Migration, Urbanisation and Economic Development: Rajasthan in The All India Context (1961—1981)

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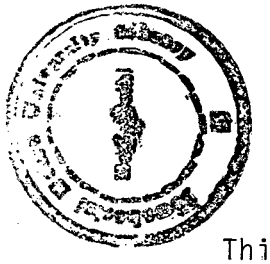

CERTIFICATE

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URBANISATION AND ECONOMIC DEVELOPMENT : RAJASTHAN IN THE ALL INDIA CONTEXT (1961-1981)" submitted by Shri Himmat Singh Ratnoo in fulfilment of six credits out of the total of twenty-four credits for the award of the Degree of Master of Philosophy (M.Phil) of the University is a bonafide work to the best of our knowledge and may be placed before the examiners for evaluation.

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C O N T E N T S

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CHAPTER I

INTRODUCTION

The classical economists had visualised the process of transfer of labour as generally frictionless which involves only cost of adjustments that was marginal in their analysis. They postulated that the forces of demand and supply will transfer labour from places where it was abundant to the places where employment was available at a higher wage rate. This was a part of their 'laissez-faire' thinking.

The "laws" of migration, as stated in Ravenstein (1885) and the "general" framework of migration analysis provided in Lee (1966)[1] indicate a built-in tendency for migration to increase over time both in absolute as well as in relative terms, with the levels of economic development. Their theoretical formulations have helped in deriving several simple and intuitively valid hypotheses. These however are of limited use in policy analysis because they do not specify the inter-relations between dependent and independent variables and do not help in deciding the quantitative importance of factors.

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1. Lee, E.S. (1966), "Theory of Migration", in Demography, No.1, pp.47-57.

It would be pertinent to take note of the neo-classical two-sector model, with automatic price-adjustment mechanism, allocation efficiency assumptions and full employment implications and also examine whether they provide answers to the questions that arise out of a concrete third world situation like that of India.

This model given by Lewis (1954)[2] and later formalised and extended by Fei and Ranis (1961)[3] postulates that the process of labour transfer as well as the growth of employment in the modern sector are brought about by the growth of output in the modern sector, and the speed at which these both occur is given by the rate of capital accumulation in the modern sector, which in turn depends on the excess of modern sector profits over wages. Although the Lewis-Fei-Ranis model is simple and it conforms to the western experience, it seems at variance with the realities of migration and underdevelopment in most of the contemporary third world countries.

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2. Lewis, W.A. (1954), "Economic Development with Unlimited supplies of Labour" in The Manchester School of Economic and Social Studies, May 1970, pp.547-54.

3. Fei, J. and Ranis, G. (1964), Development of the Labour Surplus Economy, Illinois. Passim

It has been observed that in several of the under-developed countries, even when capital and profits of the industry increase, employment and output remain constant. Moreover, the assumption of 'surplus' labour in rural areas and full employment in urban areas do not reconcile with the reality of open unemployment and no surplus labour in rural areas. Moreover, the assumption of constant wage also does not seem realistic.

In the Indian rural context 'Alagh-Bhaduri-Bhalla'[4] would support this kind of analysis. They argue that higher investment and concentration of modern agricultural inputs in a few pockets, and consequent productivity and wage differentials will attract migrant workers from other regions. This exclusive emphasis on wage-differentials and the assumption of full or near full employment, as implicit in neo-classical models, are unrealistic in the context of the institutional and economic structure in most of the third world countries.

In the case of India, for example, Dandekar and Rath (1971) note that the poorest ten per cent of

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4. Alagh, Y.K., Bhaduri, A. and Bhalla, G.S. (1978), "Agricultural Growth and Manpower Absorption in India", Labour Absorption in Indian Agriculture - Some Exploratory Investigation, International Labour Office, Bangkok.

urban areas are worse off than the poorest ten per cent of the rural areas.[5] Bardhan notes that during the sixties the percentage of people below even the barest minimum acceptable level of living had gone up by 40 per cent in India as a whole and by 143 per cent for Punjab and Haryana, the throbbing hearland of 'Green Revolution' and also that the real wage rate of agricultural labourers in these areas had gone down.[6] The results of the 27th, 32nd and 38th rounds of the National Sample Survey (N.S.S.)[7] show that male unemployment rates by current status, in urban areas are high and fast increasing as compared to those in the rural areas, and it may be observed that the rural male unemployment rates in many of the agriculturally developed states are fairly high as compared to the same for All India and also in comparison with the agriculturally backward States.

Now the question arises as to why people migrate, even when their joining the ranks of poor and

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5. Dandekar, V.M. and Rath, N. (1971), Poverty in India, Indian School of Political Economy, Poona. PP. 31-32

6. Bardhan, P.K. (1970), "Green Revolution and Agricultural Labourers", Economic and Political Weekly, vol.5, Nos.29-31, July 1970, pp.1239-46.

7. Central Statistical Organisation (India), Ministry of Planning (1983), Key Results of Last three Quenquennial N.S.S. Enquiries on Employment and Unemployment, 38th round, Jan.-Dec., Report No.135.

jobless at the place of destination seems quite likely? Why people migrate to urban areas on the face of worse misery prevailing there? Why should migrants go to the "Green Revolution" areas where poverty is increasing and wage rate declining? And how do the migration analyses reconcile the reality of high and fast increasing unemployment rates in urban areas compared to their rural counterparts and that of high unemployment rates in agriculturally developed states as compared to the agriculturally backward ones.

Harris and Todaro in their two-sector model[8] contend that migration proceeds in response to the urban-rural differences in expected earnings, which, they postulate, arise out of the provision of politically determined minimum wage in urban areas, with employment rate acting as an equilibrating force. Through this model they sought to explain what they called 'the curious phenomenon' of high level of rural-urban migration and even its acceleration on the face of positive marginal products in agriculture and increasing levels of urban unemployment, in the less developed countries. It was based on a model

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8. Harris, J.R. and Todaro, M.P. (1970), "Migration, Unemployment and Development: A Two-sector Analysis", American Economic Review, vol.60, March, pp.126-42.

of labour migration which was strictly concerned with the formulation of a theory of urban unemployment in the developing countries.[9]

Todaro also tries to give an 'empirically testable model' to explain, what he sees as a contradiction, massive and even increasing rural-urban migration, inspite of rising levels of unemployment and underemployment in many developing countries during the sixties.[10] He concludes that in the decision to migrate the individual has to balance the probabilities and risks of being unemployed or underemployed for a considerable period against a positive wage differential.

Basing himself on the more realistic situation of longer time horizons for potential migrants (especially in view of the fact that vast majority are between 15 and 24 years), Todaro argues that the decision to migrate should be represented on the basis of a "permanent income" calculation. He expects income to rise over time. As long as the present value of the net stream

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9. Todaro, M.P. (1969), "A model of Labour Migration and Urban Unemployment in Less Developed Countries", American Economic Review, vol.59, pp.138-48.

10. Todaro, M.P. (1976), Internal Migration in Developing Countries, International Labour Office, Geneva, p.25.

of expected urban income over the migrant's planning horizon exceeds that of the expected rural income, the decision to migrate would be taken and can be justified in terms of pure financial returns.

As opposed to wage-adjustment bringing the equilibrium (competitive model), Todaro argues that rural-urban migration itself must act as the ultimate equilibrating force with the assumption of inflexibility of urban wages downwards. He observes that rural-urban income equilisation can take place by decline in urban job probabilities, resulting from rising urban unemployment.

Ever since the publication of the celebrated paper by Harris-Todaro (1970), the "Expected Income Differential", has been the centre piece of migration functions incorporated in many analyses of the development problems in the less developed countries. The examples are the papers by Srinivasan and Bhagwati (1976) and Kaushik Basu (1980). However, the doubts about 'expected income differential' being the key variable in understanding the rural-urban migration for employment were raised by Sundaram (1983) who found negligible and falling migration of rural job seekers into urban India during 1963-64 to 1973-74 despite sizable and non-declining expected wage differentials,

in an analysis (based on 28th Round National Sample Survey on Internal Migration, 1973-74).[11] Kundu (1986)[12] highlights the slowing down of the inter-state mobility in India, specially for the male population, on the face of rising disparity in terms of per capita income and labour productivity. In the light of this trend, he cautions against the dangers of the policy of unbalanced development and the strategy of agricultural development which have accentuated horizontal as well as vertical inequalities. In fact, in a recent paper Sundaram[13] questions the very relevance, at least in the Indian context, of development models which postulate the transfer of workers from rural to urban areas as the principal mechanism of relieving the pressure of excess labour on land and thereby raising productivity and income in agriculture. This he argues on the basis of rural-urban migration for employment, as proportion of gross outflow of migrants, and also in relation to the growth of the rural work force. He suggests the

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11. Sundaram, K. (1983), "Rural-Urban Migration: An Economic Model and Indian Evidence," Mimeo., April 1983. Passim.

12. Kundu, Amitabh (1986), "Migration, Urbanisation and Inter-regional Inequality: The Emerging Socio-political challenge", Economic and Political Weekly, vol.21, No.46, Nov. 15, pp.2005-8.

13. Sundaram, K. (1986), "Agriculture-Industry Inter-relation: Issues of Migration", Invited paper for the World Economic Congress, New Delhi, Dec. 1-5.

possibility of other factors, like language and cultural differences or 'discontinuity' or 'break' in continuum, given by the concentration of rural and urban population at two extremes in terms of size of population settlements, as being dominant.

To understand the validity, or otherwise, of various conflicting formulations it is necessary to make a comprehensive and rigorous analysis of migration and the socio-economic factors operating behind it. As a matter of fact, in the present Indian context, the question of population mobility is intractably linked with the problems of assimilation of nationalities, obliteration of regional identities and elimination of ethnic, racial, caste and communal bigotary and discord which are assuming an historical importance.

The development of capitalism knows two historical tendencies. The first is the awakening of national life and national movements, the struggle against all national oppression and the creation of nation states. The second tendency relates to the development and growing frequency of international intercourse in every form, the breakdown of parochial barriers and hidebound national conservation. Lenin analysed the immigration satistics of the United States of America to give a rough idea of the scale which the general process of

assimilation of nations assumes under advanced capitalism.[14] He also dubbed as progressive the migration of peasants and workers from Great Russia to Ukraine, and the consequent assimilation, in the event of a well defined process of economic development which was taking place in Ukraine at that time.[15]

The all India united struggle of almost all nationalities against the colonial rule and the achievement of the political independence were expressions of the first tendency. The question whether the second tendency operates in India or not brings into focus the dialectics of economic development and migration in India which is the central point of many questions arising out of the present reality. Whether the growth of national discord and strife that is taking place in many of the third world countries in general, and India in particular, is reflected in the changes in the migration pattern. What are the forces that stand for discord rather than assimilation, and what are the forces that stand for genuine unity as well as independence of nationalities,

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14. Lenin, V.I. (1913), "Critical Remarks on the National Question", Prosveshchiniye, Nos.10, 11 and 12, Reprint by Progress Publishers in 1951, p.18.

15. Ibid., p.20.

regions and races, and other general categories, on a reasonable basis? What are the peculiarities of the Indian situation which set limits to the above noted historical tendencies of a developing capitalism?

Before one attempts the concrete questions of the political economy, the process of economic development, its regional pattern and peculiarities need to be studied in conjunction with the regional structure and pattern of migration in it. This is the overall objective which has guided our thinking on the topic.

The second chapter attempts to explore in detail the regional pattern of migration[16] and urbanisation and the peculiarities of spatial and temporal variations in it. It is an analysis for all India and also for all the states.

A detailed analysis of the migration scene, in all the class I cities of India for 1961 and 1971, and in all the metropolitan cities for the entire study period has been made separately. The dimensions of short distance versus long-distance migration and the rural-urban differences in them have been dealt

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16. Throughout the study, migration refers to the change of the place of birth and only the internal male population has been considered, unless otherwise mentioned.

with in entirety. The trends of different streams of migration - migrants of current and inter-censal period, and net inter-state migration - have been used to support the main arguments. The third chapter analyses the broad contours of the Indian economy in an attempt to understand the economic underpinnings of migration and also in order to be able to understand the complexity of spatial and temporal variations in migration and urbanisation in India. The inter-relation between the migration pattern and its socio-economic characteristics of the regions has been examined. The effort in the fourth chapter is to bring out the main results of the district-level analysis for Rajasthan in the all India context of migration, urbanisation and economic development. The fifth chapter briefly notes the main findings of the study.

CHAPTER II

THE REGIONAL PATTERN OF MIGRATION AND URBANISATION IN INDIA

INTRODUCTORY STATEMENT

If we have a general look at the migration scene in India (Table II.1), we find that the percentage of migrants in the male population, in rural as well as urban areas, declined throughout the sixties and seventies. The rural and urban male population increased by 23 and 37 per cent respectively during the sixties. The growth rates for corresponding migrant population were 10 and 16 per cent respectively. The gap of growth rates being wider in the case of urban areas, the percentage of migrants in urban population fell more sharply. In the next decade, there was a spurt in growth of migrants in urban areas but it was still lower than the growth of urban population. In the seventies, the growth of male population and male migrants in rural areas were 15 and 6 per cent respectively, the differential growth resulting in a steeper decline in the ratio of male migrants to male population in rural areas.

The growth of urban population during the seventies has been phenomenal and historic, in the sense that no other decade of the century has experienced such a high growth of urban population, except that 1941-51 recorded a slightly higher urban growth, which has been attributed

TABLE II.1

Pattern of Migration by P.O.B. and Growth Rates - 1961, 1971, 1981

Year	Population	Migrant population	Male population	Rural Male	Urban Male	Male migrants	Rural male migrants	Urban male migrants
1961	439.00	144.80 (33.0)	226.00	183.20	42.80	46.90 (20.7)	28.00 (15.3)	18.50 (43.2)
1971	548.00	166.8 (30.4)	284.00	225.30	58.70	52.70 (18.6)	30.80 (13.7)	21.40 (36.5)
1981	665.00	204.20 (30.7)	343.00	260.00	83.90	62.10 (10.1)	32.70 (12.6)	29.30 (34.9)
Growth Rate								
1961-71	24.83	15.19	25.66	22.98	37.15	12.36	10.00	15.68
1971-81	21.25	22.42	20.77	15.40	42.93	17.83	6.17	36.92

Note: 1. International migrants are included.

2. Figures in brackets are pecentages to the corresponding total population.

Source: 1. Census of India, 1961, Vol. 1, India, migration Tables, part II-(c)(iii) Table D-II.

2. Census of India, 1971, Ser. 1, India, Part II D(i) "Migration Tables" Table D-I.

3. Census of India, 1981, Ser. 1, India, "Reports and Tables Based on Five per cent data".

to the partition of India and inadequacies in the application of a uniform definition of urban place in 1951 census. The ratio of urban to total population (X_{18}) in India has continuously increased in the past two decades from about 18 per cent in 1961 to 20 per cent in 1971 to about 24 per cent in 1981, the increase during the decade 1971-81 being almost double of the same during 1961-71, both in absolute and percentage terms. The figures (Table II.6) show that a noticeable jump in the rate of increase in this ratio has taken place for all the states except Nagaland, Tripura, Tamil Nadu and Punjab where although the increase in this indicator is recorded, the rate of increase has gone down drastically in the case of first two, moderately in the case of the third and marginally in the case of the last. But urban growth cannot be accounted by rural to urban migration only.

Male migrations across all distances have been dealt at aggregate level and for long-distance and short-distance separately. Rural-urban differences regarding these and the distribution of migrants further in various streams have been discussed. The pattern of decline in migration, across all distances separately for the total, rural and urban population of India has been followed by a reference to the distribution of current and inter-

censal migrants in different streams.

A full discussion on the relative position of different states regarding migration levels and an analysis of the pattern of temporal changes in migration structure has been attempted in the all India context. The distribution of the volume of total internal male migration of India into different component, and categories and the changes in it over time and the situation prevailing in the states in this regard has also been discussed. A separate section on lifetime inter-state male out-migration and in-migration contains the state-level profile of lifetime inter-state out-migration from rural and urban areas and their growth rates, as also an analysis of the lifetime inter-state male net migration and the decadal rate of it for different states. The chapter ends with a detailed discussion on the migration scene in all class I cities of India in 1961 and 1971. The temporal changes in levels of lifetime male migration, as well as levels of lifetime interestate male migration in all the cities, and the growth rates of migrants, inter-state migrants and male population in them have been analysed in the context of sharp decline in migration levels and the urban specificness of the decline during 1961-71. For all cities and urban agglomeration with more than

one million population, an analysis for the entire study period is presented separately.

The rural-urban dimension along with the distance of migration have been examined in details in two ways - first, in relation to the size of population and second in relation to the volume of internal migration. The migrant-ratio in total population, the migrant-ratio in rural areas and the migrant-ratio in urban areas were calculated, each with respect to total internal migrants, inter-state migrants, and intra-district migrants.[1] Then each category of the migrants was calculated as percentage of the total internal migrants. The international migrants were excluded from the whole analysis so as to clear any doubts regarding the extent of decline caused by the death toll of a certain proportion of international migrants coming to India at the time of partition of the country, and also to neutralise the different proportions of international migrants in different states from affecting adversely the comparability of migrant ratios over time and space. In general, the exclusion of international migrants depresses the common denominator i.e. population, as also the total number of migrants, but

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1. Migrant ratio was defined as percentage of migrants in the male population. Terms 'migrant ratio' and 'migration ratio' have been used inter-changeably.

leaves unaffected the number of inter-state and intra-district migrants, so, this will suppress the migrant ratios w.r.t. total internal migrants and spurt those w.r.t. inter-state and intra-district migrants, depending on the size of international migration and population in rural and urban areas. (See Tables II.4 and II.5)

Migrant Ratios and Changes over the past two decades:

All India

In all types of migration in India (total internal migration, inter-state migration, intra-district migration) the ratio in urban areas is higher than rural areas for all the three points of time, which is quite understandable, though the difference has come down specially w.r.t. inter-state migration, mainly due to differential decline in the rural and urban ratios. It is also true for the states with a few exceptions (Table II.5). The difference of migrant ratios (X_3-X_2) is positive for all the states at all times, except for Manipur and Tripura in 1961 and 1971. In 1981, they also follow the all India pattern. The difference is greater for the backward states like Bihar, Orissa and Uttar Pradesh, and low for the developed states like Maharashtra, Karnataka and Delhi (See Figures 2.1 and 2.2). The same is true for inter-state migrants,

without any exception. In case of intra-district migrants the opposite (the ratio in rural areas being higher than that in urban areas) is true for Kerala, Maharashtra, Manipur, Tripura and West Bengal for three points of time, for Madhya Pradesh in 1961 and 1971, for Jammu and Kashmir in 1971 and for Delhi in 1981.

The inter-state migrant ratio is lower than the intra-district migrant ratio in the total male population of India, for all the three points of time under consideration. This statement holds for all the states except Delhi, where almost half the population is inter-state migrant, for all the three points. West Bengal was an exception to it only in 1961. This phenomenon of lower percentage of long-distance migrants than short-distance migrants in the population, holds good in rural areas also for the all India and for each state (except Delhi) for 1961, 1971 and 1981 separately. But in the urban areas of India, quite contrary to what prevails in its total and rural population, the inter-state migration ratio is distinctly higher than the intra-district migration ratio, except in 1981 when even in the urban areas the intra-district migration ratio was slightly higher than the inter-state migration ratio, the reason being

a sharper decline in the level of inter-state migration, than intra-district migration during 1971-81. The states which follow this all India trend of higher levels of long-distance than short-distance migrants in the urban population are Madhya Pradesh, Maharashtra, West Bengal, Delhi for all the three times. Assam, Haryana, Himachal Pradesh and Meghalaya follow this for the time points for which figures are available. In urban areas of Punjab and Nagaland also the inter-state migration levels have become higher than their intra-district migration levels since 1971.

The fact of lower ratios in rural than urban areas is further corroborated when we see that the share of rural to rural stream has gone down for migration of all distance - intra-district, inter-district and inter-state during 1961-71 (Table II.2). It is important to note that the growth rates of both rural to urban and urban to urban inter-state migrants is lower than the growth of urban population. Similarly, the growth rates of rural to rural, and urban to rural streams is less than the growth of rural population. These support the observation that ratios of inter-state migrants to urban population and inter-state migrants to rural population have declined over the past two decades. This table brings to attention two points. Firstly, slow growth of rural to rural migrants during

TABLE II.2

Percentage Distribution of Birth Place Migrants by Different Streams, and Growth Rates, 1961, 1971, 1981

Migration Streams	1961	1971	1981	Grwoth Rate of Migrants	
				1961-71	1971-81
Intra-District					
1. R - R	73.75	71.72	64.75	11.67	-6.12
2. R - U	16.58	17.58	21.33	21.75	33.75
3. U - U	5.54	4.60	7.12	-3.08	70.36
4. U - R	4.22	6.10	6.79	65.98	22.69
Percents to total migrants	54.44	53.58	49.33		
Inter-district					
1. R - R	42.13	37.22	32.66	4.80	18.57
2. R - U	32.86	33.11	34.80	19.52	42.05
3. U - U	19.48	22.03	24.79	34.15	52.09
4. U - R	5.54	7.64	7.74	63.59	36.96
Percents to total migrants	26.78	27.23	30.84		
Inter-State					
1. R - R	28.27	25.89	20.68	6.84	-1.20
2. R - U	41.72	39.36	41.97	10.07	31.91
3. U - U	25.94	28.58	30.47	28.54	31.91
4. U - R	4.07	6.17	6.02	16.86	20.80
Percents to total migrants	18.78	19.19	19.83		

Source:
1. Census of India, 1961, Vol. 1 India Migration Table, Part II-C (iii), Table DII.
2. Census of India, 1971, Ser 1 India, part II DC(i) Migration Tables, Table D1.
3. Census of India, 1981, Ser. 1 India, "Reports and Table-based on Five Per cent Data".

the sixties and an absolute decline in its number during the seventies. Secondly, the slow growth of rural to urban and urban to urban migrants across states, the rates being significantly lower than the corresponding intra-district and inter-district figures.

