capital Region, NCRPB, Ministry of Urban Development, Govt. of India, 1987.
- National Institute of Urban Affairs, Patterns of Migration in the National Capital Region, Research Studies Series No.17, NIUA, New Delhi, 1986.
- Oberai, A.S. and Manmohan Singh, H.K., Causes and Consequences of Internal Migration: Study in the Indian Punjab, Oxford University Press, New Delhi, 1983.
- Osaka City University: Institute for Economic Research, Rural Urban Migration and Pattern of Employment in India: An interim Report of the Socio-Economic and Socio-Linguistic Survey in Kanpur, Jullundur and Fatehabad, Osaka University, 1980.
- Premi, M.K., Urban Outmigration: Its Pattern and Characteristics of Outmigrants, Occasional Paper of CSRD, No.3, School of Social Sciences, Jawaharlal Nehru University, New Delhi, 1976.
- Premi, M.K. and Ton, City Characteristics, Migration and Urban Development Policies in India, Papers of East-West Population Institute, No.92, Honolulu, 1985.
- Rao, V.K.R.V. and Desai, P.B., Greater Delhi: A Study in Urbanisation 1940-1957, Institute of Economic Growth, Delhi, Asian Publishing House, Bombay, 1965.
- Sabot, Richard, H (ed.), Migrants and Labour Market in Developing Countries, Boulder, Westview Press, 1982.
- Todaro, Michael P., Internal Migration in Developing Countries: A Review of Theory, Evidence, Methodology and Research Priorities, International Labour Office, Geneva, 1976.

Towan and Country Planning Organisation, National Capital Region Report, 1971.

-----, Dominant Role of Delhi as a Distributive Centre: A Case for Decentralisation, A National Capital Regional Plan Study, 1969.

-----, A Diagnostic Study of Migration to Delhi, A National Capital Regional Plan Study, 1969.

United Nations, Methods of Measuring Internal Migration, Manual VI, Population Studies, No.47, New York, 1970.

-----, The Determinants and Consequences of Population Trends, Vol.I, Population Studies, No.5, New York, 1973.

-----, National Migration Surveys: Guidelines for Analysis, Economic and Social Commission for Asia and the Pacific New York, 1982.

Visaria, Pravin and Kothari, D, Data Base for the Study of Migration and Urbanisation in India: A Critical Analysis, Paper presented at the Bi-national Indo-Soviet Seminar on Problems of Migration in the Process of Urbanisation, Osmania University, Hyderabad, 18-23 September 1984.

Zacharia, K.C., A Historical Study on International Migration in Indian Subcontinent, 1901-1931, Asian Publishing House, Bombay 1964.

-----, Migrants in Greater Bombay (Demographic Training and Research Centre, Bombay), Asia Publishing House, Bombay, 1968.

Journals

Becker, Charles M. et.al, "Modeling Indian Migration and City Growth 1960-2000," Economic Development and Cultural Change, 35(1), October 1986, pp.1-33.

- Becker, Charles M, et.al, "Dynamics of Rural Urban Migration in India, 1960-81," Indian Journal of Quantitative Economics, 2(1), 1986, pp.1-43.
- Beyers, William B., "Migration and the Development of Multi-regional Economic System," Economic Geography, 56(4), October 1980, pp.320-34.
- Bhattacharay, Biswa N., "Changes in Structures of the Urbanisation of Big Cities in India: An Inter-Sectoral Comparative Analysis," Indian Journal of Regional Science 15(1), 1983, pp.1-18.
- Bible, Dauglas and Brown Lawrence, "Spatial View of Intra-Urban Migration Search Behaviour", Socio-Economic Planning Sciences, 14(1), 1980, pp.19-23.
- Bose, A., "Population Growth and Urbanisation and Industrialisation Process in India," Man in India, Vol.41 (October-December 1961), pp.255-75.
- Datta, Abhijit, "The National Capital Region Plan: A Policy Analysis," Nagarlock, Vol.XV (2), 1983, pp.27-33.
- Desai, P.B., "Economy of Indian Cities," Indian Journal of Public Administration, Vol.14 (July-September), 1968, pp.449-56.
- Feder, Gershon, "Alternative Opportunities and Migration," Annals of Regional Science, 14(1), March 1980, pp.1-ii.
- Galle, Omber and Taeuber, Kaul, "Metropolitan Migration and Intervening Opportunities," American Sociological Review, Vol.XXXI, February 1966.
- Gibbs, J.B. and L.F. Schnore, "Metropolitan Growth: An International Study," American Journal of Sociology, Vol.66, September 1960, pp.1960-70.
- Gill, Mehar Singh and Mohan Singh, "Migration to Indian Cities," Asian Profile, 14(3), June 1986, pp.233-47.
- Gist, Noel P., "Selective Migration in South India," Sociological Bulletin, Vol.4(2), 1955, pp.147-60.
- Gosal, G.S. and Krishan, "Pattern of Internal Migration in India," in Leszek et.al (eds.), People on Move, Methuen and Co. Ltd., London, 1975, pp.193-206.
- _____, "Internal Migration in India: A Regional Analysis", Indian Geographical Journal, Vol.36, 1961.