Continuous Decline in Migration Levels:

The above discussion portrays the differences regarding the level of migration (covering movements across all distances), long-distance migration (covering movements across states), and short-distance migration (movements within the district) observed in India's total population. However, the phenomenon of a continuous decline in migration levels in India, over both the periods is characteristic of all types of migration in its total rural and urban population separately, though the quantum and rate of decline may differ. (Table II.5). For example, during 1961-71 the urban migrant ratios of all types (X_3, X_6, X_9) fell more drastically than their rural counterparts (X_2, X_5, X_8). In the next decade 1971-81, however, the rural ratios recorded steeper declines than their urban counterparts, except the inter-state rural migration ratio (X^5) which despite a heavy decline was far behind its urban counterpart. It is to be noted that during 1971-81 the migration levels in rural areas, specially

the inter-state migration levels have suffered a far more severe decline than was witnessed during the previous decade. This urban specificness of the decline during 1961-71 and the rural specificness of it during 1971-81 need to be interpreted in terms of socio-economic changes that the country was experiencing. However, it is important to note that this rural urban dichotomy does not exist when we consider inter-state migration alone. Here the rate of decline for all ratios is heavier in the latter than the former decade and the decline in urban ratio is distinctly steeper than its rural counterpart in both the period under consideration. The jump both in the volume of decline and the rate of decline in the already low level of inter-state rural migrant ratio make it a focal point of debate as to why migration in rural areas, specially across state is so badly affected. But it would be relevant to mention that the all India pattern of decline in various ratios of life time migrants is confirmed even when we consider the current migrants (with less than one year at the place of enumeration) and inter-censal migrants (arriving at the place of enumeration after previous census) separately. Table II.3 shows that the percentage of current inter-censal migrants have gone down in all the streams suggesting that migration during seventies is lower than the same during sixties. The spatial

TABLE II.3

Percentage Distribution of Current and Inter-censal Migrants by Place of Last Residence by the Place of Enumeration, 1971, 1981

Migration Streams (POLR)	Type of Place of Enumeration							
	Rural				Urban			
	1971		1981		1971		1981	
	M	F	M	F	M	F	M	F
1. Total Migrants,								
a. Current (R)	11.93	5.27	9.96	3.14	7.81	5.72	5.77	4.47
a. Current (U)	18.90	10.21	14.24	6.56	9.55	7.21	6.63	5.30
b. Inter-censal (R)	53.05	34.49	49.95	31.50	50.44	44.33	49.65	44.43
Inter-censal (U)	67.19	49.95	63.20	46.05	56.78	52.44	52.58	49.82
2. Intra District								
a. Current (R)	10.30	4.80	8.32	2.73	8.46	5.17	6.61	4.18
Current (U)	15.62	8.88	11.81	5.58	10.48	7.11	7.90	5.67
b. Inter-censal (R)	51.11	33.62	47.53	30.75	53.25	41.99	52.35	42.61
Inter-censal (U)	64.30	46.83	61.30	43.89	60.00	51.38	56.38	50.21
3. Inter-district								
a. Current (R)	16.15	6.80	13.28	4.13	7.26	6.01	5.42	4.49
Current (U)	20.04	11.06	14.60	6.85	9.80	7.35	6.80	5.23
b. Inter-censal (R)	58.42	37.16	40.09	33.32	49.59	46.22	49.83	46.35
Inter-censal (U)	69.53	52.89	64.56	47.53	59.09	53.91	54.83	51.01
4. Inter-State								
a. Current (R)	16.28	8.33	16.32	6.29	7.57	6.88	4.94	5.27
Current (U)	24.86	14.33	19.96	9.96	8.76	7.08	5.48	5.05
b. Inter-censal (R)	57.55	40.42	54.83	37.20	47.52	48.01	45.32	46.16
Inter-censal (U)	70.42	57.32	65.65	51.32	52.39	51.11	46.83	47.51

Source: 1. Census of India, 1971 Series 1, Indian Migration Table 5, part II D(1) Table DI
2. Census of India, 1981, Series 1, India, Report and Tabls Base on Five Percent Data.

pattern of the decline of migration in India in the light of above findings will be attempted in the next part of the chapter.

Migrant Ratios - State-level Behaviour:

On the basis of migration figures for 18 states which exclude the four states Assam, Haryana, Himachal Pradesh and Meghalaya for which data for one of the three points of time are not available, an analysis of the levels of different migrant ratios, differences among states as regards the value of each of the nine migration indicators and also with regard to the ratio of urban to total population, the decadal percentage change in these indicators and differences among states on this count has been made. The inter-temporal correlation coefficients among various indicators based on the figures for these 18 states for 3 points of time have been discussed. To avoid the loss of information separate correlation matrices for 3 points, based on 19 states for 1961, on 22 states in 1971 and 21 states in 1981 have been computed.

The average of all states for different migrant ratios, except for inter-state and intra-district migrant ratios in rural areas, are higher than the corresponding all India figures. This exception may be due to high

values of these variables prevailing in comparatively smaller states, thus jacking-up the values. Now the question arises as to how uniform is the distribution of these indicators around respective mean values? Let us have a look at the following results based on 18 comparable states.

Averages of and Levels of Dispersion in Male Migration Ratios and Urban Ratio

Ratio Year	Average			Coeff. of variation		
	1961	1971	1981	1961	1971	1981
Migrant ratio (X_1)	20.03	18.41	18.28	48.25	42.89	48.44
Migrant ratio in rural areas (X_2)	14.82	14.12	13.28	31.47	34.13	40.36
Migrant ratio in urban areas (X_3)	36.78	33.78	31.58	35.17	43.62	39.41
Inter-state migrant ratio (X_4)	5.54	5.58	5.43	189.58	167.67	171.03
Inter-state migrant ratio in rural areas (X_5)	2.36	2.67	2.68	157.11	163.34	172.73
Inter-state migrant ratio in urban areas (X_6)	13.22	13.38	10.68	93.60	111.51	100.30
Intra-district migrant ratio (X_7)	10.50	9.21	8.51	36.62	38.68	41.94
Intra-district migrant ratio in rural areas (X_8)	10.01	9.53	8.10	45.28	40.94	45.20
Intra-district migrant ratio in urban areas (X_9)	12.93	10.02	9.98	42.02	41.72	44.88
Urban ratio (X_{18})	20.49	22.59	26.36	90.64	80.71	68.52

The coefficients of variation tell us that the intra-district migrant ratio (X_7) is more uniform in its distribution across the states than the migrant ratio (X_1) and the inter-state migrant ratio (X_4).

The spatial distribution of intra-district migrant ratio is significantly less unequal than the total and inter-state migrant ratios. When we see the level of dispersion experienced by the rural migrant ratio (X_2) and urban migrant ratio (X_3) we find that the corresponding inter-state ratios (X_5 and X_6) and intra-district ratios (X_8 and X_9) have higher value of dispersion, the gap being wider in the case of rural ratios. The dispersion of values of urban migrant ratio (X_3) is slightly more than that of rural migration ratio (X_2) in 1961 and 1971 but the reverse is true for 1981. But in the case of intra-district migrants the rural ratio is slightly more diversely distributed than the urban ratio.

During 1961-71 the dispersion w.r.t. migrant ratio (X_1) and inter-state migrant ratio (X_4) narrowed down. However, it increased w.r.t. all other migrant ratios. During 1971-81 the level of dispersion decreased for urban migrant ratio (X_3) and inter-state urban migrant ratio (X_6). This means that during 1961-71 migrant ratio (X_1) and inter-state migrant ratio (X_4)

TABLE II.4

Lifetime Male Migrants as Percentage of Total Male Population in the States and Union Territories
1961, 1971, 1981

State/U.T.	Migrants (X_1)			Rural (X_2)			Urban (X_3)			Inter-State - (X_4)			Inter-State (Rural) (X_5)			Inter-State (Urban) (X_6)			Intra-District (X_7)			Intra-district (Rural) (X_8)			Intra-district (Urban) (X_9)		
	1961	1971	1981	1961	1971	1981	1961	1971	1981	1961	1971	1981	1961	1971	1981	1961	1971	1981	1961	1971	1981	1961	1971	1981	1961	1971	1981
1. Andhra Pradesh	21.24	21.23	20.50	17.55	17.83	15.84	38.40	35.62	35.53	1.40	1.42	1.32	0.66	0.68	0.64	4.80	4.22	3.49	14.31	14.37	13.11	13.46	13.81	11.82	18.26	16.63	17.27
2. Assam	29.42	28.52	*	26.64	26.95	*	59.01	53.41	*	5.37	3.65	*	4.24	3.35	*	17.27	16.62	*	12.58	14.29	*	12.64	14.36	*	11.88	13.61+	*
3. Bihar	12.56	9.73	8.53	9.65	6.72	5.00	40.99	34.58	31.64	1.62	1.28	1.10	0.85	0.50	0.39	9.17	7.68	5.71	7.15	5.26	3.64	6.43	4.65	2.98	14.17	10.29	7.91
4. Gujarat	20.60	20.19	20.52	14.21	13.75	13.61	38.45	36.20	35.39	2.81	3.07	3.50	0.97	0.98	1.19	7.92	8.29	8.47	10.81	9.85	9.50	9.80	12.16	8.70	13.64	11.39	11.21
5. Haryana	-	18.53	17.23	-	12.98	10.66	-	44.15	40.43	-	6.04	6.33	-	4.10	3.43	-	14.98	16.57	-	6.79	4.26	-	4.44	3.39	-	8.53	7.32
6. Jammu & Kashmir	13.30	11.81	10.07	11.71	10.54	8.75	21.09	17.29	15.00	0.85	1.68	1.32	0.55	1.34	0.90	2.33	3.15	2.88	7.32	6.31	5.36	7.16	6.38	5.34	8.11	5.97	5.47
7. Himachal Pradesh	-	19.53	20.56	-	15.91	17.34	-	62.22	55.85	-	3.79	3.85	-	2.34	2.63	-	20.95	17.28	-	9.99	10.52	-	9.62	10.05	-	14.33	15.56
8. Karnataka	23.78	23.22	22.36	19.80	19.44	17.12	37.21	34.62	34.95	4.31	3.75	3.95	2.44	2.18	2.13	10.63	8.51	8.33	13.83	13.80	12.12	13.50	13.69	11.37	14.93	14.12	13.92
9. Kerala	20.20	17.02	15.61	19.44	16.51	14.43	24.38	19.64	20.66	1.47	1.22	1.36	1.25	0.99	1.18	2.66	2.38	2.09	13.30	16.03	12.16	13.33	10.25	12.50	13.15	8.90	10.68
10. Madhya Pradesh	23.16	21.21	19.66	19.40	17.61	15.22	44.36	38.87	36.44	4.29	3.80	3.43	2.12	1.69	1.41	16.80	14.16	11.06	13.37	11.86	10.58	13.63	12.10	10.39	11.87	10.72	11.30
11. Maharashtra	31.73	29.87	32.29	21.77	20.44	23.77	54.61	48.97	47.02	7.18	7.35	7.62	1.35	1.46	1.93	20.58	19.28	17.45	14.02	12.56	13.71	15.64	14.21	16.03	10.30	9.23	9.71
12. Manipur	14.56	16.71	11.12	14.51	16.97	10.36	15.04	15.02	13.25	1.52	3.01	2.27	1.16	2.78	1.66	5.18	4.52	3.97	11.58	10.68	6.11	12.37	11.17	6.48	6.53	7.54	5.08
13. Orissa	13.90	17.40	15.85	11.67	14.48	11.66	43.47	46.69	44.97	1.72	2.08	2.28	0.95	1.03	1.11	12.00	12.60	10.40	9.25	11.72	9.22	8.61	11.20	8.12	17.83	16.87	16.90
14. Meghalaya	-	32.84	26.82	-	30.30	22.84	-	46.96	44.34	-	6.41	6.79	-	3.42	3.79	-	23.02	19.98	-	19.39	13.81	-	20.89	13.95	-	11.06	13.18
15. Punjab	27.59	21.45	21.73	20.07	17.79	15.91	56.38	45.00	36.78	2.90	3.71	4.48	1.41	1.70	2.28	8.60	10.10	10.17	7.75	7.32	6.98	7.11	6.57	6.23	10.16	9.73	8.91
16. Nagaland	14.27	22.81	26.26	11.75	14.66	21.36	52.79	79.05	61.78	4.42	11.03	11.30	3.01	4.99	7.49	25.80	52.71	29.74	6.21	6.69	10.51	4.86	5.88	9.21	26.76	12.34	16.80
17. Rajasthan	13.72	13.81	13.45	10.77	10.66	10.11	23.03	28.29	25.66	2.33	2.21	2.36	1.61	1.37	1.42	4.73	6.04	5.77	6.55	7.25	6.78	6.01	6.82	6.10	7.65	9.22	9.25
18. Tamil Nadu	18.92	20.27	19.56	13.28	14.61	13.13	34.11	33.07	32.43	1.80	1.91	1.34	0.61	0.63	0.52	4.99	4.81	4.02	11.36	11.53	10.26	10.14	10.86	9.36	14.66	13.04	12.07
19. Tripura	49.73	45.83	33.70	48.69	45.03	32.83	59.96	52.61	40.78	1.99	1.86	1.70	1.80	1.63	1.46	3.85	3.84	3.59	12.93	8.03	7.28	13.78	8.50	7.57	5.06	3.88	4.92
20. Uttar Pradesh	12.31	9.85	7.49	8.80	6.86	4.61	34.72	27.54	20.31	1.08	0.96	0.80	0.47	0.45	0.42	4.96	3.97	2.47	6.23	4.56	3.25	5.63	4.08	2.66	10.00	7.62	5.90
21. West Bengal	29.66	21.25	19.92	19.66	14.81	12.94	56.73	38.94	38.03	8.45	6.11	4.76	3.06	2.68	1.36	23.03	15.54	13.58	7.55	6.29	5.37	8.09	7.30	5.52	6.11	3.54	5.00
22. Delhi	61.08	49.72	47.30	20.30	24.40	23.26	66.06	52.58	49.18	37.83	36.49	38.03	16.48	19.25	19.95	40.43	38.44	39.44	4.41	1.12	1.94	2.16	3.91	2.44	4.69	0.80	1.90
INDIA	20.62	18.93	17.64	15.25	14.08	12.06	43.62	37.54	34.94	3.48	3.38	3.20	1.38	1.33	1.19	12.34	11.22	9.43	9.98	9.13	8.15	9.60	7.62	7.61 1	1.62	9.87	9.73

Note: 1. - Not Available
2 * : No Census.
3. Uncorrected for boundary changes. Population and migrant figures treated here include international migrants. Figures for Assam where census could't take place.

4. Migrants and population treated here include international migrants.

Sources: 1. Census of India, 1961, Vol. 1, India: Migration Tables, Part II-C(iii), Table D III
2. Census of India, 1961, Vol. 1, India: General Population Tables Part II A(i)., Table A-I.
3. Census of India, 1971 ser. 1 India, of II. - D(i) Migration Tables, Table D.1.
4. Census of India, 1981, Migration Tables - State Volumes (Unpublished)
5. Census of India, 1981, Primary Census Abstract of India.

became less unequal in their respective distributions across states, whereas during the next decade their urban counterparts did become so.

Leaders and Laggards: Migration Levels in different States:

Table II.5 summarises the migration scene in different states of the union of India. Delhi, Maharashtra and Karnataka maintain their first, second and third positions, respectively with respect to the migrant ratio (X_1) consistently in 1961, 1971 and 1981. However, their positions w.r.t. other ratios change. For example, Delhi's position w.r.t. migrant ratio in rural areas (X_2) is quite vacilating - from 6th position in 1961 it became first in 1971 but again it went a little back to 2nd place in 1981, and also it faces a neck-to-neck competition with Maharashtra and Orissa, for the second position in urban migrant-ratio. Delhi has the distinction of having the largest proportion of long-distance migrants and the smallest proportion of short-distance migrants in its population consistently, for all points of time under consideration. The above statement holds even when migrant-ratios in rural areas and those in urban areas are considered separately.

The State of Maharashtra, having the second largest proportion of migrants in its population, has third position w.r.t. inter-state migration, consistently

TABLE 11.5

LIFE TIME INTERNAL MALE MIGRANTS AS PERCENTAGE OF INTERNAL MALE POPULATION IN THE STATES AND UNION TERRITORIES OF INDIA - 1961,1971,1981

STATE/UT	MIGRANTS (X_1)			RURAL (X_2)			URBAN (X_3)			INTER-STATE MIGRANTS (X_4)			INTER-STATE (RURAL) (X_5)			INTER-STATE (URBAN) (X_6)			INTRA-DISTRICT (X_7)			INTRA-DISTRICT (RURAL) (X_8)			INTRA-DISTRICT (URBAN) (X_9)		
	1961	1971	1981	1961	1971	1981	1961	1971	1981	1961	1971	1981	1961	1971	1981	1961	1971	1981	1961	1971	1981	1961	1971	1981	1961	1971	1981
1. Andhra Pradesh	21.18	21.25	20.46	17.52	17.80	15.80	38.24	35.42	35.50	1.40	1.42	1.32	0.66	0.68	0.64	4.81	4.44	3.49	14.32	14.38	13.12	13.47	13.82	11.83	18.31	16.68	17.28
2. Assam	23.43	24.38	N.A.	21.50	22.40	N.A.	47.82	45.01	N.A.	5.82	4.97	N.A.	4.54	3.56	N.A.	21.99	90.62	N.A.	13.64	15.33	N.A.	13.53	15.26	N.A.	15.12	16.06	N.A.
3. Bihar	12.20	9.48	8.38	9.45	6.59	4.93	39.65	33.65	31.16	1.63	1.28	1.10	0.85	0.50	0.39	9.38	7.78	5.75	7.17	5.28	3.64	6.44	4.66	2.99	14.49	10.44	7.97
4. Gujarat	19.91	19.67	20.16	13.99	13.61	13.51	36.85	34.99	34.69	2.83	3.09	3.51	0.98	0.98	1.19	8.13	8.45	8.56	10.99	9.92	11.25	9.83	9.25	8.71	14.00	11.61	11.33
5. Haryana	N.A.	13.93	14.28	N.A.	10.23	9.07	N.A.	28.26	34.18	N.A.	6.38	6.56	N.A.	4.23	3.49	N.A.	14.98	18.31	N.A.	5.46	4.41	N.A.	4.58	3.45	N.A.	8.53	8.09
6. Himachal Pradesh	N.A.	18.04	19.10	N.A.	14.74	16.02	N.A.	59.29	53.79	N.A.	3.87	3.92	N.A.	2.37	2.67	N.A.	22.57	18.08	N.A.	10.18	10.71	N.A.	9.76	10.21	N.A.	15.44	16.39
7. Jammu & Kashmir	12.02	11.07	9.61	10.56	9.90	8.36	19.25	16.16	14.78	0.86	1.70	1.33	0.56	1.35	0.90	2.39	3.19	2.90	7.43	6.36	5.38	7.25	6.43	5.36	8.30	6.05	5.48
8. Karnataka	23.59	23.15	22.28	19.61	19.38	17.05	37.01	34.51	34.85	4.32	3.76	3.96	2.44	2.18	2.13	10.67	8.53	8.34	13.86	13.81	12.13	13.53	13.70	11.38	14.98	14.14	13.94
9. Kerala	20.07	16.93	15.54	19.34	16.44	14.38	24.12	19.41	20.55	1.47	1.22	1.36	1.26	0.59	1.19	2.67	2.39	2.10	13.32	10.04	12.17	13.34	10.26	12.51	13.20	8.92	10.69
10. Madhya Pradesh	22.63	20.57	19.33	19.27	17.20	15.08	42.30	37.40	35.60	4.32	3.83	3.44	2.12	1.69	1.41	17.21	14.50	11.20	13.46	11.96	10.62	13.66	12.16	10.41	12.31	10.98	11.45
11. Maharashtra	31.08	29.39	31.99	21.64	20.30	23.71	53.33	48.08	46.43	7.51	7.40	7.65	1.38	1.46	1.93	21.97	19.62	17.64	14.15	12.65	13.77	15.66	14.24	16.04	10.59	9.39	9.82
12. Manipur	13.53	15.50	10.73	13.66	15.76	10.05	12.11	13.83	12.63	1.54	3.05	2.28	1.17	2.82	1.66	5.36	4.58	3.99	11.99	10.84	6.14	12.49	11.33	6.50	6.76	7.64	5.12
13. Meghalaya	N.A.	28.07	23.89	N.A.	26.20	20.26	N.A.	39.33	40.41	N.A.	6.86	7.07	N.A.	3.62	3.92	N.A.	26.33	21.39	N.A.	20.80	14.01	N.A.	22.12	14.42	N.A.	12.65	14.11
14. Nagaland	12.07	16.96	26.83	9.24	9.34	20.20	57.99	76.71	59.98	1.56	11.40	11.52	3.10	5.30	7.60	28.34	58.59	31.14	6.41	6.92	10.72	5.00	6.24	9.34	29.39	13.72	17.59
15. Orissa	13.63	17.02	15.66	11.46	14.17	11.44	42.72	45.95	44.60	1.73	2.09	2.29	0.95	1.02	1.11	12.16	12.78	10.47	9.28	11.77	9.25	8.63	11.25	8.14	18.06	17.10	17.01
16. Punjab	18.89	13.49	17.19	13.53	12.12	12.11	43.49	35.70	30.92	3.24	4.05	4.74	1.52	1.82	2.38	11.14	11.81	11.11	8.68	7.49	7.38	7.70	7.02	6.57	13.16	11.38	9.73
17. Rajasthan	12.20	12.73	12.81	9.50	10.10	9.66	26.38	25.22	24.41	2.37	2.24	2.38	1.60	1.38	1.43	6.42	6.30	5.87	6.66	7.35	6.83	5.95	6.86	6.13	10.37	9.61	9.41
18. Tamil Nadu	18.67	19.96	19.04	13.12	14.36	12.74	33.70	32.66	31.86	1.80	1.92	1.69	0.64	0.63	0.52	5.03	4.84	4.05	11.44	11.57	10.29	10.16	10.89	9.40	14.76	13.12	12.17
19. Tripura	22.89	17.53	14.30	23.23	17.56	14.05	18.21	17.24	16.52	3.05	2.83	2.19	2.69	2.44	1.87	7.87	6.71	5.06	19.83	12.21	9.41	20.54	17.56	9.68	10.33	6.78	6.94
20. Uttar Pradesh	11.66	9.02	7.18	8.47	6.21	4.46	32.63	25.86	19.43	1.09	0.97	0.80	0.47	0.45	0.42	5.12	4.06	2.50	6.27	4.64	3.26	5.66	4.11	2.66	10.32	7.80	5.97
21. West Bengal	22.24	14.91	14.53	14.24	9.59	8.90	47.06	29.98	30.25	9.34	6.61	5.08	3.27	2.83	1.42	28.17	17.82	15.29	8.35	6.80	5.73	8.63	7.72	5.77	7.47	4.06	5.63
22. Delhi	52.05	42.79	43.13	18.95	23.45	22.58	57.07	45.28	44.86	46.61	41.52	41.04	16.76	19.49	20.13	51.15	44.36	42.80	5.43	1.27	2.09	2.19	3.96	2.46	5.93	0.93	2.06
INDIA	**18.05**	**17.49**	**16.64**	**14.37**	**13.07**	**11.39**	**40.17**	**34.95**	**33.22**	**3.56**	**3.44**	**3.24**	**1.40**	**1.35**	**1.20**	**13.25**	**11.68**	**9.68**	**10.35**	**9.31**	**8.23**	**9.88**	**9.06**	**7.67**	**12.47**	**10.28**	**9.99**

Note : 1. Population and migrant figures for this table exclude international migrants and are not corrected for any boundary changes.
2. The figures for migrants in N.E.F.A. and Goa,Daman and Diu are excluded (in 1961). Himachal Pradesh was excluded from the study in 1961. Haryana and Meghlaya were not in existence of separate states in 1961
3. The census in 1981 could not be held in Assam due to disturbed conditions.

Source: 1. Census of India, 1961,Vol.1 India : Migration Tables, part II-C (iii), Table D-III.
2. Census of India, 1961, Vol.1 India : General Population Tables, Part II A (i), Table A - I
3. Census of India, 1971, Series 1 - India, Migration Tables, Part II - D (i), Table D.1
4. Census of India, 1981, Migration Tables, Part V - A & B, Table D - 1 from state volumes (Unpublished).
5. Census of India, 1981, Series 1 India, part II B (i) fro,aru censis abstract general population.

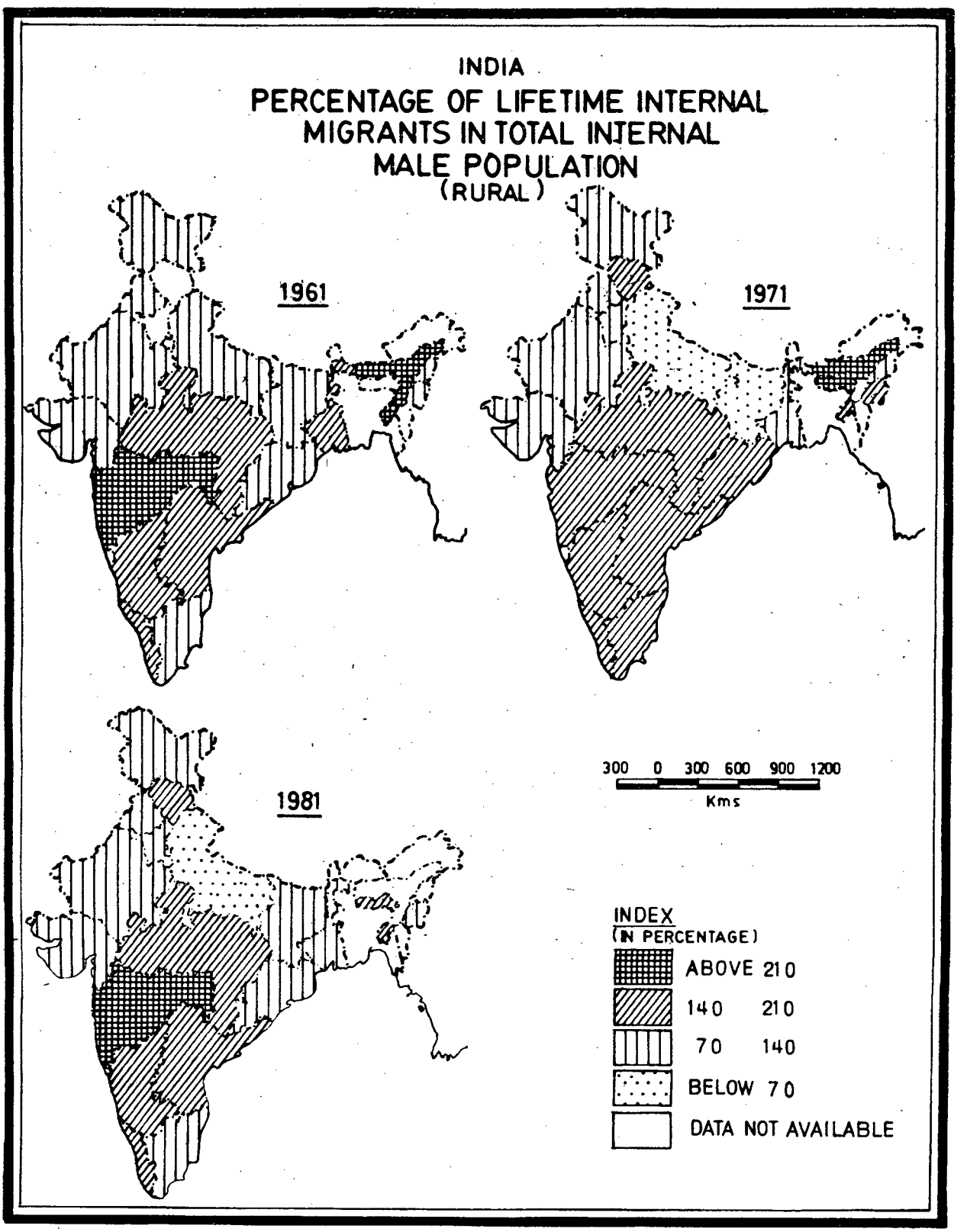

INDIA
PERCENTAGE OF LIFETIME INTERNAL MIGRANTS IN TOTAL INTERNAL MALE POPULATION
(RURAL)
1961
1971
1981
300 0 300 600 900 1200
Kms
INDEX
(IN PERCENTAGE)
ABOVE 210
140 210
70 140
BELOW 70
DATA NOT AVAILABLE

Fig: 2·1

for all points of time under consideration, and on an average a third position w.r.t. intra-district migration. Karnataka which has the third position regarding the migrant ratio (X_1) and the migrant ratio in rural areas (X_2), maintains the 4th place consistently w.r.t. all intra-district migrant ratios (X_7, X_8 and X_9), is nowhere near the to w.r.t. inter-state migrant ratios (X_4, X_5 and X_6).

Uttar Pradesh, Bihar, Jammu and Kashmir are the states which record the lowest levels of migration most consistently, w.r.t. almost all the migrant ratios. However, it does not apply to urban migrant ratio (X_3) in the case of Uttar Pradesh and to all the three ratios in urban areas (X_3, X_6, X_9) of Bihar. In Uttar Pradesh the migrant ratio in urban areas, though 20 to 25% below the corresponding all India figures at the three points of time, is not one of the lowest in all the states. In Bihar urban migrant ratios (X_3) is just below the corresponding all India levels. The intra-district migrant ratio in urban areas (X_9) for Bihar in 1961 and 1971 was 16% and 3% respectively above the corresponding all India figures and in 1981 it went 20% below the all India level. So, in the otherwise low migration land of Bihar, urban migrant ratio (X_3) and intra-district migrant ratio in urban areas

(X_9) are exceptionally high. However, the ratio of long-distance migration in urban Bihar tends to become harmonious with levels of other ratios in the state, in that it has been 23%, 34% and 41% below the all India level in 1961, 1971 and 1981 respectively.

An interesting fact about Andhra Pradesh is that it has one of the lowest proportions of inter-state migrants and one of the highest proportions of intra-district migrants, in its total, rural as well as urban population. The same is true for Kerala except that its intra-district migrant ratio in urban areas is not very high perhaps due to the nature of rural-urban settlement prevailing there. In a striking contrast to the above pattern in Andhra Pradesh and Kerala, West Bengal has one of the highest proportions of inter-state migrants and one of the lowest proportions of intra-district migrants in the total, rural as well as urban population. It is despite the continual decline of migrant-ratios in general and particularly of inter-state migrants during past two decades.

Rajasthan has consistently been among the states having one of the lowest migrant ratios, except for the inter-state migrant-ratio in rural areas (X_5) where its level is above the all India level. On the contrary, Madhya Pradesh has consistently been among those having

the highest migrant ratios, except that inter-state migrant ratios in rural areas (X_5) and intra-district ratio in urban areas (X_9) are, relatively speaking, not so high.

The Pattern of Temporal Changes in Migrant Ratios: The States compared with the All India

Table II.6 gives the percentage decadal variation in migrant ratios. The remarkable fact of a continuous decline over both the periods in each type of migration in total rural as well as urban population, which we observed at all India level is fully true for the states of Uttar Pradesh and Bihar, which also have the lowest levels for almost all the migrant ratios but relatively not so low figures for urban migrant ratio consistently at the three points of time, as also for Karnataka and Tripura, which have comparatively higher levels consistently for different points of time specially w.r.t. rural migrants and particularly of intra-district variety. Gujarat and Jammu and Kashmir follow the all India trend, except that all the inter-state migrant ratios show an increase rather than decline, over both the periods for Gujarat, and over 1961-71 for the Jammu and Kashmir (Figure 2.3).

Delhi, which has the highest levels of long-distance migration and the lowest levels of short-

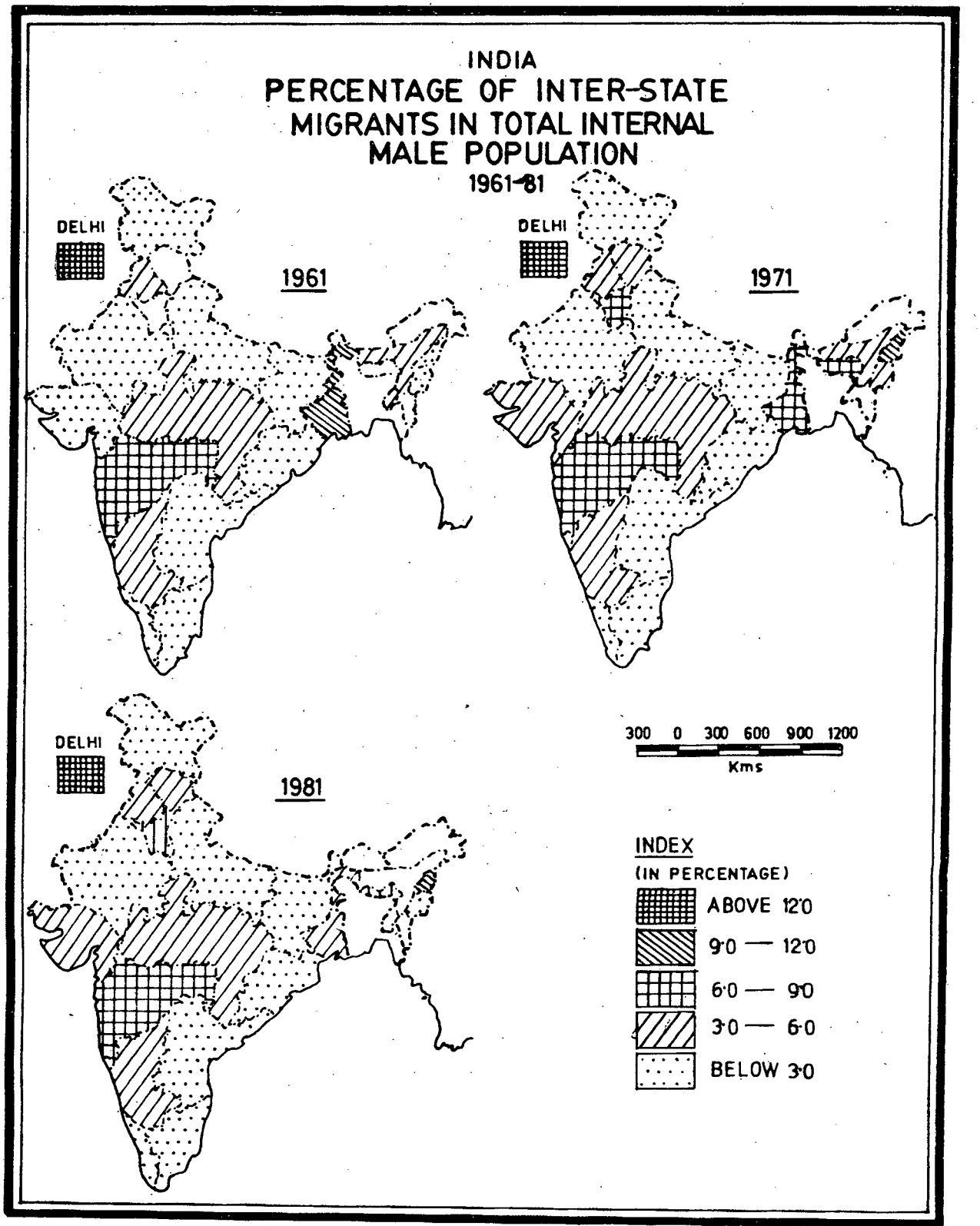

INDIA
PERCENTAGE OF INTER-STATE MIGRANTS IN TOTAL INTERNAL MALE POPULATION
1961-81
DELHI
1961
DELHI
1971
DELHI
1981
300 0 300 600 900 1200
Kms
INDEX
(IN PERCENTAGE)
ABOVE 12·0
9·0 — 12·0
6·0 — 9·0
3·0 — 6·0
BELOW 3·0

Fig: 2.3

TABLE 11.6

Percentage Decadal variation in Migrant Ratios: 1961-71, 1971-81

	State	Migrant Ratio (X_1)		Migrant Ratio in Rural Areas (X_2)		Migrant Ratio in Urban Areas (X_3)		Inter-State Migrant Ratio (X_4)		Inter-State Migrant Ratio in Rural Area (X_5)		Inter-State Migrant Ratio in Urban Area (X_6)		Intra-District Migrant Ratio (X_7)		Intra-District Migrant Ratio in Rural Areas (X_8)		Intra-District Migrant Ratio Ratio in Urban Area (X_9)	
		1961-71	1971-81	1961-71	1971-81	1961-71	1971-81	1961-71	1971-81	1961-71	1971-81	1961-71	1971-81	1961-71	1971-81	1961-71	1971-81	1961-71	1971-81
1.	Andhra Pradesh	.330	-3.718	1.598	-11.236	-7.374	.226	1.429	-7.042	3.030	-5.882	-7.692	-21.396	.419	-8.762	2.598	-14.399	-8.902	3.597
2.	Assam	4.055	N.A.	+4.186	N.A.	-5.876	N.A.	-14.605	N.A.	-21.590	N.A.	-10.778	N.A.	12.390	N.A.	12.786	N.A.	6.217	N.A.
3.	Bihar	-22.295	-11.603	-30.265	-25.190	-15.732	-7.400	-21.590	-14.06	-41.176	-22.000	-16.951	-26.187	-28.360	-3.061	-27.640	-35.837	-27.950	-23.659
4.	Gujarat	-1.205	2.593	-2.716	-.735	-5.047	-.857	9.187	13.592	.000	21.429	3.936	1.302	-9.074	31.407	-5.900	-5.838	17.071	-2.412
5.	Haryana	N.A.	2.513	N.A.	-11.339	N.A.	20.948	N.A.	2.821	N.A.	-17.494	N.A.	22.230	N.A.	-19.231	N.A.	-24.672	N.A.	5.158
6.	Himachal Pradesh	N.A.	5.876	N.A.	8.684	N.A.	-9.76	N.A.	1.292	N.A.	12.658	N.A.	-20.718	N.A.	5.206	N.A.	4.611	N.A.	6.153
7.	Jammu & Kashmir	-7.904	-18.189	-6.250	-15.556	-16.052	-11.634	97.674	-21.765	141.071	-33.333	33.473	-9.091	-14.401	-15.409	-11.310	-16.641	-27.108	-9.421
8.	Karnataka	-1.865	-3.758	-1.173	-12.023	-6.755	.985	-17.963	5.319	-10.656	-2.294	-20.056	-2.227	-0.361	-12.165	1.256	-16.934	-5.607	-1.414
9.	Kerala	-15.645	-8.210	-14.995	-12.530	-19.527	5.873	-17.007	11.475	-1.429	20.202	-10.487	-12.134	-24.625	21.215	-23.088	21.930	-32.424	19.843
10.	Madhya Pradesh	-9.163	-6.028	-10.742	-12.326	-11.584	-4.813	-11.343	-10.183	-20.283	-16.569	-15.747	-22.759	-11.144	-11.204	-10.981	-14.391	-16.804	4.281
11.	Maharashtra	-5.436	8.847	-6.192	16.798	-9.844	-3.432	-1.465	3.378	5.797	32.192	-10.696	-10.692	-10.601	8.854	-9.068	12.640	-11.331	4.579
12.	Manipur	+14.560	-30.774	+15.373	-36.231	+14.203	-8.677	98.05	-25.2	141.026	-41.135	-14.55	-12.882	-9.591	-43.359	-9.287	-42.630	13.018	-32.984
13.	Meghalaya	N.A.	-14.871	N.A.	-22.672	N.A.	2.746	N.A.	3.050	N.A.	8.287	N.A.	-18.762	N.A.	-32.644	N.A.	-32.810	N.A.	11.542
14.	Nagaland	40.514	58.196	1.082	116.274	32.281	-21.809	150.00	1.051	70.968	43.396	166.740	-46.85	7.956	54.91	24.800	49.679	53.317	28.207
15.	Orissa	24.572	-8.343	23.647	-19.266	7.561	-2.938	20.809	9.56	9.474	6.731	5.099	-18.075	26.832	-21.410	30.359	-27.644	-5.316	-.526
16.	Punjab	-28.587	27.420	-10.421	-.083	-17.912	-13.389	25.000	17.05	19.737	30.769	6.014	-5.927	-7.949	-7.635	-8.831	-7.265	-13.526	-14.499
17.	Rajasthan	4.344	.628	6.316	-4.356	-4.397	-3.212	-5.485	6.25	-13.750	3.623	-1.869	-6.825	10.360	-7.075	15.294	-10.641	-7.329	-2.081
18.	Tamil Nadu	6.909	-4.609	9.451	-11.281	-3.086	-2.449	6.667	-11.9	3.279	-17.460	-3.777	-16.322	1.491	-11.063	7.185	-13.682	-11.111	-7.241
19.	Tripura	-23.416	-18.426	-24.408	-18.565	-5.491	-4.009	-7.213	-22.19	-9.294	-10.246	-14.740	-24.590	-38.427	-22.932	-14.508	-34.875	-34.366	2.360
20.	Uttar Pradesh	-22.642	-20.399	-26.682	-28.180	-20.748	-24.465	-11.009	-17.526	-4.255	-6.667	-20.703	-38.424	-25.997	-29.741	-27.385	-35.280	-24.419	-23.462
21.	West Bengal	-32.951	-2.549	-30.899	-9.553	-36.294	.901	-29.223	-23.147	-13.456	-49.823	-36.741	-14.198	-18.563	-15.735	-10.545	-25.259	-45.649	38.570
22.	Delhi	-17.791	.795	23.747	-3.710	-20.859	-.928	-10.920	-1.156	-16.289	3.284	-15.275	-3.517	-76.611	64.567	80.822	-37.879	-84.317	121.505
	All INDIA	-7.61	-4.66	-9.05	-12.65	-13.60	-4.95	-3.37	-5.81	-3.57	-11.11	-11.85	-17.12	-10.05	-11.60	-8.30	-15.34	-17.56	-2.82

Note: *Ibid*

Source: *Ibid*

distance migration for 1961, 1971 and 1981 in its total male population, rural male population and urban male population separately, firmly marches along the all India trend of continuous decline. However, the rural migrant-ratio (X_2) and the three intra-district migrant-ratios (X_7, X_8, X_9), which are not so important and relevant indicators of migration in Delhi, had a decline which was not continuous for both the decades.

A more than 90% of Delhi's population and about 95% of its total internal male migrants have been living in its urban areas, consistently for past 2 decades all along our study period. In such a situation the increase in the rural migration ratio (X_2) and intra-district migrant ratio in rural areas (X_8) during 1961-71 and a decline in them during 1971-81 which are not in conformity with the all India trend of continuous decline can be ignored as insignificant violation. Similarly, because only an insignificant 3 to 4 per cent of the total internal male migrants of Delhi are short-distance (intra-Delhi) migrants, and also because there was a sharp decline in intra-district migrant ratios in its total and urban population (X_7, X_9) during 1961-71 the increase during decade 1971-81 in these two ratios cannot be taken as a serious violation of the all India trend.

Even in these cases the urban-specificness of the decline in 1961-71 and the rural-specificness of it during 1971-81, which we observed at all India level, exists. So we can say that Delhi, by and large, observes the all India trend of decline.

Maharashtra is yet another high migration area, maintaining second position regarding levels of migrants and third position with regard to inter-state and intra-district migrants. In it only two indicators, namely the urban migrant ratio (X_3) and the inter-state urban migration ratio (X_6) conform to the all India trend of continuous decline in both the decades. As opposed to the all India trend of an increasing rate of decline in inter-state rural migrant ratio (X_5), Maharashtra registers one of the fastest increasing rate of increase in this ratio. Levels of migration across all distances and in total rural as well as urban population, except inter-state migration in rural areas, declined in Maharashtra during 1961-71. Save for two exceptions mentioned above, all other ratios experienced an increase during 1971-81.

West Bengal registered sharp decline in all types of migration ratios in its urban population and the migration-ratios proper in total and rural

population (X_1 and X_2) during 1961-71. Its inter-state migrant-ratio in total population fell for both the periods and same in the rural population during 1971-81. Of the North-eastern states, Manipur records an outstanding decline in all, except urban, ratios during 1971-81 whereas it was a thorough exception to decline during the previous decade. Nagaland experiences a decline of same order in inter-state urban migration ratio. Nagaland does not register a decline in most of the migrant-ratios, except a decline during 1971-81 in its urban migrant ratio (X_3) and inter-state urban migrant ratio (X_6). During 1961-71 Orissa and Andhra Pradesh had increase in all their migration ratios, except intra-district urban migration ratio in the former and except for all ratios in urban areas in the case of the latter. During the next decade, however, they no more remained exceptional to the all India trend.

A remark to note about Punjab is the continuous increase over both the periods in the ratios of long-distance migrants in its total and rural populations (X_4, X_5), the rate of increase during 1971-81 in the former being down by 30% and the rate of increase in the latter (X_5) up by 30% as compared to the earlier decade, whereas the corresponding ratio in urban areas

records a low growth during 1961-71 and a negative growth during 1971-81. Incidentally, Punjab has recorded an outstanding decline in its urban migrant ratio (X_3) during both the decades and in the intra-district urban migrant ratio (X_9) during 1971-81.

While analysing all India figures, we noted the urban-specificness of decline in the migration ratios during 1961-71 and the rural-specificness of decline in them during 1971-81. It will be pertinent to mention states which go against the all India trend of urban-specific decline during 1961-71, i.e., whose rural ratios vary more in the negative direction or less in the positive direction as compared to their urban counterparts. Such exceptions w.r.t. migration ratio (X_2, X_3) are Bihar, Tripura and Uttar Pradesh. Assam, Bihar, Kerala, Madhya Pradesh, Rajasthan and Delhi are so w.r.t. inter-state migration ratios (X_5, X_6); and Madhya Pradesh, Manipur, Nagaland w.r.t. intra-district migration ratios (X_8, X_9).

During 1971-81, the states whose urban ratios move more in the negative and less in the positive direction, as compared to their rural counterparts, i.e., those defying the all India trend of rural-specificness of decline, are Gujarat, Himachal Pradesh, Maharashtra, Punjab and Nagaland w.r.t. migrant ratios

(X_2, X_3); Haryana and Tamil Nadu w.r.t. inter-state migrant ratios (X_5, X_6) and Himachal Pradesh, Maharashtra and Kerala w.r.t. intra-district migrant ratios (X_8, X_9).

Components and Categories as proportion of total Internal Migrants:

The majority of the internal male migrants in India were found residing in the rural areas in 1961, 1971 and 1981 (Table II.7). It is true for all the states, except Maharashtra, West Bengal and Delhi which had the majority of them living in urban areas at all points of time and also excepting Gujarat and Tamil Nadu which had slightly less than half of their migrants in rural areas in 1971 and 5% less than the half in 1981. The states which have consistently higher percentage of their total internal migrants living in rural areas are Tripura, Assam, Kerala, Manipur, Meghalaya, Jammu & Kashmir. Incidentally, the states of Bihar, Uttar Pradesh and Jammu & Kashmir which have low and declining levels of migration, particularly so in the rural areas, have high, but fast declining, proportion of their total internal migrants in rural areas. This confirms once again that these are the states of low and declining levels of migration in rural areas.