- Greenwood, M.T., "An Analysis of the Determinants and Internal Labour Mobility in India," Annals of Regional Science, Vol.5, 1977, pp.137-51.
- Jones, Richard C., "Role of Perception in Urban Migration: A Path of Analytic Model," Geographic Analysis, 12(1) January 1980, pp.98-108.
- Kubat, Daniel and Hoffmann, Nowotny, "Migration: Towards a new Paradigm," International Social Science Journal 33(2), 1981, pp.307-329.
- Mukherjee, P., "Understanding Canonical Analysis and Its Application Through Human Mobility Research," Geographical Review of India, Vol.41(31), 1979, pp.234-49.
- Muttagi, P.K., "Trends and Patterns of Migration in Metropolitan Cities: A Case Study of Greater Bombay," paper presented at the Indo-Soviet Seminar on Problems of Migration in the process of Urbanization, 18-23 September 1984, Osmania University, Hyderabad.
- Rao, C.R.Prasad, "Rural Urban Migration: A Clue to Rural Urban Relations in India," The Indian Journal of Social Work Vol.30(4), January, pp.335-42.
- Rawat, P.S. and Rawat, Rukma, "Rural Urban Migration Impact on the Villages," Eastern Anthropologist, Vol.39(2) 1986, pp.115-24.
- Sassen Koob, Saskia, "Economic Growth and Immigration in Venezuela," International Migration Review, Vol.13(3), February 1979, pp.455-74.
- Singh, J.P., "Population Mobility in India: Studies and Prospects," Sociological Bulletin, Vol.29(1), March 1980, pp.33-62.
- , "Distance Pattern of Rural to Urban Migration in India: A Comparative Over Review of Kerala and West Bengal," Man in India, 64(2), June 1984, pp.143-53.
- , "Educational Differentials in Cityward Migration in India," Man in India, Vol.67(1), 1987, pp.23-35.
- Sinha, V.M.P., "Migration: An Interdisciplinary Topic," Geographical Review of India, Vol.42(2); June 1980, pp.103-19.

Sonis, Michael, "Locational Pull Analysis of Migration Streams," Geographical Analysis, 12(1), January 1980, pp.80-87.

White, Stephen E., "Philosophical Dichotomy in Migration Research," Professional Geographer, 32(1), February 1980, pp.6-13.

Census of India

Census of India, 1961, Part II.A, General Population Tables Punjab, Rajasthan, Uttar Pradesh and Union Territory of Delhi.

Census of India, 1961, Part II.D. Migration Tables of Punjab, Rajasthan, Uttar Pradesh and Union Territory of Delhi.

Census of India, 1971, Part II.A, General Population Tables of Haryana, Rajasthan, Uttar Pradesh and Union Territory of Delhi.

Census of India, 1971, Part II.D., Migration Tables of Haryana Rajasthan, Uttar Pradesh and Union Territory of Delhi.

Census of India, 1981, Part II.A, General Population Tables of Haryana Rajasthan, Uttar Pradesh and Union Territory of Delhi.

Census of India, 1981, Part V, A & B, Migration Tables of Haryana, Rajasthan, Uttar Pradesh and Union Territory of Delhi.