TABLE II.7

Male Migrants of Different Categories as Percentage of Total Internal Male Migrants, and the Urban Proportion of Population, 1961, 1971, 1981

State/U.T.	Migrants in Rural Areas (X_{10})			Migrants in Urban Areas (X_{11})			Inter-State migrants (X_{12})			Inter-State Migrants in Rural Areas (X_{13})			Inter-State Migrants in Urban Areas (X_{14})			Intra District Migrants (X_{15})			Intra District Migrants in rural Areas (X_{16})			Intra District Migrants in Urban Areas (X_{17})			Urban Ratio (X_{18})		
	1961	1971	1981	1961	1971	1981	1961	1971	1981	1961	1971	1981	1961	1971	1981	1961	1971	1981	1961	1971	1981	1961	1971	1981	1961	1971	1981
1. Andhra Pradesh	66.10	67.41	58.96	31.90	32.59	41.04	6.89	6.67	89.43	2.57	2.59	2.40	4.02	4.06	4.03	87.61	87.69	92.41	82.33	82.35	12.44	15.28	15.34	19.77	17.44	19.31	22.32
2. Assam	85.04	93.86	N.A.	14.95	16.14	N.A.	24.34	29.40	N.A.	17.76	13.24	N.A.	6.86	16.14	N.A.	58.23	62.89	N.A.	53.56	57.13	N.A.	4.73	5.76	N.A.	7.69	8.87	N.A.
3. Bihar	70.40	62.06	51.03	29.60	37.94	48.97	15.32	13.53	13.10	6.32	4.74	4.07	7.00	8.79	9.03	56.82	55.67	43.44	46.00	43.90	30.92	10.82	11.77	12.52	9.43	10.00	12.47
4. Gujarat	52.04	49.37	45.85	47.96	50.43	54.15	14.22	15.73	17.40	3.63	3.56	4.06	10.58	12.17	13.37	54.78	50.43	47.26	36.56	33.70	29.57	18.22	16.73	17.69	25.77	28.08	31.16
5. Haryana	N.A.	61.84	50.34	N.A.	38.16	49.66	N.A.	45.81	45.94	N.A.	25.58	19.35	N.A.	20.23	26.60	N.A.	54.20	30.91	N.A.	27.68	19.15	N.A.	11.52	11.76	N.A.	17.66	21.06
6. Himachal Pradesh	N.A.	75.68	77.07	N.A.	24.32	22.93	N.A.	21.43	20.55	N.A.	12.17	12.84	N.A.	9.26	7.71	N.A.	56.42	56.08	N.A.	50.98	47.09	N.A.	5.34	6.99	N.A.	6.39	7.61
7. Jammu & Kashmir	73.07	72.74	68.53	26.93	27.26	31.47	7.18	15.33	13.79	3.64	9.76	7.40	3.34	5.36	6.39	61.81	57.44	55.03	50.19	47.23	43.96	11.62	10.21	12.07	15.66	18.59	22.05
8. Karnataka	64.14	62.36	53.99	35.86	37.64	46.01	16.31	16.23	17.76	7.99	7.68	6.25	10.33	9.15	11.01	58.78	59.67	54.45	44.27	44.49	36.05	14.51	15.18	18.40	22.33	24.31	28.89
9. Kerala	81.59	81.24	75.10	18.41	18.76	24.90	7.33	7.21	8.75	5.50	4.90	6.29	2.03	2.31	2.54	66.38	59.30	73.30	56.31	50.68	65.35	10.07	8.62	12.95	15.11	16.24	18.74
10. Madhya Pradesh	72.71	69.70	61.85	27.29	30.30	38.14	19.19	18.62	17.80	7.99	6.07	5.80	11.21	11.75	12.00	59.48	58.14	54.95	51.54	47.25	42.68	7.94	8.89	12.27	14.29	16.29	20.29
11. Maharashtra	48.89	46.48	47.12	51.11	53.52	52.88	24.16	25.16	25.92	3.11	3.34	3.83	21.05	21.84	20.09	45.52	43.04	43.05	35.37	32.59	31.87	10.15	10.45	11.18	36.34	37.17	35.05
12. Manipur	92.28	88.23	68.75	7.72	11.77	31.05	11.55	19.79	21.23	7.93	15.80	11.41	3.42	3.90	9.82	89.65	69.90	57.19	84.35	65.46	44.62	4.36	6.59	12.57	8.68	13.19	26.42
13. Meghalaya	N.A.	80.00	69.53	N.A.	20.00	30.47	N.A.	24.45	23.56	N.A.	11.06	13.45	N.A.	13.39	10.11	N.A.	73.99	60.12	N.A.	67.55	48.46	N.A.	6.44	10.64	N.A.	14.55	18.07
14. Nagaland	72.18	46.80	62.71	27.82	53.20	37.29	27.79	67.21	42.95	24.19	26.36	23.55	13.60	40.63	19.36	53.15	40.32	37.94	39.05	31.30	27.01	14.10	9.52	10.93	3.19	9.95	15.32
15. Orissa	76.27	75.78	64.17	21.73	24.22	35.83	12.67	12.26	14.66	6.49	5.54	6.25	6.18	6.74	8.41	88.12	89.14	89.30	86.93	86.13	45.64	9.49	9.05	13.66	6.32	8.41	11.73
16. Punjab	58.20	54.25	51.41	41.20	45.75	48.59	17.17	25.29	27.57	8.62	8.15	10.12	10.38	15.14	17.43	45.93	46.02	42.95	34.46	31.42	27.66	12.47	14.59	15.29	28.15	33.73	27.68
17. Rajasthan	65.37	64.44	59.37	34.63	34.56	40.63	19.42	17.55	19.56	11.90	8.92	8.79	8.42	9.63	9.77	54.59	57.67	53.31	40.99	44.50	37.65	13.60	13.17	15.66	16.28	17.63	21.04
18. Tamil Nadu	51.25	49.92	44.58	48.72	50.08	55.42	9.65	9.61	8.88	2.40	2.19	1.83	7.26	7.42	7.05	61.05	57.99	54.07	39.71	37.87	32.99	21.34	12.12	21.17	25.69	30.26	32.00
19. Tripura	94.48	91.04	86.42	5.52	8.96	13.58	15.34	16.15	15.34	10.96	12.66	11.79	2.39	3.50	3.55	86.66	84.65	85.81	83.52	86.12	80.95	3.14	5.53	4.86	9.02	10.43	10.99
20. Uttar Pradesh	63.01	59.06	50.80	36.99	40.94	49.20	9.34	10.72	11.16	5.53	4.29	4.35	5.81	6.43	6.33	83.78	81.42	85.42	42.08	37.08	30.31	11.70	12.34	15.11	12.85	14.02	17.95
21. West Bengal	48.40	49.39	45.11	52.60	50.61	54.89	42.00	44.30	34.97	11.11	14.21	7.22	30.89	30.09	27.75	37.54	45.50	39.46	29.35	38.75	29.25	8.19	6.85	10.21	24.43	24.75	26.46
22. Delhi	4.80	6.26	4.07	95.20	93.74	95.93	89.56	97.02	95.16	4.24	5.20	3.63	85.32	91.82	91.53	10.44	2.98	4.84	0.56	1.06	0.44	7.88	1.92	4.40	88.25	89.76	92.73
INDIA	61.36	59.62	51.99	38.62	40.33	48.01	18.73	19.64	19.46	6.05	6.15	5.47	12.13	13.49	13.99	64.66	58.22	49.45	42.67	41.55	35.01	11.99	11.87	14.44	17.98	18.91	23.70

Note: Same as of Table II.5

Source: Same as of Table II.5

The share of total internal migrants in the rural areas has declined over time, the decline during 1971-81 being four times, in absolute as well as percentage terms, of decline experienced during the previous decade. It is generally true for all states, except that Rajasthan, West Bengal and Delhi during 1961-71, and Himachal Pradesh and Maharashtra during 1971-81 recorded small increases. The order of decline was highest in Bihar, Madhya Pradesh, Rajasthan and Uttar Pradesh. Incidentally, these are the states where migrant ratios, particularly rural migration ratios are declining fast.

The decline in the share of rural areas in the volume of total internal migrants, and as a corollary, the increase in the share of urban areas is clearly seen even when we consider the long-distance and short-distance migration separately, except for a small upswing in inter-state rural proportion (X_{13}) in 1971. The proportion of inter-state to total internal migrants (X_{12}) shows an upswing during 1961-71 followed by a slight fall. The proportion of inter-state migrants in rural areas (X_{13}) also shows an upswing during 1961-71, but then, in the next decade there is decline five times the initial upswing. It makes the earlier evidence of steeper fall in long-distance migration in rural areas, even stronger. The upswing in the

value of these two variables (X_{12}, X_{13}) during 1961-71 and a decline in the next decade is also observed by Andhra Pradesh, Jammu & Kashmir, Maharashtra, Nagaland, Tripura, West Bengal and Delhi. Bihar and Maharashtra observe this pattern in the behaviour of the proportion of inter-state to total internal migrants (X_{12}) but w.r.t. the proportion of inter-state migrants in rural areas to total internal migrants (X_{13}), they follow different pattern. Bihar shows continuous decline while Maharashtra shows the opposite trend.

This supports our earlier contention, on the basis of the behaviour of inter-state rural migration ratio (X_5), that the levels of long-distance migration are continuously declining in Bihar and continuously increasing in Maharashtra.

The proportion of migrants in urban areas to total internal migrants (X_{14}) increased during both decades for India and for most of the states except West Bengal and Delhi which show a decline during the entire study period in the proportion which is already quite high in their case and also excepting Maharashtra, an another high migration state, which shows a decline in it during 1971-81.

The proportion of intra-district to total internal migrants (X_{15}) in India shows a continuous decline.

It was 54.66% in 1961, 53.22% in 1971 and came down to 49.45% in 1981. It is true for states except Andhra Pradesh, Assam, Orissa, Punjab and Rajasthan which show an increase in 1961-71 and decline in the next decade and Kerala a continuous increase during the study period. Similarly, the decline in the intra-district proportion in rural areas (X_{16}) is observed by all states except Assam and Delhi during 1961-71 and Kerala during 1971-81. Intra-district migrant in urban area as proportion of total internal migrants (X_{17}) shows decline in 1961-71 and upsurge during 1971-81. Many states follow this trend but the states of Andhra Pradesh, Bihar, Karnataka, Madhya Pradesh, Maharashtra, Punjab and Tripura show a continuous increase rather than a broken one.

Lifetime Inter-State Male Outmigration and Inmigration:

The inter-state in and out-migration cancel each other at all India level but when states are considered the both will be different and then states can be compared with each other and useful inferences can be drawn. This section contains the profile of lifetime inter-state male out-migration from rural and urban areas and their growth rates, as also the analysis of the life-time inter-state male net migration and the decadal rate of it for different states. It must be

seen in the context of our discussion in earlier parts, of the relative position of different states regarding migration levels and the pattern of temporal changes in them during the study period.

The spatial profile of the rate of out-migration from rural areas and urban areas (Table II.8) further confirms the trends in the levels of migration and temporal changes therein, for different states which we discussed earlier. The states which have low levels of migration in their population report steeper decline of long-distance in migration in them, such as Bihar, Himachal Pradesh, Kerala, Rajasthan and Uttar Pradesh have high rural as well as rural outmigration rates in 1971 and 1981. The case of Punjab and Haryana which have high out-migration rates in unique because of their being part of the same state along with Himachal Pradesh till 1966. The exceptionally low rates of out-migration in rural as well as urban areas of Madhya Pradesh and Orissa, accompanied by the fact of relatively high migration levels in Madhya Pradesh and Oriya contrast of low migration levels in rural areas and high levels in urban areas makes it all the more necessary to look deeply and minutely in the socio-economic structure of these states.

TABLE II.8

Lifetime Interstate Male Migrants From Rural and Urban Areas (Per cent) and Their Growth Rates - 1971-81

States	Rural Outmigrants to population		Urban Outmigrants to population		Growth Rates for migrant			
	1971	1981	1971	1981	Rural to Rural	Rural to Urban	Urban to Rural	Urban to Urban
Andhra Pradesh	1.84	1.81	4.07	3.42	3.33	23.72	15.65	27.31
Bihar	4.06	3.50	5.90	6.66	-29.08	37.60	71.78	72.20
Gujarat	2.61	2.34	4.60	3.82	19.17	7.81	21.39	16.30
Haryana	5.11	5.12	10.76	9.36	22.09	22.00	37.20	39.08
Himachal Pradesh	5.47	5.67	27.28	25.60	18.14	29.76	54.69	19.09
Jammu & Kashmir	0.96	0.87	4.96	3.88	55.76	-8.75	63.22	5.58
Karnataka	2.39	2.84	6.39	5.00	40.06	42.05	11.09	18.37
Kerala	3.59	3.29	14.67	12.42	-3.05	8.53	-9.70	20.29
Madhya Pradesh	1.21	1.66	3.49	2.95	53.88	80.20	43.68	27.11
Maharashtra	1.43	1.47	2.81	2.57	5.15	37.46	14.82	29.95
Manipur	1.03	1.33	2.96	1.06	30.08	72.11	63.95	247.72
Meghalaya	1.89	0.25	8.61	3.75	-89.53	-27.56	-66.59	-3.15
Nagaland	1.04	0.72	3.76	2.61	-39.25	92.17	-29.58	114.81
Orissa	1.93	1.63	4.43	3.60	-32.76	35.69	-8.57	50.19
Punjab	6.98	5.67	13.00	10.28	-0.87	-10.59	-5.52	17.51
Rajasthan	3.97	3.52	7.82	5.80	-3.01	20.96	3.42	20.16
Tamil Nadu	1.99	2.08	4.27	4.53	2.19	34.99	38.66	34.54
Tripura	1.73	0.83	4.88	3.15	-54.91	11.31	155.29	37.34
Uttar Pradesh	3.52	4.00	8.17	7.23	2.75	45.80	19.38	42.80
West Bengal	0.96	0.88	2.69	2.72	-9.48	42.92	13.55	33.22
INDIA	2.69	2.76	5.49	4.99	-1.20	31.91	20.80	31.91

Source:
1. Census of India, 1971, Series 1, India Migration Tables, Part II, Table D-I
2. Census of India, 1981, Series 1, India, "Report and Tables Based on Five Percent Data", Table D-I.

In the absence of a clear-cut pattern of inter-state variation in the growth rates of migrants in different streams, we discuss a few examples only. One, Madhya Pradesh, experienced a phenomenal increase in the number of out-migrants in all the streams, specially from the rural areas while Orissa had a fast growth in its urban to urban out-migration component. Second, Bihar, Orissa, Kerala, Rajasthan and Uttar Pradesh had a negative or almost zero growth rates in their rural to rural outmigration stream. Third, Punjab experienced negative growth rate in all but urban to urban migration stream.

The picture with regard to lifetime inter-state male net migrants and the decadal rate thereof (Table II.9 and Figure 2.4) generally supports the observations made above.

Our earlier note that less developed states like Bihar and U.P. have low and fast declining levels of migration in their population is corroborated by the negative figure for net inter-state migration in their case. In fact, of all states showing negative net in-migration Tamil Nadu is the only one which does not come in the category of less developed states. The only other backward state having positive net migration in 1981 is Orissa. In fact Orissa had very few net migrants

TABLE II.9

Lifetime Interstate Male Net Migrants and the Decadal Rates 1971-1971-1981

States	Net migrants 1971	Net migrants 1981	Estimated net decadal migrants	Decadal rate of migrants
Andhra Pradesh	-178721	-237170	-74784	0.34
Bihar	-908347	-976053	-165099	-0.57
Gujarat	64740	190140	129016	0.93
Haryana	278873	289926	29183	0.54
Karnataka	62808	92256	33630	0.22
Kerala	-449054	-455482	-51574	-0.49
Madhya Pradesh	634144	510968	-62767	-0.29
Maharashtra	1596912	1977008	494611	1.89
Orissa	17785	113175	97273	0.88
Punjab	247583	276520	44918	0.62
Rajasthan	-217530	-186174	19277	0.14
Tamil Nadu	-90327	-153669	-72114	-0.35
Uttar Pradesh	-1362285	-2053328	-835908	-1.78
West Bengal	2825443	2821105	207118	0.88

Note: Net migrant figures are obtained by subtracting the outmigrants from the immigrants. Survivors among the 1971 migrants have been computed by multiplying the net migrants by the survival ratio of 1971-81, the later being the proportion of male aged ten and above in 1981 to the total male population in 1971. Net decadal migrants have then been obtained by subtracting the survivors among the migrants of 1971 from the net migrants of 1981. Decadal rate of migrants is the percentage of decadal migrants to the population of the states.

Source: 1. Census of India 1971, Series 1, India, Migration Tables, Part II-D(i), Table D-I.

2. Census of India, 1981, Series 1, India, "Report and Table Based on Five Per cent Data".

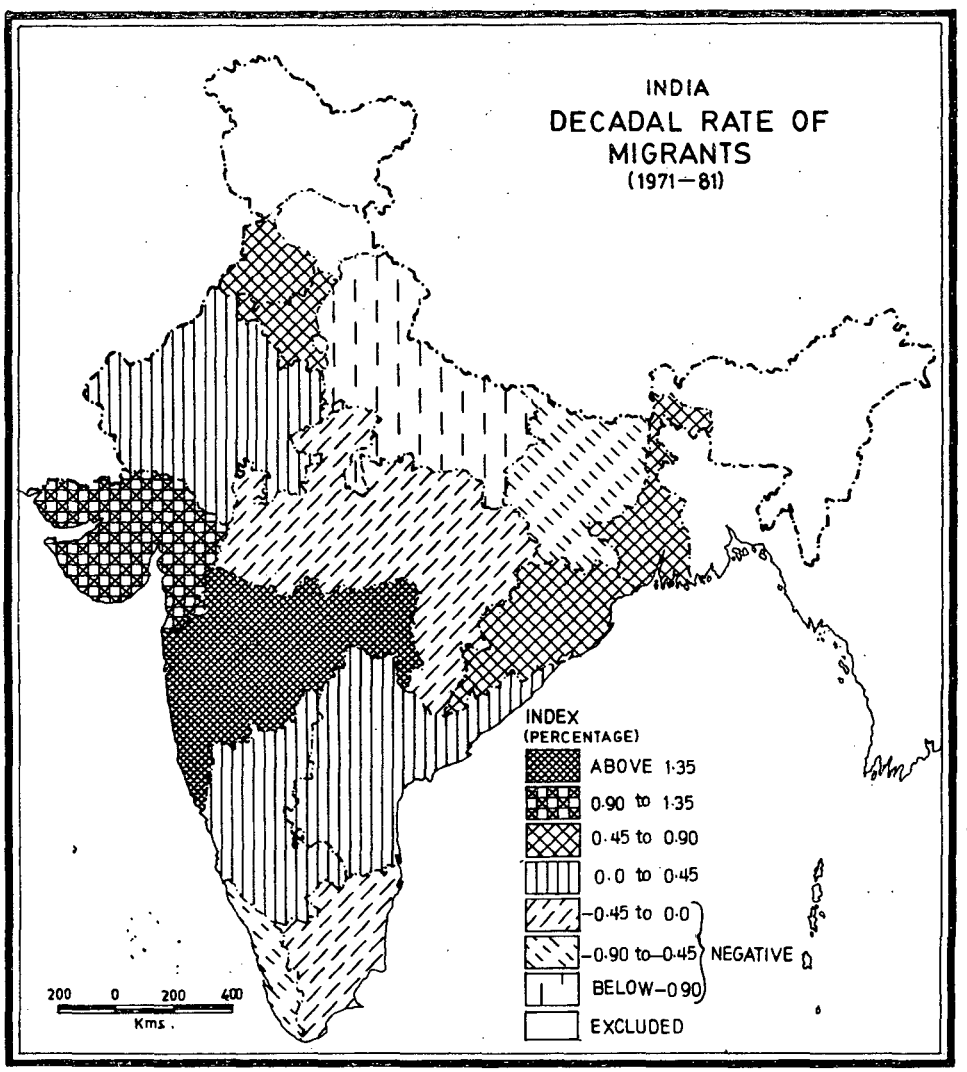

INDIA
DECADAL RATE OF MIGRANTS
(1971–81)
INDEX
(PERCENTAGE)
ABOVE 1·35
0·90 to 1·35
0·45 to 0·90
0·0 to 0·45
–0·45 to 0·0
–0·90 to–0·45
BELOW–0·90
NEGATIVE
EXCLUDED
200 0 200 400
Kms.

Fig. 2·4

in 1971 but the number increased dramatically. The observation which can be made about Punjab is that it had a very few net migrants during 1971-81, its decadal rate of net migration being quite low among the in-migrating states. It is all the more interesting to see that the better part of the net in-migration into Punjab had gone to its rural areas, than its urban areas, thus jacking up its rural ratios, especially inter-state rural and lowering the urban ones. Karnataka has improved its male migration rate. Rajasthan has experienced positive decadal growth rate of net in-migrants although the state was out-migrating in character in 1971 and 1981. In fact, about Rajasthan it would be more appropriate to say that level of its net inter-state migration has become less negative. It is the only state which despite being outmigrating in character, has a positive decadal rate of inter-state migrants, whose level of outmigration has declined. The reasons for it need to be explored into the changes in Rajasthan's economy during the seventies. Quite opposite to it, Madhya Pradesh was in-migrating in character in 1971 and 1981 but experienced a negative decadal growth rate of net in-migrants.

Migration in Class I Urban Units:

All India migration level in urban areas is higher than the same in rural areas. It is true for migration

across all distances for all the points of time covered in this study. Almost all the states follow this relation w.r.t. total male migration except Manipur and Tripura in 1961 and 1971. But they also fell in line in 1981. The levels of lo -distance migration in urban areas of India are 8 to 10 times higher than the same in rural areas. All the states have higher levels of inter-state migration in urban than in rural areas.

Almost 62% of the urban male population of India lives in urban units having population of one lakh or more, called Class I urban units. These cities, individually as well as collectively, play prominent role in the economic life of the country. The economic under-pinnings of their relation with hinterland, make them the nerve-centres of regional economies. Migration in them reflects the pull and push of economic forces all around. Before one embarks upon the study of socio-economic forces that work between the rural and the urban in general and amongst different types of settlements in particular, it would be pertinent to focus on the pattern of migration in the metropolitan cities and class I urban units and to situate it in relation to the general pattern of migration in India.

The levels of migration and the levels of inter-state migration in the male population of class I urban units, and the inter-state component as percentage of total male migration in each of class I cities were ascertained. These three were called the migrant ratio, inter-state migrant ratio and the inter-state component respectively.

The information on migration in each of the class I units was specially tabulated both in 1961 and 1971 censuses. The number of cities covered in this category were 108 in 1961 and 147 in 1971.

However, according to the 1981 census tabulation plan, migration figures at the city level will be available only for the cities with population of one million and above. In such category 12 cities of India are covered. Keeping in mind these data constraints, a study of 108 cities for 1961 and 1971 was undertaken and then that of all metropolitan cities for all the three points of study period. However, there were two major problems which had to be settled. Firstly, the concept of city/town group of 1961 had given place to the concept of city/urban agglomeration in 1971. The urban agglomeration of 1971 were usually amalgamations of more than one urban units. Eight of the 108 class I urban units of 1961 had no separate

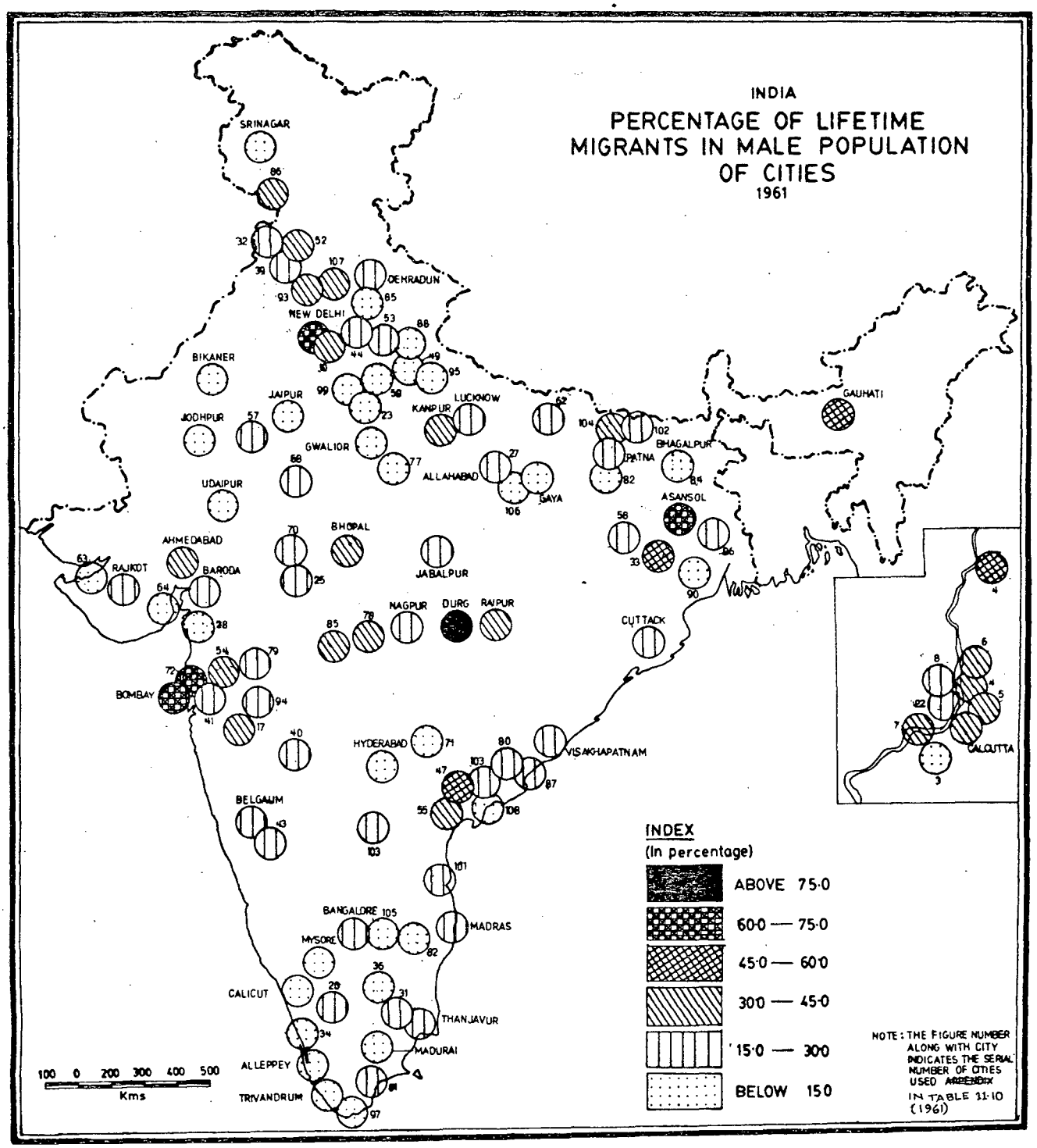
existence in 1971. The seven of them became parts of the Calcutta U.A. and the two separate units of New Delhi and Delhi municipal corporation now made one Delhi U.A. Even many of the remaining cities/town groups of 1961 had as their 1971 counterparts, thanks to the change of concept cities/U.As. which covered far more area. However, the extent to which the particular constituent unit of 1971 city/U.A. contributes to the total male population of the city/U.A. in 1971 could be taken as the measure of confidence with which we can compare the 1961 migration figures for this constituent unit with the 1971 migration figures for the city/U.A. of which it is now a part. Such a criteria, in fact, will take into account the change in coverage due to the application of different concepts of urban areas. It was found that 23 of the cities/U.As. of 1971 were comparable with their respective 1961 counterparts and another three were barely comparable. The results for the 74 comparable cities were analysed. However, the inferences regarding migration trends have also been drawn wherever possible, for town which are not comparable.

The second problem relates to the different concepts of migration on the basis of which data for cities in different censuses were tabulated. The 1971 and 1981 censuses tabulated the data for migrants to cities/U.As.

by the place of last Residence (POLR) only whereas for 1961 migration figures for cities/town groups are available by Place of Birth (POB) alone. It was resolved by converting the POLR data into POB data through an adjustment factors based on the difference of data by two concepts in the urban areas of the district(s) to which a particular city/U.A. belongs. Table II.10 and Figures 2.5, 2.6, 2.7 and 2.8 succintly portray the migration situation in the class I cities in 1961 and 1971.

Levels of Migration in Class I Urban Units:

For both the points of time, 1961 and 1971 separately, there is a great disparity among the cities regarding the levels of migration in their male population. There are cities like Durg, Thana which had almost three-fourths of their male population as migrants and in contrast to it, Srinagar had less than 5% and Rampur around 10% of its male population as migrants. For majority of the cities, the level of male migration was below the corresponding all India level of migration in urban male population both for 1961 and 1971. It is pertinent to mention that for 87 out of 100 cities taken in the study the level of migration in 1971 was lower than their respective 1961 levels. It becomes clear if we compare figures 2.5 and 2.6.


INDIA
PERCENTAGE OF LIFETIME MIGRANTS IN MALE POPULATION OF CITIES
1961
SRINAGAR
DEHRADUN
NEW DELHI
BIKANER
JAIPUR
JODHPUR
GWALIOR
KANPUR
LUCKNOW
ALLAHABAD
GAYA
PATNA
BHAGALPUR
GAUHATI
ASANSOL
UDAIPUR
BHOPAL
JABALPUR
AHMEDABAD
RAJKOT
BARODA
NAGPUR
DURG
RAIPUR
CUTTACK
BOMBAY
HYDERABAD
VISAKHAPATNAM
BELGAUM
BANGALORE
MADRAS
MYSORE
CALICUT
THANJAVUR
MADURAI
ALLEPPEY
TRIVANDRUM
CALCUTTA
100 0 200 300 400 500
Kms
INDEX
(In percentage)
ABOVE 75·0
60·0 — 75·0
45·0 — 60·0
30·0 — 45·0
15·0 — 30·0
BELOW 15·0
NOTE: THE FIGURE NUMBER ALONG WITH CITY INDICATES THE SERIAL NUMBER OF CITIES USED ~~APPENDIX~~ IN TABLE 11·10 (1961)

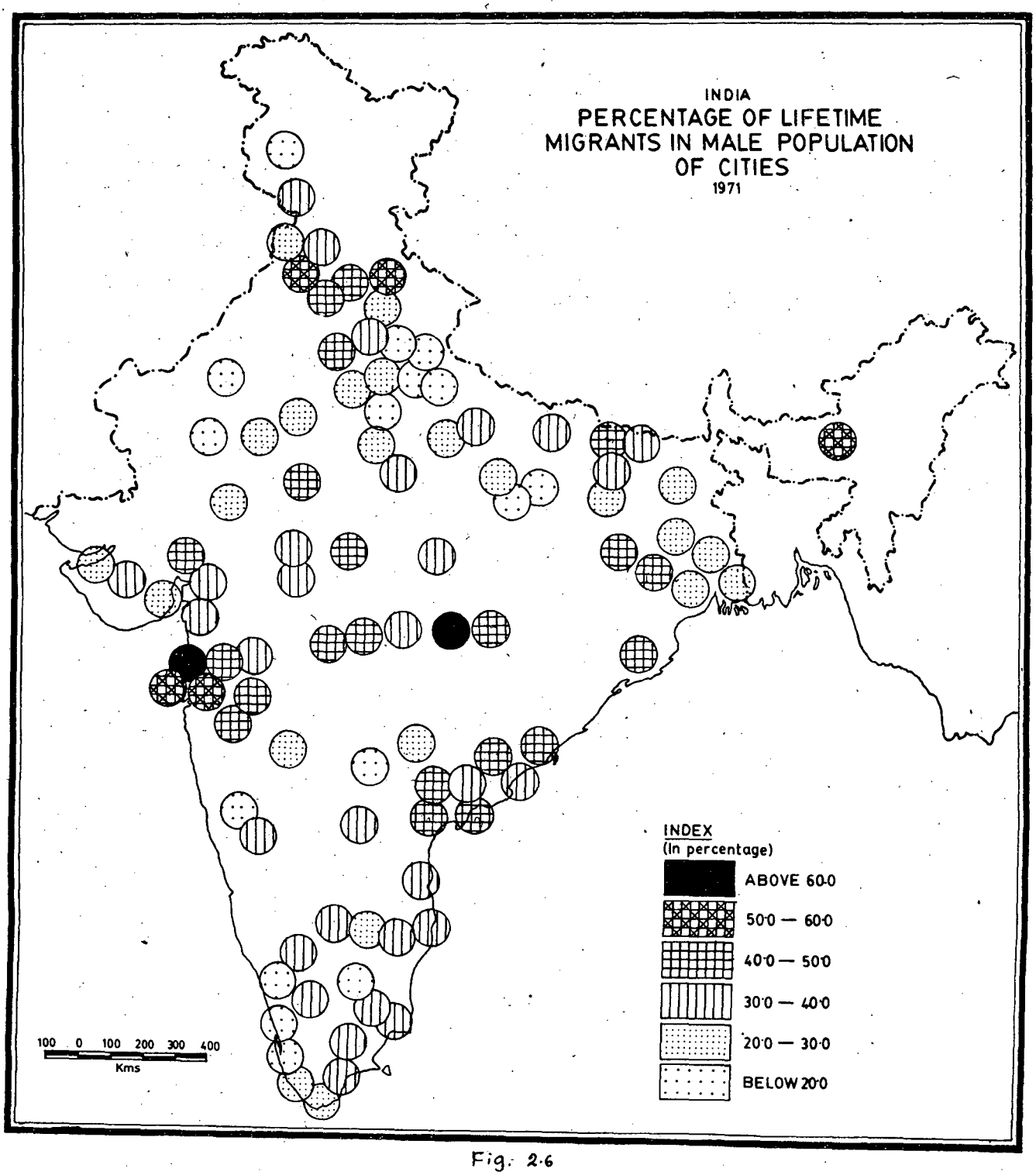

INDIA
PERCENTAGE OF LIFETIME MIGRANTS IN MALE POPULATION OF CITIES
1971
INDEX
(In percentage)
ABOVE 60·0
50·0 — 60·0
40·0 — 50·0
30·0 — 40·0
20·0 — 30·0
BELOW 20·0
100 0 100 200 300 400
Kms

Fig. 2.6

There are some cities which have consistently highest levels of migration and there are cities which have consistently lowest levels of it in their male population in 1961 and 1971, although there are a few which fluctuate.

Durg (60), Thana (72), Greater Bombay (9), Vijayawada (47), Delhi (10) and Bhopal (42) are among the top 10 cities with highest migration levels at both the times.[2] The same kind of consistency is maintained by Srinagar (35), Rampur (88), Moradabad (53), Bikaner (69), Shahjahanpur (95), Jodhpur (50), Bareilly (49) and Agra (23) as the cities having the lowest migrant ratio in 1961 as well as in 1971. Most of the highest ones, except Durg and Delhi improve their rank position. Ambala Cantt (107) and Ahmedabad (44) which are among the ten highest in 1961 lose that status in 1971 by a narrow margin. Ludhiana (39), Kota (68), Vishakhapatnam (45) and Nasik (53) are among the highest ten in 1971 only. Of the cities falling below the criterion of temporal comparison Gauhati (76), Jamshedpur (33) and Raipur (73) figure among the highest for both the periods. Among the lowest ten, Srinagar and Rampur maintain the

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2. Throughout the chapter, the figures in the bracket against class I cities indicate their respective serial codes in 1961 as given in Table II.10.

TABLE II.10

Percentage of Inter-State and Total Lifetime Migrants in Male population of Cities/Town Groups/ Urban Agglomerations: Inter-State Component and Growth Rates - 1961-1971

City/Town Group 1961	District/State	Total migrant ratio	Inter-State migrant ratio	Inter-State component of migrants	City/Urban Agglomeration 1971	Total migrant ratio	Inter-State migrant ratio	Inter-State component of migrants	1961-71 Variation IN Total migrant ratio	1961-71 Variation IN Inter-State migrant ratio	1961-71 Variation IN Inter-State component of migrants	1961-71 Percentage Variation IN Total migrant ratio	1961-71 Percentage Variation IN Inter-State migrant ratio	1961-71 Percentage Variation IN Inter-State component of migrants	Growth Rates 1961-71 Inter State migrants	Growth Rates 1961-71 Total migrants	Growth Rates 1961-71 Male population
1. Calcutta	Calcutta (W.B)	49.16	36.08	73.40	1. Calcutta U.A.*	27.10	15.71	57.97	-22.06	-20.37	-15.43	-44.87	-56.46	-21.02	3.65	31.25	138.06
2. Howrah	Howrah (W.B)	53.78	34.69	64.50	(Districts:												
3. South Suburban	Twenty four Paragans (W.B.)	44.13	12.70	28.77	Calcutta, Twenty four paragans,												
4. Bhatpara	-do-	63.17	50.19	79.45	Hoogly,												
5. South Dum-Dum	-do-	52.90	17.57	33.21	Howrah, and Nadia												
6. Kamarhati	-do-	49.06	29.15	59.41													
7. Garden Reach	-do-	46.59	30.12	64.63													
8. Bara Nagar	-do-	51.58	23.10	44.79													
9. Greater Bombay	6.Bombay (Maharashtra)	66.96	37.52	56.03	2. Greater Bombay	59.85	33.19	55.47	-7.11	-4.33	-0.56	-10.62	-11.54	-1.00	27.56	28.85	44.18
10. Delhi Municipal Corpn.	Delhi (Delhi)	53.34	47.76	89.54	3. Delhi U.A.	46.79	42.55	90.94	-6.55	-5.21	1.40	-12.28	-10.91	1.56	89.31	78.35	103.31
11. New Delhi	Delhi (Delhi)	74.51	70.19	94.20													
12. Madras	Madras (Madras)	37.08	10.84	29.23	4. Madras U.A.*	36.30	9.03	24.89	-0.78	-1.81	-4.34	-2.10	-16.70	-14.85	53.85	80.66	84.53
13. Hyderabad	Hyderabad(A.P.)	25.55	6.57	25.72	5. Hyderabad U.A.*	23.54	8.10	34.40	-2.01	1.53	8.68	-7.87	23.29	33.75	100.86	50.20	62.98
14. Ahmedabad	Ahmedabad (Gujarat)	51.20	17.47	34.12	6. Ahmedabad U.A.	43.39	15.51	35.75	-7.81	-1.96	1.63	-15.25	-11.22	4.78	32.72	26.65	49.46
15. Bangalore C & Trust Board Area	Bangalore (Mysore)	41.35	21.46	51.91	7. Bangalore U.A.	38.35	17.02	44.38	-3.00	-4.44	-7.53	-7.26	-20.59	-14.51	21.05	41.61	52.68
16. Kanpur town Group	Kanpur (U.P.)	47.99	5.54	11.54	8. Kanpur U.A.	23.67	4.71	13.20	-24.32	-0.83	1.66	-50.68	-14.98	14.38	12.73	-1.46	32.61
17. Poona	Poona (Maharashtra)	50.05	12.63	25.22	9. Poona U.A.*	46.68	14.99	32.10	-3.37	2.36	6.88	-6.73	18.69	27.29	130.15	80.83	93.88
18. Nagpur	Nagpur(Maharashtra)	43.23	13.66	31.60	10. Nagpur U.A.	34.45	9.22	26.77	-8.78	-4.44	-4.83	-20.31	-32.50	-15.28	-1.60	16.17	45.77

City/Town Group 1961	District/State	Total migrant ratio	Inter-State migrant ratio	Inter-State component of migrants	City/Urban Agglomeration 1971	Total migrant ratio	Inter-State migrant ratio	Inter-State component of migrants	1961-71 Variation IN Total migrant ratio	1961-71 Variation IN Inter-State migrant ratio	1961-71 Variation IN Inter-State component of migrants	1961-71 Percentage IN Variation Total migrant ratio	1961-71 Percentage IN Variation Inter-State migrant ratio	1961-71 Percentage IN Variation Inter-State component of migrants	Growth Rates 1961-71 Inter State migrants	Growth Rates 1961-71 Total migrants	Growth Rates 1961-71 Male population
19. Lucknow Town Group	Lucknow (U.P.)	40.83	6.34	15.52	11. Lucknow U.A.	32.34	5.85	18.07	-8.49	-0.49	-2.55	-20.79	-7.73	-16.43	15.25	-1.04	25.51
20. Coimbatore	Coimbatore (T.N.)	44.81	15.91	35.50	12. Coimbatore U.A.*	38.89	11.28	29.01	-5.92	-4.63	-6.49	-13.21	-29.1	-18.28	81.49	122.14	155.94
21. Madurai	Madurai (T.N.)	33.31	1.98	5.94	13. Madurai U.A. *	32.82	1.72	5.24	-0.49	-0.26	-0.70	-1.47	-13.13	-11.78	45.81	65.12	67.56
22. Jaipur	Jaipur (Raj.)	29.63	7.21	24.33	14. Jaipur U.A.	27.00	6.66	24.66	-2.63	-0.55	0.33	-8.88	-7.63	1.36	53.31	51.25	62.24
23. Agra town group	Agra (U.P.)	26.31	7.07	26.28	15. Agra U.A.	19.76	4.19	21.21	-6.55	-2.88	-5.07	-24.90	-40.74	-19.29	-24.50	-4.35	27.35
24. Varnasi town Group	Varnasi (U.P.)	28.27	5.61	19.86	16. Varanasi U.A.	15.56	3.31	21.27	-12.71	-2.30	1.41	-44.96	-41.00	7.10	-25.88	-30.79	25.73
25. Indore	Indore (M.P)	40.00	21.13	52.82	17. Indore U.A.	34.38	16.51	48.03	-5.62	-4.62	-4.79	-14.05	-21.26	-9.07	13.88	25.24	45.72
26. Jabalpur town group	Jabalpur (M.P.)	43.35	23.03	51.05	18. Jabalpur U.A.	38.73	19.63	50.68	-4.62	-3.40	-0.37	-10.66	-14.76	-0.72	27.90	28.14	50.07
27. Allahabad town group	Allahabad (U.P.)	31.28	5.35	17.09	19. Allahabad U.A.	20.40	4.59	22.48	-10.88	-0.76	5.39	-34.78	-14.21	31.54	8.14	-17.77	26.07
28. Surat	Surat (Gujarat)	28.47	8.55	30.02	20. Surat U.A.	32.44	12.70	39.14	3.97	4.15	9.12	13.94	48.58	30.38	159.41	99.00	74.64
29. Patna (M.C.) and Patliputra Housing colony	Patna (Bihar)	39.77	5.16	12.99	21. Patna U.A.	30.82	3.51	11.40	-8.95	-1.65	-1.59	-22.50	-31.98	-12.24	-7.28	5.61	36.27
30. Baroda	Baroda (Gujarat)	41.72	11.75	28.16	22. Vadodara U.A.	38.84	11.05	28.46	-2.88	-0.70	0.30	-6.90	-5.96	1.07	49.85	48.29	59.29
31. Tiruchirapalli	Tiruchirapalli (T.N.)	36.78	3.67	9.99	23. Tiruchirapalli U.A.*	35.73	3.48	9.73	-1.05	-0.19	-0.26	-2.85	-5.18	-2.60	75.87	80.63	85.95
32. Amritsar	Amritsar (Punjab)	36.16	10.18	28.16	24. Amritsar U.A.	29.52	11.85	40.14	-6.96	1.67	11.98	-19.25	16.40	42.54	57.52	10.53	35.36
33. Jamshedpur	Singhbhaum (Bihar)	57.44	32.67	56.88	25. Jamshedpur U.A.*	45.61	21.16	46.38	-11.83	-11.06	-10.50	-20.59	-35.23	-18.45	-0.09	22.52	54.28
34. Ernakulam	Ernakulam (Kerala)	33.13	2.65	7.99	26. Cochin U.A.*	19.22	3.72	19.34	-13.91	1.07	11.35	-41.99	40.37	142.05	422.77	115.96	272.28
35. Srinagar	Srinagar (J&K)	4.65	0.51	10.94	27. Srinagar U.A.	4.60	1.56	34.24	-0.05	1.05	23.30	-1.07	205.88	212.98	363.67	48.14	50.63
36. Salem	Salem (T.N.)	26.66	1.99	7.45	28. Salem U.A.*	18.96	1.87	9.84	-7.7	-0.12	2.39	-28.88	-6.03	32.08	58.15	19.73	68.35
37. Trivandrum	Trivandrum (Kerala)	33.49	7.5	22.39	29. Trivandrum	23.51	5.50	23.39	-9.98	-2.00	1.00	-29.80	-26.70	4.47	23.67	18.39	68.67
38. Gwaliar	Gwaliar (M.P.)	31.51	17.94	56.94	30. Gwalior U.A.	26.15	14.81	56.64	-5.36	-3.13	-0.3	-17.01	-17.45	-0.53	16.31	16.91	40.88
39. Ludhiana	Ludhiana (Punjab)	49.27	10.59	21.49	31. Ludhiana U.A.	50.88	17.78	34.95	1.61	7.19	13.46	2.05	67.89	62.63	259.08	120.76	113.77

City/Town Group 1961	District/State	Total migrant ratio	Inter-State migrant ratio	Inter-State component of migrants	City/Urban Agglomeration 1971	Total migrant ratio	Inter-State migrant ratio	Inter-State component of migrants	1961-71 Variation IN Total migrant ratio	1961-71 Variation IN Inter-State migrant ratio	1961-71 Variation IN Inter-State component of migrants	1961-71 Percentage IN Variation Total migrant ratio	1961-71 Percentage IN Variation Inter-State migrant ratio	1961-71 Percentage IN Variation Inter-State component of migrants	Growth Rates 1961-71 Inter State migrants	Growth Rates 1961-71 Total migrants	Growth Rates 1961-71 Male population
40. Sholapur	Sholapur (Mah.)	37.46	19.30	51.53	32. Sholapur	26.53	12.13	45.74	-10.93	-7.17	-5.79	-29.18	-37.15	-11.24	-25.82	-16.43	18.02
41. Ulhasnagar	Thana (Mah.)	35.91	17.80	49.57	33. Ulhasnagar U.A.*	52.75	23.59	39.91	16.84	5.79	-9.66	46.89	32.53	-19.49	933.07	1183.12	679.66
42. Bhopal town group	Schore (M.P.)	50.14	28.24	56.33	34. Bhopal U.A.	48.47	24.00	49.51	-1.67	-4.24	-6.82	-3.33	-15.01	-12.11	54.23	75.48	81.52
43. Hubli	Dharwar (Mysore)	36.89	6.98	18.92	35. Hubli-Dharwar*	36.85	5.82	15.79	-0.04	-1.16	-3.13	-0.11	-16.62	-16.54	89.98	127.64	133.18
44. Meerut town group	Meerut (U.P.)	38.31	11.46	29.9	36. Meerut U.A.	32.86	9.48	28.83	-5.45	-1.98	-1.07	-14.23	-17.28	-3.58	11.56	15.7	34.89
45. Visakhapatnam	Visakhapatnam (A.P.)	41.99	6.51	15.50	37. Visakhapatnam U.A.	45.07	8.19	18.17	3.08	1.68	2.67	7.33	25.81	17.23	151.24	114.32	99.72
46. Mysore	Mysore (Mysore)	30.51	5.48	17.97	38. Mysore	30.67	5.53	18.04	0.16	0.05	0.07	0.52	0.91	0.39	42.96	42.38	41.61
47. Vijayawada	Krishna (A.P.)	61.77	3.89	6.29	39. Vijayawada U.A.	49.35	3.30	6.75	-12.42	-0.59	0.46	-20.11	-15.17	7.31	29.57	20.88	51.30
48. Calicut	Kazhikode (Kerala)	25.32	2.92	11.54	40. Calicut*	15.47	1.40	9.08	-9.85	-1.52	-2.46	-38.90	-52.05	-21.32	-17.16	5.26	72.29
49. Bareilly town group	Bareilly (U.P.)	23.18	4.18	18.04	41. Bareilly U.A.	18.40	3.52	19.15	-4.78	-0.66	1.11	-20.62	-15.79	6.15	1.10	-4.74	20.00
50. Jodhpur	Jodhpur (Raj.)	22.41	5.57	24.84	42. Jodhpur	18.75	4.20	22.40	-3.66	-1.37	-2.44	-16.33	-24.60	-9.82	10.56	22.55	46.48
51. Rajkot	Rajkot (Gujarat)	39.93	3.67	9.20	43. Rajkot	37.78	3.60	9.53	-2.15	-0.07	0.33	-5.38	-1.91	3.59	53.39	48.11	56.52
52. Jullundur	Jullundur (Pun.)	42.45	7.84	18.47	44. Jullundur	36.27	11.91	32.85	-6.18	4.07	14.38	-14.56	51.91	77.86	148.38	39.67	63.48
53. Moradabad	Moradabad (U.P.)	17.29	2.72	15.71	45. Moradabad U.A.	14.41	1.37	9.53	-2.88	-1.35	-6.18	-16.66	-49.63	-39.34	-27.09	20.16	44.19
54. Nasik	Nasik (Mah.)	46.29	6.38	13.79	46. Nasik U.A.*	44.24	8.01	18.11	-2.05	1.63	4.32	-4.43	25.55	31.33	172.37	107.40	116.95
55. Guntur	Guntur (A.P.)	47.93	2.74	5.71	47. Guntur	42.23	2.53	5.98	-5.7	-0.21	0.27	-11.89	-7.66	4.73	33.72	27.65	44.90
56. Kolhapur	Kolhapur (Mah.)	39.07	7.42	18.99	48. Kolhapur U.A.	35.41	10.89	30.74	-3.66	3.47	19.75	-9.37	46.76	179.71	107.09	27.9	40.26
57. Ajmer	Ajmer (Raj.)	35.65	12.11	13.97	49. Ajmer U.A.	25.43	9.07	35.65	-10.22	-3.04	21.68	-28.67	-25.10	155.19	-7.20	-11.57	23.95
58. Ranchi	Ranchi (Bihar)	40.68	11.51	28.29	50. Ranchi U.A.*	40.46	11.07	27.35	-0.22	-0.44	-0.94	-0.54	-3.82	-3.32	103.25	110.25	111.43
59. Aligarh	Aligarh (U.P.)	32.56	1.04	3.96	51. Aligarh	28.78	2.54	8.83	-3.78	1.50	4.87	-11.61	144.23	122.98	228.54	19.24	34.93
60. Durg town group	Durg (U.P.)	85.15	61.52	72.24	52. Durg Bhilai Nagar U.A.	68.49	44.46	64.91	-16.66	-17.06	-7.33	-19.56	-27.75	-10.15	22.56	36.06	69.16
61. Asansol	Burdwan (W.B.)	73.59	18.09	36.06	53. Asansol U.A.*	24.04	12.87	53.57	-49.55	-5.22	15.51	-67.33	-28.86	40.75	66.00	17.96	133.26
62. Gorakhpur	Gorakhpur (U.P.)	43.55	6.25	14.36	54. Gorakhpur U.A.	30.83	4.46	14.45	-12.72	-1.79	-0.09	-29.21	-28.64	0.63	-8.14	-8.73	28.93
63. Jamnagar	Jamnagar (Guj.)	30.72	6.54	21.28	55. Jamnagar U.A.	26.78	5.34	19.94	-3.94	-1.20	-1.34	-12.82	-18.35	6.30	29.09	37.79	58.05
64. Bhavnagar	Bhavnagar (Guj.)	26.08	2.67	9.51	56. Bhavnagar U.A.	24.48	2.53	10.32	-3.6	-0.14	0.81	-12.82	-5.24	8.52	23.96	14.25	31.05
65. Saharanpur	Sharanpur (U.P.)	24.68	6.20	25.73	57. Saharanpur	25.38	4.64	18.30	1.30	-1.56	-7.43	5.40	-25.16	-28.90	-5.94	22.25	25.49

City/Town Group 1961	District/State	Total migrant ratio	Inter-State migrant ratio	Inter-State component of migrants	City/Urban Agglomeration 1971	Total migrant ratio	Inter-State migrant ratio	Inter-State component of migrants	1961-71 Variation IN Total migrant ratio	1961-71 Variation IN Inter-State migrant ratio	1961-71 Variation IN Inter-State component of migrants	1961-71 Percentage IN Variation Total migrant ratio	1961-71 Percentage IN Variation Inter-State migrant ratio	1961-71 Percentage IN Variation Inter-State component of migrants	Growth Rates 1961-71 Inter State migrants	Growth Rates 1961-71 Total migrants	Growth Rates 1961-71 Male population
66. Mangalore	South Kanara (Mysore)	34.97	12.03	34.38	58. Mangalore U.A.*	32.10	11.07	34.49	-2.87	-0.96	0.11	-8.21	-7.98	0.32	38.08	37.67	50.00
67. Belgaum town group	Belgaum (Mysore)	35.82	11.93	33.50	59. Belgaum U.A.	15.60	11.30	21.59	-20.22	-0.63	-11.91	-56.45	-5.28	-35.55	40.72	117.02	48.56
68. Kota	Kota (Rajasthan)	44.33	13.44	30.32	60. Kota	45.49	15.83	34.81	1.16	2.39	4.49	2.62	17.78	14.81	118.36	90.21	85.38
69. Bikaner	Bikaner (Raj.)	21.21	4.87	22.96	61. Bikaner U.A.	17.97	5.05	28.11	-3.24	0.18	5.15	-15.28	3.69	22.43	47.30	20.39	42.09
70. Ujjain	Ujjain (M.P.)	39.83	14.25	35.78	62. Ujjain U.A.	31.99	9.92	31.00	-7.84	-4.33	-4.78	-19.68	-30.39	-13.36	2.98	18.87	48.02
71. Warangal	Warangal (A.P.)	27.84	2.08	7.45	63. Warangal	24.50	1.72	7.04	-3.34	-0.36	-0.41	-11.99	-17.31	-5.10	10.51	17.10	33.07
72. Thana	Thana (Mah.)	68.03	21.13	31.06	64. Thana U.A.	68.68	21.70	31.59	0.65	0.57	0.53	0.95	2.70	1.71	116.77	113.12	111.11
73. Raipur	Raipur (M.P.)	54.42	24.95	45.86	65. Raipur U.A.*	47.45	22.45	47.31	-6.97	-2.5	1.45	-12.81	-10.02	3.16	38.33	34.08	53.75
74. Cuttak	Cuttak (Orissa)	35.02	4.72	13.47	66. Cuttak U.A.	41.09	8.16	19.85	6.07	3.44	6.38	17.33	72.88	47.36	139.37	62.37	38.41
75. Dehra Dun Town group	Dehra Dun (U.P.)	42.85	14.47	33.78	67. Dehra Dun U.A.*	47.80	13.08	27.37	4.95	-1.39	-6.41	11.55	-9.61	-18.97	28.79	58.94	42.46
76. Gauhati	Kamrup (Assam)	59.46	21.79	36.65	68. Gauhati U.A.*	57.13	22.08	38.65	-2.33	0.29	2.00	-3.92	1.33	5.46	83.60	74.14	81.23
77. Jhansi Town group	Jhansi (U.P.)	37.88	18.00	47.53	69. Jhansi U.A.	27.51	9.11	33.11	-10.37	-8.89	-14.42	-27.31	-49.39	-30.33	-40.83	-15.07	17.49
78. Amravati	Amravati (Mah.)	48.52	7.86	16.20	70. Amrawati	43.06	4.96	11.52	-5.46	-2.90	-4.68	-11.25	-36.89	-28.88	-10.28	26.20	42.20
79. Malegaon	Nasik (Mah.)	44.15	10.56	23.93	71. Malegaon	33.56	7.12	21.22	-10.59	-3.44	-2.71	-23.98	-32.57	-11.32	5.08	18.49	55.90
80. Rajahmundry	East Godawari (A.P.)	43.00	2.85	6.63	72. Rajamundry U.A.*	43.71	2.60	5.94	-0.71	-0.25	-0.69	1.65	-8.77	-10.40	33.84	49.29	46.84
81. Tuticorin town group	Tirunelvely (T.N.)	41.74	2.07	4.95	73. Tuticorin U.A.*	32.23	1.06	3.28	-9.51	-1.01	-1.67	-22.78	-48.79	-33.73	-26.87	10.49	43.08
82. Gaya	Gaya (Bihar)	30.60	3.55	11.60	74. Gaya	24.66	2.05	8.30	-5.94	-1.50	-3.30	-19.41	-42.25	-28.44	-30.34	-2.69	20.75
83. Vellore town group	North Arcot (T.N.)	29.75	4.3	14.46	75. Vellore U.A.*	30.90	4.59	14.85	1.15	0.29	0.39	3.86	6.74	2.69	58.15	54.01	48.28
84. Bhagalpur	Bhagalpur (Bihar)	25.92	3.09	11.93	76. Bhagalpur	21.29	2.20	9.96	-4.63	-0.89	-1.97	-17.86	-28.80	-16.51	-14.84	2.05	24.26
85. Akola	Akola (Mah.)	50.55	9.84	19.46	77. Akola	43.45	5.73	13.19	-7.10	-4.11	-6.27	-14.04	-41.76	-32.21	-14.06	26.85	47.57
86. Jammu	Jammu (J&K)	49.77	6.52	13.1	78. Jammu U.A.	37.19	7.14	19.19	-12.58	0.62	6.09	-25.27	9.50	46.48	75.20	19.58	60.00
87. Kakinada (A.P.)	East Godavari	39.28	1.78	4.54	79. Kakinada	36.37	1.80	4.95	-2.91	0.02	0.41	-7.40	1.12	9.03	34.85	23.48	33.34
88. Rampur	Rampur (U.P.)	11.79	2.06	17.46	80. Rampur	10.23	2.57	25.15	-1.65	0.51	7.69	-13.23	24.75	44.04	49.93	4.09	2.00

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89. Udaipur	Udaipur (Raj.)	30.19	5.57	18.45	81. Udaipur	26.59	4.31	16.22	-3.60	-1.26	-2.23	-11.92	-22.62	-12.08	15.69	31.59	49.41
90. Kharagpur	Midnapore (W.B.)	37.44	16.98	45.36	82. Kharagpur	30.99	18.78	60.61	-6.45	1.80	15.25	-17.22	10.60	33.61	16.75	-12.62	5.57
91. Alleppey	Alleppey (Kerala)	23.78	1.63	6.85	83. Alleppey	15.68	0.97	6.20	-8.10	-0.66	-0.65	-34.06	40.49	-9.48	-31.18	-24.00	15.30
92. Sagar town group	Sagar (M.P.)	31.86	9.44	29.62	84. Sagar U.A.	32.30	10.66	33.00	0.44	1.22	3.38	1.38	12.92	11.41	72.78	55.11	52.97
93. Patiala	Patiala (Punjab)	48.17	12.72	26.41	85. Patiala U.A.	41.90	13.70	32.56	-6.27	0.98	6.15	-13.01	7.70	23.28	43.78	16.62	34.10
94. Ahmadnagar	Ahmadnagar (Mah.)	41.98	10.86	25.88	86. Ahmadnagar U.A.*	41.55	12.98	31.23	-0.43	2.12	5.35	-1.02	19.52	20.67	55.55	28.90	30.23
95. Shahjahanpur town group	Shahjahanpur (U.P.)	22.24	2.36	10.60	87. Shahjahanpur U.A.	16.02	1.42	8.43	-6.22	-0.94	-2.17	-27.96	-39.83	-20.47	-24.70	-9.66	25.43
96. Burdwan	Burdwan (W.B.)	42.91	15.60	36.35	88. Burdwan	22.84	6.92	30.30	-20.07	-8.69	-6.05	-46.77	-55.64	-16.64	-41.50	-29.83	31.84
97. Nagercoil	Kanyakumari (T.N.)	26.41	4.09	15.47	89. Nagercoil	23.82	4.10	17.20	-2.59	0.01	1.73	-9.80	0.24	11.18	33.55	20.14	33.21
98. Thanjavur	Thanjavur (T.N.)	37.57	2.24	5.95	90. Thanjavur	33.96	1.73	5.09	-3.61	-0.51	-0.86	-9.6	-22.76	-14.45	-2.25	14.26	26.40
99. Mathura town group	Mathura (U.P.)	32.17	8.88	27.61	91. Mathura U.A.	23.97	6.37	26.56	-8.20	-2.51	-1.05	-25.48	-28.26	-3.80	-16.59	-13.31	16.36
100. Kurnool	Kurnool (A.P.)	36.64	3.89	10.62	92. Kurnool	31.35	2.98	9.51	-5.29	-0.91	-1.11	-14.43	-23.39	-10.45	-3.26	15.44	34.92
101. Nellore	Nellore (A.P.)	41.07	7.34	17.87	93. Nellore	38.62	5.75	14.88	-2.45	-1.59	-2.99	-5.96	-21.66	-16.73	-3.02	16.49	23.87
102. Darbhanga	Darbhanga (Bihar)	28.81	2.06	7.16	94. Dharbhanga	32.93	1.01	4.58	4.12	-0.87	-2.58	14.30	-50.97	-36.03	-35.44	0.87	31.83
103. Elaru	West Godawari (AP)	38.93	1.33	3.41	95. Elaru	36.98	1.19	3.23	-1.95	-0.14	-0.18	-5.00	-10.52	-5.27	5.60	11.40	17.28
104. Muzaffarpur	Muzaffarpur (Bih)	48.46	4.62	9.53	96. Muzaffarpur	41.25	3.85	9.34	-7.21	-0.77	-0.19	-14.87	-16.66	-1.99	-17.83	-16.16	16.42
105. Kolar Gold Fields	Kolar (Mysore)	28.89	22.06	76.37	97. Kolar Gold Fields*	25.52	16.47	64.53	-3.37	-5.59	-11.84	-11.66	-25.33	-15.50	-37.89	-24.49	-16.79
106. Mirzapur-cum-Vindhyachal	Mirzapur (U.P.)	28.75	1.75	9.34	98. Mirzapur-cum-Vindhyachal	12.61	1.18	9.35	-16.14	-0.57	0.01	-56.13	-32.57	0.10	-27.90	-27.92	9.38
107. Ambala Cantt	Ambala (Punjab)	53.10	26.03	49.02	99. Ambala Cantt.	41.05	29.71	72.37	-12.05	3.68	23.35	-22.69	14.13	47.63	17.72	-20.27	3.14
108. Bandar (Masulipatanam)	Krishna (A.P.)	32.78	1.73	5.29	100. Machilipatnam (Bandar)	40.63	1.18	2.90	7.85	-0.55	-2.39	23.94	-31.79	-45.18	-24.25	38.02	11.35

Notes: 1. Figures of migrants in U.A.s of 1971 are not necessarily comparable to the corresponding figures for city/towngroup of 1961. However, the figures for all the Class I urban units of 1961 which are included in any 1971 U.A. are shown against the latter.

2. The 1971 census tabulated the data for migrants to cities/U.A.s by POLR only, whereas for 1961 the data are available by POB alone. However, the 1971 data on migration to urban areas, at district level, are available both by POB and by POLR. The ratio of difference, of the migration figures by the two concepts (POB-POLR), to the migration figure by POLR [i.e., $\frac{POB-POLR}{POLR}$] indicates the extent of adjustment necessary in data by POLR to make them comparable to data by POB. The positive value of this adjustment factor will inflate and the negative value will deflate the migrant figures by POLR to equate them to the migrant figure by POB. The adjustment factor was calculated, separately for inter-State and total migrants to urban areas, for each distict. The adjustment factor calculated for a distirct was applied to adjust data for the city/U.A. coming under that district. In case of U.A.s of Calcutta and Madras involving more than one district each, a combined weighted average of the adjustment factors of all the districts, in the territory of which the U.A. falls, was calculated, weightage given in proportion to the male population of the U.A. coming under a district.

3. The population treated here does not indicate actual population of town/town group/U.A. because of exclusion of persons with (i) unrecorded R/U classification of POB/POLR, (ii) unclassifiable POB/POLR (iii) POB/POLR outside India. Moreover, 1961 figures exclude persons with unstated duration of residence and 1971 census uses uniform multiplicity of 5 for estimation.

*. Not Comparable

a Marginally below comparability criterion.

Source 1. Census of India, 1961, Migration Tables: INDIA, Vol.I, Pt. II-C(iii).

2. Census of India, 1971, Migration Tables: INDIA, Ser. 1; India Pt.II-D(i).

3. Census of India, 1971, Migration Tables, Part II-D(i) (Volumes for the States to which the Class I cities belong).

4. Mitra, Asok, 1980, Population and Area of Cities, Towns and Urban Agglomeration (1962-1971), An ICSSR JNU Study, Bombay, Allied.

first and second positions respectively, whereas all others improve their respective rank positions. Agra is the 11th lowest migration city at both times. Mirzapur-cum-Vindhyachal (106), Varanasi (24), and Belgaum (67) are the three cities which experienced a big erosion of around 50% in their levels of migration and earned the status of being among the ten cities with lowest migration ratios.

Bhagalpur (84) also experienced a decline in migration ratio but it was not enough to keep it in the category of the lowest. However, the actual level of migration given by the migration ratio, deteriorated in 1971 for all the top ten as well as for the lowest ten.

Inter-State Migrant Ratio:

Most of the cities have long-distance migration levels in them which are lower than the corresponding all India level of long-distance migration in urban male population both for 1961 and 1971. For majority of the cities, 74 out of 100 to be exact, the 1971 levels of inter-state migration were lower than their respective 1961 levels (Figures 2.7 and 2.8). Among the top ten, seven cities - Durg (60), Delhi (10), Greater Bombay (9), Bhopal (42), Ambala Cantt (107), Bangalore (15) and Thana (72) are common at both times. Indore (25),

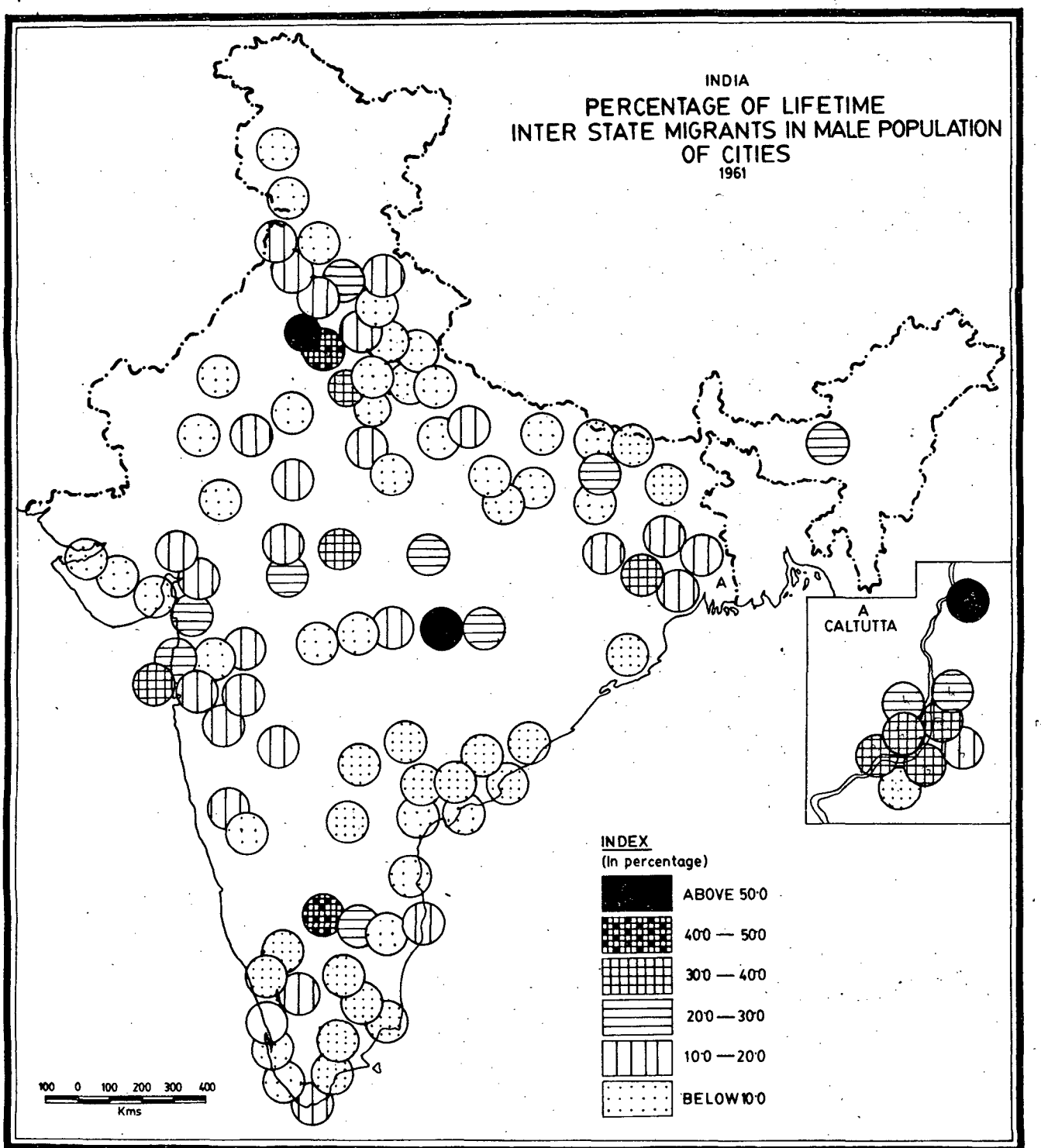
INDIA
PERCENTAGE OF LIFETIME
INTER STATE MIGRANTS IN MALE POPULATION
OF CITIES
1961
A
CALTUTTA
INDEX
(In percentage)
ABOVE 50·0
40·0 — 50·0
30·0 — 40·0
20·0 — 30·0
10·0 — 20·0
BELOW 10·0
100 0 100 200 300 400
Kms

Fig. 2.7

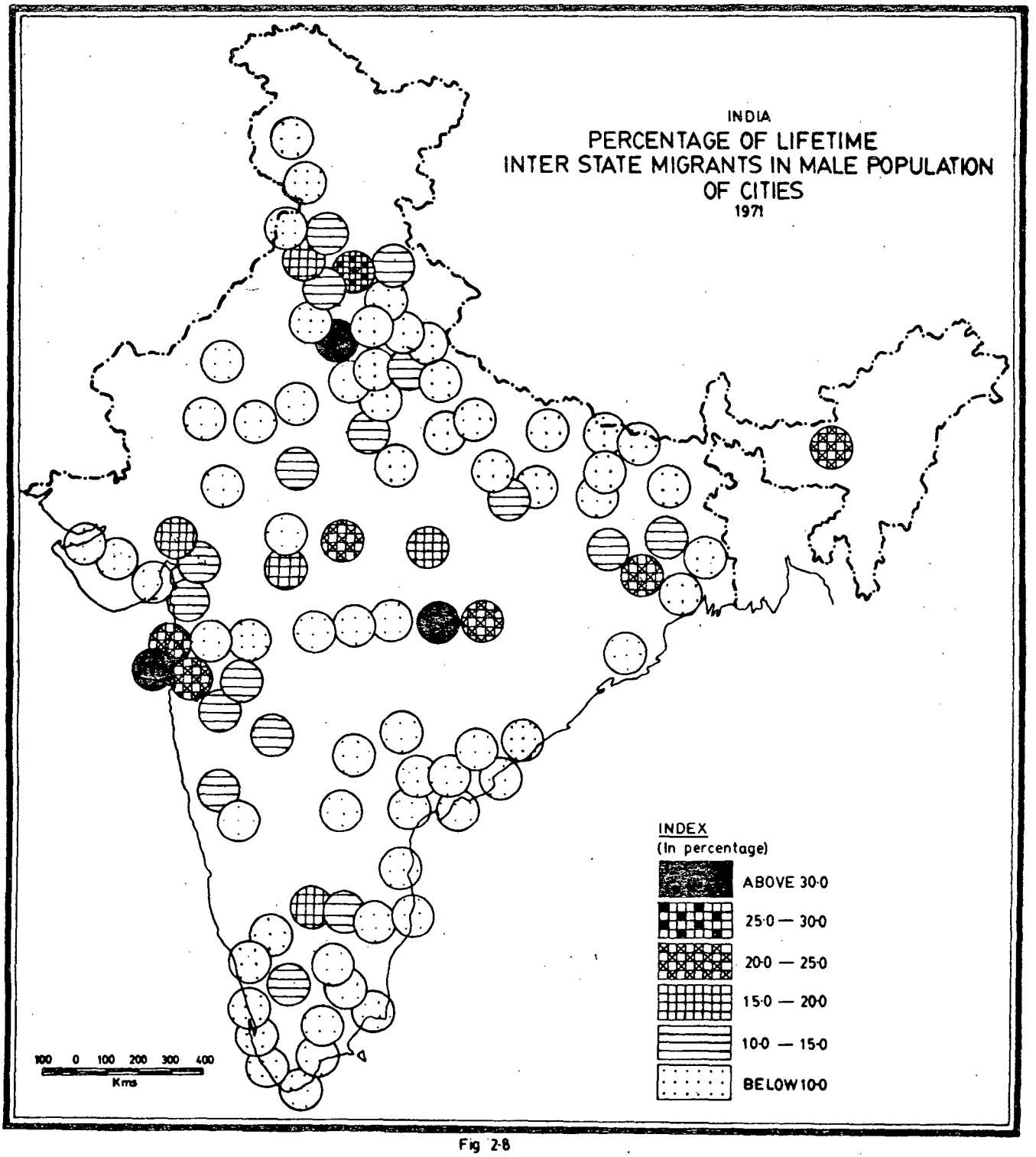
INDIA
PERCENTAGE OF LIFETIME
INTER STATE MIGRANTS IN MALE POPULATION
OF CITIES
1971
INDEX
(In percentage)
ABOVE 30·0
25·0 — 30·0
20·0 — 25·0
15·0 — 20·0
10·0 — 15·0
BELOW 10·0
100 0 100 200 300 400
Kms

Fig 2·8

Sholapur (40), and Jhansi (77) were among the top ten only in 1961 whereas Kharagpur (90), Ludhiana (39), and Kolar Gold Fields (105) were among the highest in 1971 only. The three cities which are not upto the criterion of temporal comparability but still have the highest levels of long-distance migration are Jamshedpur (33), Raipur (73), and Jabalpur (26).

Similarly among ten cities with the lowest inter-state migration ratio seven occur consistently at both the times. These are: Srinagar (35), Eluru (103), Alleppy (91), Bandar (108), Mirzapur-cum-Vindhyachal (106), Gaya (81) and Darbhanga (102), Aligarh (59) and Kakinada (87) in 1961 and Moradabad (53) and Warangal (71) in 1971, were among the lowest. Two cities which occur consistently for both the times as the lowest, but which are not in the category of comparability, are Madurai (21) and Salem (36).

The fact which emerges from the above discussion is that the five cities of Durg, Delhi, Thana, Greater Bombay, and Bhopal are among the top ten w.r.t. migrant ratio as well as inter-state migrant ratio for both the points of time under consideration. Moreover, Srinagar is the only city which has the lowest levels of migration by both the measures, at both the points. It is interesting to mention Vijayawada, one of the highest w.r.t.

migrant-ratio, around 60% and 50% of whose male population in 1961 and 1971 were migrants, has inter-state migrant ratio as low as 4% and 3% respectively. In the same style, the cities which have the lowest inter-state migration ratio at both times, namely, Elaru, Bandar, Gaya and Darbhanga have migration levels almost equal to the all India urban. Agra, Jodhpur and Bikaner are among the cities with half the all India level w.r.t. migrant-ratio and inter-state migrant ratio both.

One significant fact about the spatial pattern of migration of cities is that those with the highest levels w.r.t. both indicators are either in the developed state (e.g. Delhi, Thana, Bombay) or are the industrial centres of otherwise backward states (e.g. Durg, Bhopal). Out of the eight cities, with lowest migration ratios at both times, five are located in Uttar Pradesh, two in Rajasthan and one in the Jammu & Kashmir - all in relatively backward states. Similarly, of the six cities with the consistently lowest inter-state migrant-ratio at two times, two each are from Bihar and Andhra Pradesh, one each from Uttar Pradesh and Kerala.

Temporal Changes in migration levels of cities:

The two-third majority of the cities followed the trend of decline. However, 23 cities recorded

increasing w.r.t. migration ratio and 26 cities w.r.t. inter-state migration ratio. Surat (28), Ludhiana (39), Ulhasnagar (41), Vishakhapatnam (45), Kota (68), Thana (72), Cuttack (74), Sagar (92), and Mysore (46) were the only nine cities which registered increase w.r.t. both ratios. Surat and Ulhasnagar recorded the highest increases in both the ratios. Ludhiana recorded highest increase w.r.t. inter-state migration ratio and the lowest increase w.r.t. migration-ratio. Surat also recorded higher increase in inter-state migration ratio than the same in the total migrant ratios. One thing common to all of these nine is that they have comparatively higher levels of migration in their male population, one of them, namely, Thane, being one of the highest w.r.t. both the ratios.

Kanpur, Varanasi, Allahabad, Jamshedpur, Vijayawada, Ajmer, Durg-Bhillainagar, Jhansi are those which experienced decline of highest order w.r.t. migration ratio as well as their inter-state migration ratio.

A look at the distribution of inter-state component of migration for the cities, shows that those of the cities having highest and lowest inter-state migration ratio, also behave in the same manner w.r.t. inter-state component.

Growth of Long-distance male migrant, total male migrants and male population:

Fifty five out of the hundred cities, experienced growth of their male population which was higher than the growth of urban population for India as a whole. Ludhiana, Vishakhapatnam, and Thane registered around 100% growth. Only a few, namely, Sholapur, Kharagpur, Alleppey, Jhansi, Mirzapur-cum-Vindhyachal and Ambala experienced less than 20% growth in the male population.

Only in six cities namely Belgaum (67), Kota (68), Thane (72), Sagar (92), and Bandar (108) the growth of migrants was greater than the growth of male population. In all other cities growth of male migrants was less than the growth of male population. In fact, there were 20 cities where the growth of migrants was negative, meaning thereby that the absolute number of male migrants in them in 1971 was lower than the number in 1961. In 14 out of these 20 cities the magnitude of inter-state migrants also declined. The cities with the highest negative growth in total as well as long-distance migration were Varanasi, Alleppey, Bandar, Kolar Gold Fields, Mirzapur-cum-Vindhyachal, where in each of them the number of migrants of both categories fell by a quarter. Ajmer (57), Mathura (99) and Gorakhpur (62) registered moderate declines in both. Agra (23), Jhansi (77), Gaya (82), Shahjahanpur (95), experienced higher rate

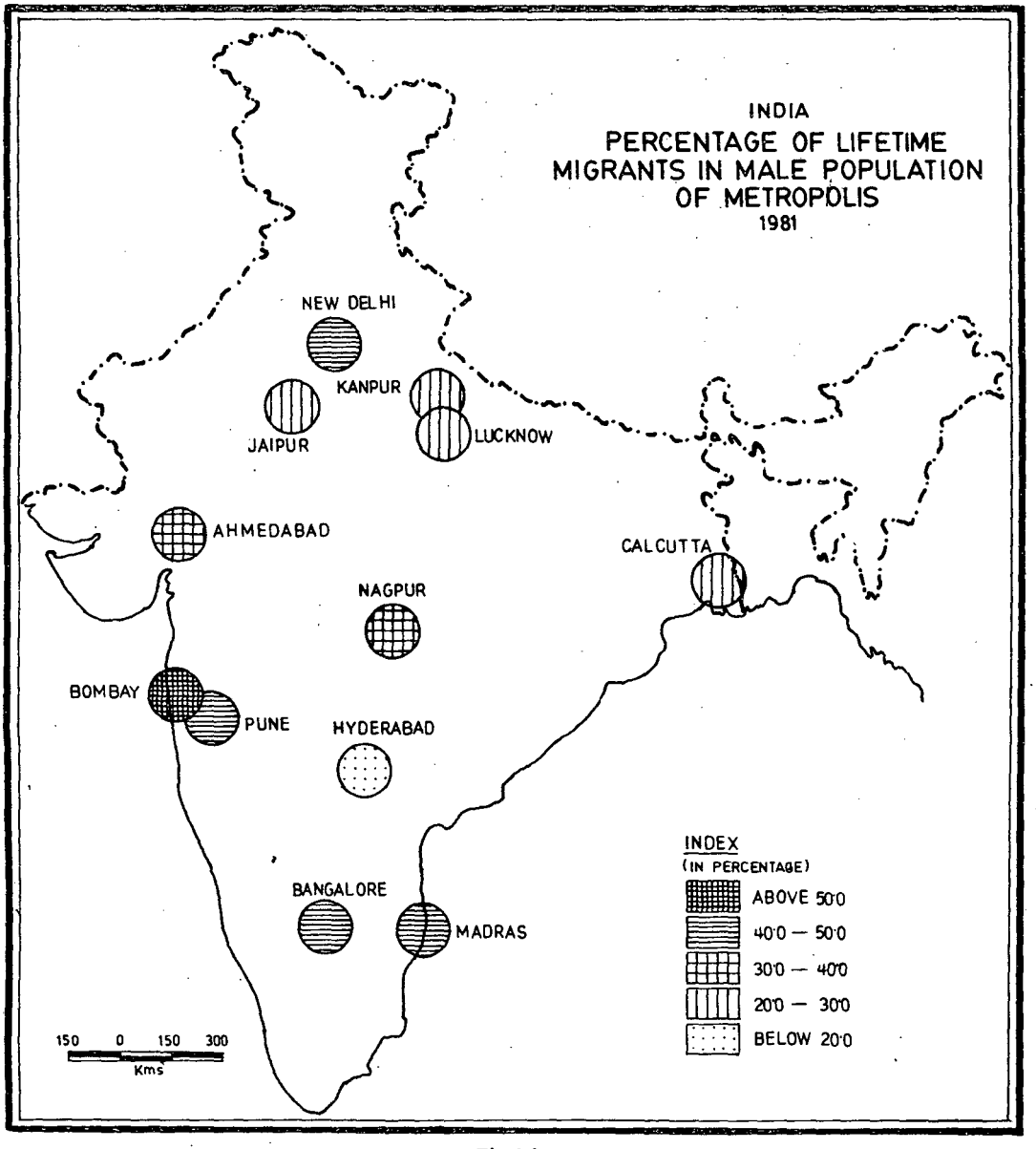
INDIA
PERCENTAGE OF LIFETIME MIGRANTS IN MALE POPULATION OF METROPOLIS
1981
NEW DELHI
KANPUR
JAIPUR
LUCKNOW
AHMEDABAD
CALCUTTA
NAGPUR
BOMBAY
PUNE
HYDERABAD
BANGALORE
MADRAS
INDEX
(IN PERCENTAGE)
ABOVE 50·0
40·0 — 50·0
30·0 — 40·0
20·0 — 30·0
BELOW 20·0
150 0 150 300
Kms

Fig: 2.9

of decline in the number of inter-state male migrants than in the number of total male migrants.

Jamshedpur (33), Moradabad (53), Tuticorin (81) and Bhagalpur (84) are the four cities which had positive growth of migrants but the number of inter-state migrants in them declined. On the other hand, there were 6 cities where inter-state migrants were growing but the number of total male migrants was declining. They are Kanpur (16), Lucknow (19), Allahabad (27), Bareilly (49), Kharagpur (90) and Ambala Cantt (107). Most of the cities where the absolute number of inter-state and total migrants was falling were in the relatively backward states of Uttar Pradesh, Bihar, Rajasthan and Madhya Pradesh.

Migration in Metropolitan Cities:

Table II.11 gives the migration situation in the metropolitan cities. Figures 2.9 and 2.10 portray the latest migrant ratios and inter-state migrant ratios, respectively.

Bombay, Delhi and Pune stood first, second and third w.r.t. male migrant ratio consistently for all the three points of time. Delhi had the highest inter-state migrant ratio followed by Bombay, Pune was 6th w.r.t. inter-state migrant level in its male population at all times. For the third place in this respect

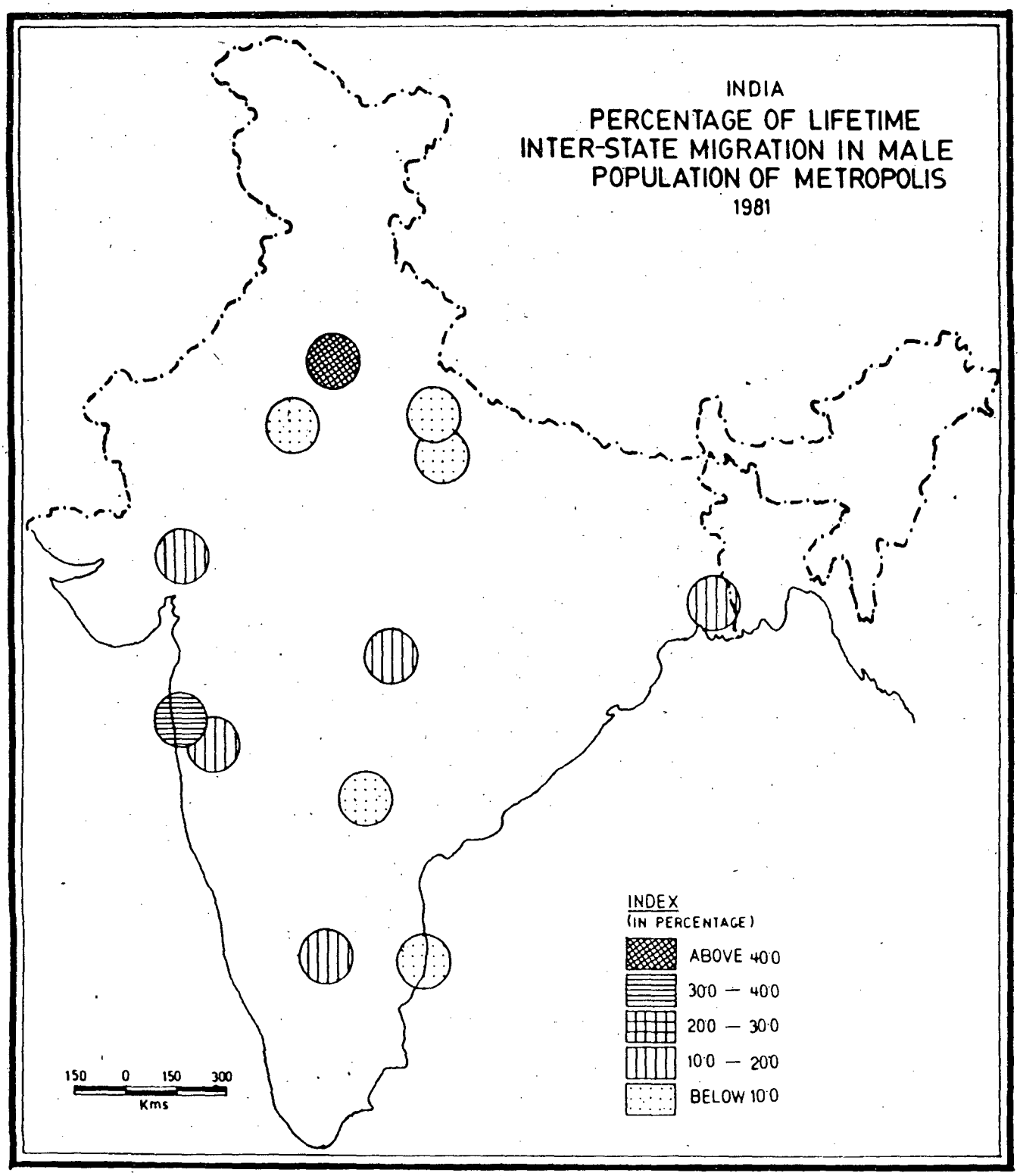
INDIA
PERCENTAGE OF LIFETIME
INTER-STATE MIGRATION IN MALE
POPULATION OF METROPOLIS
1981
INDEX
(IN PERCENTAGE)
ABOVE 40·0
30·0 — 40·0
20·0 — 30·0
10·0 — 20·0
BELOW 10·0
150 0 150 300
Kms

Fig: 2.10

TABLE II.11

PERCENTAGE OF INTERSTATE AND TOTAL LIFETIME MALE MIGRANTS IN METROPOLISES OF INDIA AND GROWTH RATES - 1961 - 1971 - 1981

City/Town(1961)	District/State	1961 Inter State	1961 Total	1961 Inter-State Component	City/U.A (1971-1981)	District/State	Inter-State 1961	Inter-State 1971	Inter-State 1981	Total 1961	Total 1971	Total 1981	Inter-state Migrants as % of Total migrants 1961	1971	1981	Growth-rates of inter-State migrants 1961-71	1971-81
1. Calcutta	Calcutta (W.B.)	36.08	49.16	73.40	1. Calcutta U.A.	Calcutta, Twenty, Four Parganas, Hoogly Howrah, Nadia.(W.B.)	N.A.	15.71	17.23	N.A.	27.10	26.64	N.A.	57.97	64.69	3.65	47.98
2. Howrah	Howrah (W.B.)	34.69	53.78	64.50													
3. South Subarban	Twenty Four Parganas (W.B.)	12.70	44.13	28.77													
4. Bhatpara	Twenty Four Parganas (W.B.)	50.19	63.17	79.45													
5. South Dum-Dum	Twenty Four Parganas (W.B.)	17.57	52.90	33.21													
6. Kamarhati	Twenty Four Parganas (W.B.)	29.15	49.06	59.41													
7. Garden Reach	Twenty Four Parganas (W.B.)	30.12	46.59	64.63													
8. Baranagar	Twenty Four Parganas (W.B.)	23.10	51.58	44.79													
9. Greater Bomaby	Greater Bombay (Mah.)				2. Greater Bombay	Gearter Bombay(Mah.)	37.52	33.19	31.04	66.96	59.85	53.87	56.03	55.47	57.62	27.56	26.51
10. Delhi Municipal Corp.	Delhi (Delhi)	47.76	53.34	89.54	3. Delhi U.A.	Delhi (Delhi)	N.A.	42.55	42.16	N.A.	46.79	48.12	N.A.	90.94	87.60	89.31	63.05
11. New Delhi	Delhi (Delhi)	70.19	74.51	94.20													
12. Madras	Madras (Madras)				4. Madras U.A.	Madras, Chengleput (Tamil Nadu)	10.84	9.03	7.51	37.08	36.30	33.25	29.23	24.89	22.60	53.65	11.16
13. Bangalore C and Town Board Area	Bangalore (Maysore)				5. Bangalore U.A.	Bangalor (Karnataka)	21.46	17.02	16.26	41.35	38.35	37.35	51.91	44.38	43.52	21.05	67.92
14. Hydrabad	Hyderabad (A.P.)				6. Hyderabad U.A.	Hyderabad,Rangareddy (andhra Pradesh)	6.57	8.10	5.19	25.65	23.54	18.65	5.72	34.40	27.80	100.86	-9.19
15. Ahmedabad	Ahmedabad (Gujarat)				7. Ahmedabad U.A.	Ahmedabad (Gujarat)	17.47	15.51	13.64	51.20	43.39	36.03	34.12	35.75	37.86	32.72	27.60
16. Kanpur Town Group	Kanpur (U.P.)				8. Kanpur U.A.	Kanpur (U.P.)	5.54	4.71	3.31	47.99	35.66	27.46	11.54	13.20	12.08	12.73	-10.24
17. Poona	Poona (Mah.)				9. Pune U.A.	Pune Maharashtra	12.63	14.99	10.61	50.05	46.68	48.50	25.22	32.20	22.92	30.15	5.19
18. Nagpur	Nagpur (Mah.)				10. Nagpur U.A.	Nagpur (Maharashtra	13.66	9.22	10.55	43.23	34.45	31.90	31.60	26.77	33.07	-1.60	60.20
19. Lucknow Town Group	Lucknow (U.P.)				11. Lucknow U.A.	Lucknow (U.P.)	6.34	5.85	3.56	40.83	32.34	25.48	15.52	18.07	13.95	15.25	-23.66
20. Jaipur	Jaipur (Rajastan)				12. Jaipur U.A.	Jaipur (Rajastan)	7.21	6.66	7.68	29.63	27.00	29.68	24.33	24.66	25.87	53.31	86.52

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* 1971 and 1981 figures are not comparable with the corresponding figures for 1961. Also, 1961-71 growth rate not comparable with 1971-81 growth rates.
a Marginally below comparablity criterion
N.A. Not Available

Note: 1. The U.A's of Calcutta and Delhi have more than one class I urban units each as their 1961 counter-parts. The 1961 figures for the latter have been shown separately.
2. The 1971 and 1981 censuses tabulated the data for migrants to cities/U.A's by POLR only, whereas for 1961 migration figures are available by POB alone. However, for 1971 and 1981, the district level data on migration to urban areas are available both by POB and POLR. The ratio of difference, of the migration figures by the two concepts (POB - POLR), to the migration figure by POLR (i.e. POB-POLR/POLR) indicates the extent of a adjustment necessary in data by POLR to make them comparable to data by POB. The positive value of this adjustment factor will inflate and the negative value of it will deflate the migrant figures by POLR, to equate them to migrant figure by POB. The adjustment factor was calculated, separately for inter state and total migrants to urban areas, for each district. The adjustment factor calculated fora district was applied to adjust data for the city/U.A. coming under that district. In case of the U.A.s of Calcutta, Madras and Hydrabad, involving more then one district each, a combined weighted avarage of the adjustment factors of all the distrjcts, in the territories of which a particular U.A. falls, was calculated, weights to the male population of the U.A. coming under a districts.
3. The population treated here does not indicate the actual population of town/town group/U.A. because (a) for all three censuses those with POB/POLR outside India have been excluded, (b) 1961 and 1971 censuses exclude males whose R/U classification of POB was not reported, (c) returns with unclassifiable POB were excluded from 1961 figures and those with unclassifiable POLR from 1971 figures, and (d) 1961 figures exclude those with unstated duration of residence. Moreover, the opposite of (b) and (c) holds for 1981 figures, while 1981 figures includes those with unstated duration of residence. This limitation on comparability howsoever small, remains.

Source : 1. Census of India, 1961, Migration Tables : INDIA, Vol.1, Pt. II-C (iii).
2. Census of India, 1971, Migration Tables : INDIA, Ser. 1; India Pt. II-D (i)
3. Census of India, 1971, Migration Tables, Part II-D (i) (Volumes for the States to which the Class I Cities belong).
4. Census of India, 1981, Migration Tables, Part V - A & B, (Unpublished Volumes for the states to which the metropolises belong).
5. Mitra, Ashok, 1980, Population and Area of Cities, Towns and Urban Agglomeration (1982-1971), An ICSSR JNU Study, Bombay, Allied.

Bangalore and Calcutta have neck-to-neck competition.

The lowest migrant-ratio was recorded by Hyderabad for all the three time points, followed by Jaipur in 1961 and 1971 and by Lucknow in 1983. The third lowest was Calcutta. With regard to inter-state migrant-ratio Hyderabad was the third lowest and Lucknow was the second lowest for all time points covered in the study. Kanpur held the distinction of having the lowest level of long-distance migration in its male population throughout the study period. The migration ratio for all the cities declined continuously throughout the study period except that Delhi U.A. and Jaipur U.A. have small increase in 1971-81. Highest decline is recorded by Kanpur U.A., Lucknow U.A. and Ahmedabad U.A. For most of the cities, the decline during 1961-71 is more than the same during 1971-81.

As regards the inter-state migration ratio, the 1981 levels for all cities are lower than corresponding 1961 levels except that Jaipur U.A. experienced an increase over time in this respect.

Growth rates of male migrants and male population:

All metropolitan cities except Kanpur and Lucknow had higher than the all India rate of growth of urban male population as well as male migrants in 1961-71. During

the next decade, however, all except Delhi, Bangalore, Pune and Jaipur had growth of their male population as well as growth of male migrants which was significantly lower than the corresponding all India levels. In fact, the two of them, the laggards since 1961-71 decade, namely Kanpur and Lucknow, experienced a decline in the number of inter-state and total male migrants, and their male population growth was half the same for the all India urban male population.

It can be said that the metropolitan cities with high levels of migration and high growth of male migrants and male population, namely, Greater Bombay, Delhi, and Bangalore belong to relatively developed parts of the country whereas those with low and fast declining levels of migration in their population, experiencing low growth of male migrants and male population like Kanpur and Lucknow belong to the relatively backward state of Uttar Pradesh.

CHAPTER III

SOCIO-ECONOMIC CONTEXT OF MIGRATION IN INDIA

INTRODUCTORY STATEMENT

The purpose of this chapter is to look at the broad contours of the Indian economy in an attempt to understand the complexity of spatial and temporal variations in migration and urbanisation in India which we observed in the earlier chapter. The level and sectoral structure of income, the pressure on land, the labour productivity and land productivity in agriculture and the development of irrigation in each state were examined. It is followed by a discussion on male employment in non-household manufacturing and the rates of male unemployment ~~and the rates of male unemployment~~ in the rural and urban areas separately for all states. Apart from these variables relating to income and employment structure, some other variables like road length per 100 square kilometres, hospitals per lakh of population, per capita expenditure on education were also considered. The per capita expenditure on education in rural areas was compared with the same for total population. The regional dimension of the economy and the changes occurring in it over time have been analysed, and the rural-urban differentials discussed, wherever it was possible and relevant. The idea in doing so, is to explore the

TABLE III.1

Levels of Inter-State Disparity in Various Socio-Economic Indicators 1961,1971,1981

Year / Indicator	Coefficient of Variation* 1961	1971	1981
Percentage of male workers in non-household manufacturing (X_{25})	127.80	110.28	79.40
Percentage of urban male workers in non-household manufacturing (X_{26})	730.39	32.79	27.6
Average area under agriculture per worker (Hectare) (X_{27})	33.73	46.50	50.90
Average agricultural output per worker (In Rupees) (X_{28})	26.31	61.62	74.33
Average agricultural yield (Rs./Hectare) (X_{29})	35.84	34.62	56.29
Percentage of area under irrigation (X_{30})	58.25	66.77	72.20
Average per capita Income (X_{31})	34.68	34.27	39.86
Share of primary sector in NSDP at constant prices (X_{32})	29.39	31.33	34.30
Share of secondary sector NSDP at constant price (X_{33})	42.60	33.96	29.39
Share of tertiary sector in NSDP at constant prices (X_{34})	31.72	37.96	35.36
Road length per 100 sq. kms. (X_{35})	15.89	74.16	196.62
Per capital expenditure on Education (in Rs.)(X_{36})	83.63	90.00	38.78
Per capita expenditure on edn. rural areas (Rupees) (X_{37})	109.43	96.14	N.A.
Hospitals per lakh population (X_{38})	36.60	56.83	60.59
	1972-73	1977-78	1983
Rate of male unemployment in rural areas	53.97	58.65	61.29
Rate of Male unemployment in urban areas	48.92	61.74	50.03

* Based on 15 States Comparable over time.

The States with the highest per capita income levels at all points of study period are Delhi, Maharashtra, West Bengal, Gujarat and Punjab and those with the lowest levels of it are Manipur, Bihar, Orissa, Madhya Pradesh and Uttar Pradesh (Table III.2). It can generally be said that the States with high P.C.I. have high levels of migration in their male population and those with low levels of P.C.I., low levels of migration in them. Although the rural-urban, short-distance and long-distance migration proportions will have significant regional variations. Migration in urban areas (X_3) is more strongly positively correlated with P.C.I. levels than the migration in rural areas (X_2) is with the P.C.I.[4] But the coefficient of correlation of inter-state migration in rural areas (X_5) with P.C.I. is slightly higher than the some of inter-state migration in urban areas (X_6) with the P.C.I. The per capita income level is more negatively related with X_8 and X_9. Long-distance migration has high correlation and short-distance migration has moderately negative correlation with income levels. This means

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4. Mention of the correlations in the chapter has been made only of those coefficients that are statistically significant at .5 per cent level, unless otherwise specified. The (113x113) correlation coefficient matrix is given in Appendix II.

TABLE III.2

Percapita Income and Share of Primary, Secondary and Tertiary Sectors in N.S.D.P., 1961, 1971, 1981

State/UT	P.C.I (X_{31})			Primary(X_{32})			Secondary(X_{33})			Tertiary (X_{34})		
	1961	1971	1981	1961	1971	1981	1961	1971	1981	1961	1971	1981
1. Andhra Pradesh	285.00	586.00	683.50	61.79	57.17	49.10	10.65	13.43	16.16	27.56	29.40	34.74
2. Assam	251.00	539.50	550.30	57.47	63.51	63.01	21.47	14.08	13.19	21.06	22.11	23.08
3. Bihar	218.50	404.00	447.50	56.00	62.76	54.28	10.62	16.84	21.70	31.38	20.40	24.02
4. Gujarat	375.50	830.50	904.50	41.82	48.91	35.15	25.73	20.83	27.10	32.45	30.26	37.75
5. Haryana	N.A.	882.00	1065.50	N.A.	64.76	52.36	N.A.	15.22	19.56	N.A.	20.02	28.08
6. Himachal Pradesh	N.A.	679.00	706.50	N.A.	57.16	53.25	N.A.	16.88	16.97	N.A.	25.96	29.68
7. Jammu & Kashmir	268.50	547.50	677.00	67.68	58.92	50.87	8.71	4.57	18.63	23.61	29.51	30.59
8. Karnataka	303.00	684.00	657.50	61.40	53.57	49.41	15.16	18.56	22.51	23.44	21.87	28.08
9. Kerala	257.50	603.50	627.50	55.98	49.04	40.32	15.24	16.32	19.81	28.78	34.24	39.87
10. Madhya Pradesh	255.50	475.50	502.50	69.56	62.17	54.62	10.94	14.73	18.83	19.50	23.10	26.55
11. Maharashtra	404.00	784.50	993.50	41.84	28.62	27.63	26.42	34.19	35.25	31.74	37.19	37.12
12. Manipur	150.00	385.50	462.00	55.69	54.00	59.10	10.28	8.32	8.32	34.03	37.64	32.58
13. Orissa	222.50	452.50	546.50	64.58	67.29	64.62	11.66	10.37	12.17	23.76	22.34	23.21
14. Punjab	366.00	1077.00	1411.50	54.01	58.36	49.81	15.63	15.31	17.30	30.36	26.33	32.89
15. Rajasthan	296.50	578.00	558.50	57.00	64.55	51.35	15.78	13.57	15.86	27.22	21.88	32.79
16. Tamil Nadu	329.50	590.00	641.00	51.99	39.86	27.69	17.59	26.12	33.51	30.42	34.02	38.80
17. Tripura	261.00	521.00	625.00	62.72	70.00	60.20	5.71	7.02	8.51	31.57	22.98	31.29
18. Uttar Pradesh	256.00	468.00	519.00	65.70	60.26	54.66	10.59	14.93	18.98	23.71	24.81	26.36
19. West Bengal	384.00	730.00	749.00	42.55	43.13	44.88	24.28	22.66	22.59	33.17	32.21	32.53
20. Delhi	676.50	1217.50	1404.00	7.10	6.96	4.04	32.12	25.70	21.34	60.78	67.34	74.62
21. INDIA	310.50	630.00	706.00									

Note: 1. Owing to differences in source material used, the figures for different States/Union Territories are not strictly comparable. Moreover, even for a State/Union territory, the estimates relating to 1961 are not strictly comparable to the 1971 and 1981 estimates due to change of base year for the constant price series, modification in the estimation procedure, use of different methodology and use of N.I.C. instead of S.I.C., year 1970-71 onwards. While comparable estimates for individual years are not comparable over the states yet the comparability may not extend over time.

2. The share of different sectors in Net State domestic product in 1961, 1971, and 1981 refer to 1960-61, 1970-71 and 1980-81 respectively.

3. The figure for per capita income in this table is a two-year average, of 1960-61 and 1961-62 in the case of 1961, of 1970-71 and 1971-72. for 1971, and of 1980-81 and 1981-82 for 1981.

4. The 1961 figures are at 1960-61 constant prices. However, for Assam they are at 1949-49 prices and the figures for Andhra Pradesh, Madhya Pradesh, Orissa, Uttar Pradesh and for the all India are at 1970-71 constant prices. The 1961 figures for Assam and Punjab refer to 1960-61 only instead of being a two-year average.

5. The 1981 per capita income of Tripura refers to year 1980-81, instead of being a two-year average. The net state domestic product figures for Tripura, used while calculating the sectoral shares in 1980-81 are 1979-80 figures.

Source: Central Statistical Organisation (India), Ministry of Planning, 1984. Estimates of State Domestic Product (1960-61 to 1982-83).

that at higher level of P.C.I., the level of long-distance migration in male population is high and opposite is the case with the short-distance migration. The high levels of long-distance than short distance migration in Delhi and West Bengal, which are the states with highest per capita income is a case in point. But it must be mentioned that the States with highest levels of per capita income also have a continuous decline in migration ratios. However it can be said that the low-income states of Bihar, Uttar Pradesh, Rajasthan and Kerala are associated with the symptoms of low migration levels and steeper declines in them, high-inter-state outmigration from rural as well as urban areas and a negative net inter-state migration in their male population.

Sectoral Shares in Net State Domestic Product:

Table III.2 and Figures 3.1, 3.2 and 3.3 show relative contribution of primary, secondary and tertiary sectors in NSDP of various states. The states of Uttar Pradesh, Bihar and Rajasthan have lowest levels of per capita income and highest share of their Net State Domestic Product (NSDP) comes from the primary sector (Table III.2). These are the states with consistently low share of the secondary sector in NSDP, although

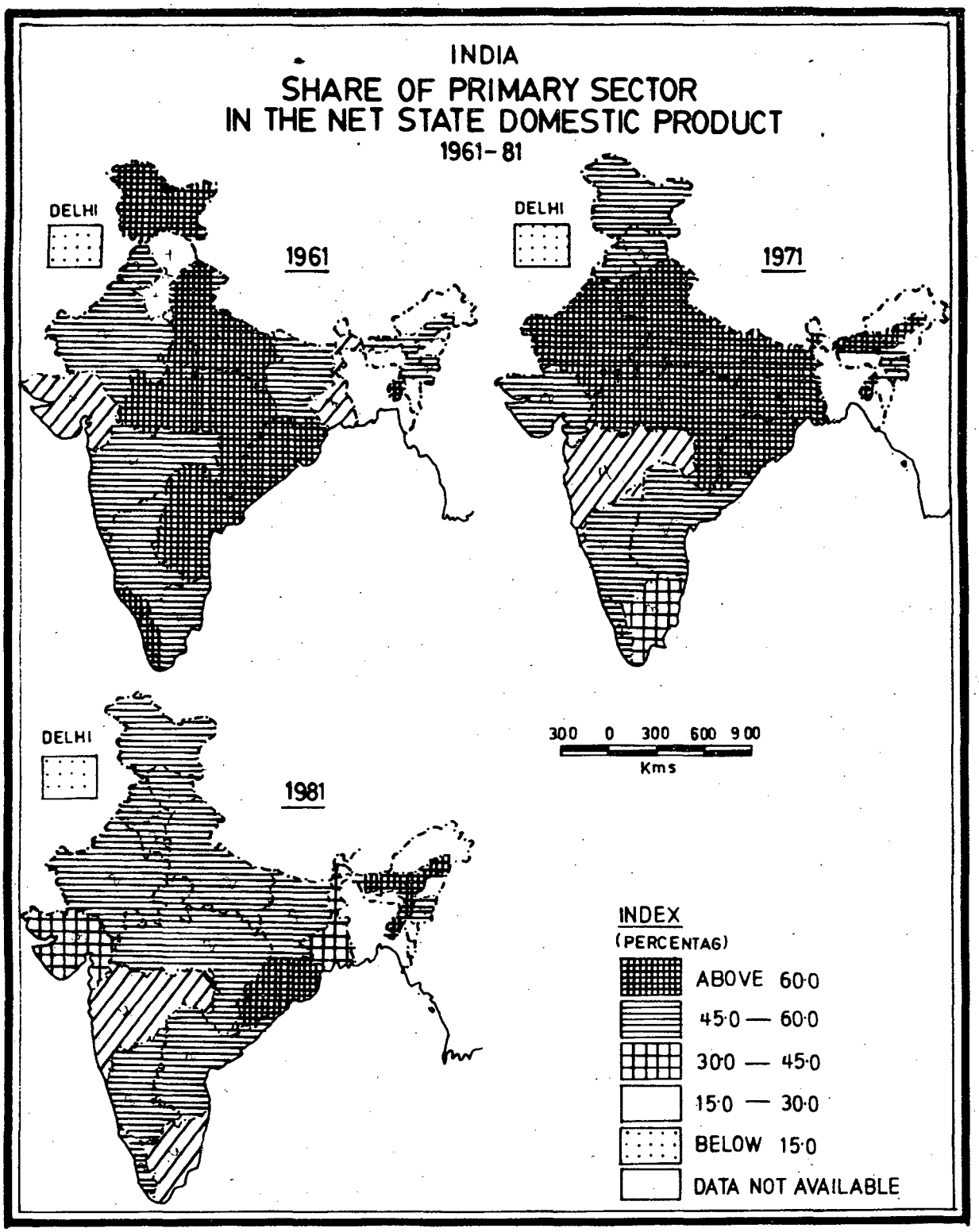
INDIA
SHARE OF PRIMARY SECTOR
IN THE NET STATE DOMESTIC PRODUCT
1961-81
DELHI
1961
DELHI
1971
DELHI
1981
300 0 300 600 900
Kms
INDEX
(PERCENTAGE)
ABOVE 60·0
45·0 — 60·0
30·0 — 45·0
15·0 — 30·0
BELOW 15·0
DATA NOT AVAILABLE

Fig: 3·1

Bihar and Rajasthan have relatively higher share, almost comparable to that of West Bengal and Maharashtra, of NSDP coming from the tertiary sector. Incidentally these are the states which have the lowest levels of migration, exhibit steeper decline in them, have high rural as well as urban-outmigration, and have experienced a negative decadal migration. The relatively high shares of tertiary sector in Bihar and Rajasthan can be related with their fast growing urban (to total population) ratio (X_{18}) as also with the dichotomy they exhibit, of having the lowest migration levels in rural areas and higher migration levels in urban areas. The other states with low per capita income, bigger primary sector, smaller secondary and tertiary sectors like Madhya Pradesh, Orissa, Assam, Tripura which although do not follow this kind of relation so strictly, but belong to the same category.

The states of Delhi, Maharashtra, West Bengal, Gujarat and Tamil Nadu are the states having high levels of per capita income at all the three points of time. They have consistently the lowest share of primary sector and consistently the highest shares of secondary and tertiary sector in the Net State Domestic Product. Punjab is the only state, among the states with the highest per capita income, which maintains high share of primary sector, significantly lower share in the

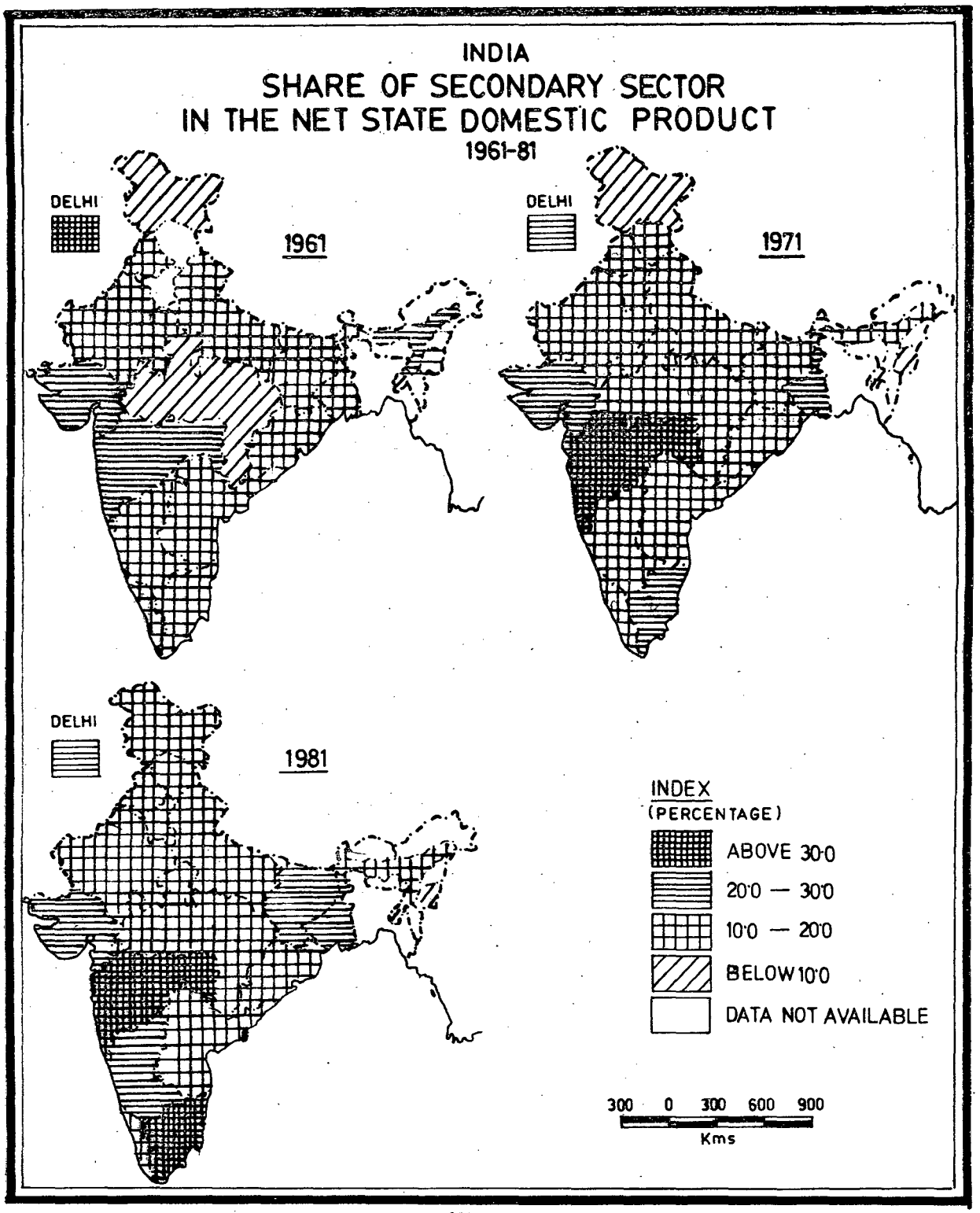
INDIA
SHARE OF SECONDARY SECTOR
IN THE NET STATE DOMESTIC PRODUCT
1961-81
DELHI
1961
DELHI
1971
DELHI
1981
INDEX
(PERCENTAGE)
ABOVE 30·0
20·0 — 30·0
10·0 — 20·0
BELOW 10·0
DATA NOT AVAILABLE
300 0 300 600 900
Kms

Fig: 3·2

secondary sector and slightly lower share in the tertiary sector as compared to the other high per capita income states. Karnataka, another high income state, has significantly higher share of primary sector and significantly lower share of secondary sector and is among the states having the lowest share of tertiary sector in the NSDP.

Our correlation results tell that the share of primary sector in NSDP has a negative and significant correlation with the migration level in total male population in rural as well as urban areas. The share of tertiary sector has higher positive correlation with migration levels in male population than the share of secondary sector has with it. But if we consider male migration in rural and urban areas separately, secondary sector seems to be more positively correlated than the tertiary sector. The correlation of secondary sector with long-distance migration, specially in urban areas is high, as also that of tertiary sector with long-distance (specially in rural areas) seems significant and high.

Temporal Changes in Sectoral Shares:

If we have a look at the Table III.3, we find that the decline in the share of primary sector in NSDP during 1971-81 has taken place for all states

TABLE III.3

Percentage change in per capita : share of primary, secondary and teritiary sectors in the Net Domestic Product 1961-71 and 1971-

State/UT	Per capita income (X_{31})		Primary sector (X_{32})		Secondary Sector (X_{33})		Tertiary Sector (X_{34})	
	1961-71	1971-81	1961-71	1971-81	1961-71	1971-81	1961-71	1971-81
1. AndhraPradesh	106.667	16.044	-7.477	-14.116	26.103	20.766	6.676	18.163
2. Assam	114.940	20.002	11.032	-1.254	-34.420	-6.321	4.986	4.387
3. Bihar	84.897	10.767	8.207	-13.512	58.569	28.860	-34.990	17.745
4. Gujarat	121.467	8.910	16.954	-28.133	-19.044	30.101	-6.749	24.752
5. Haryana	N.A.	21.258	N.A	-19.148	N.A	28.515	N.A	40.260
6. HimachalPradesh	N.A.	4.050	N.A	-6.84	N.A.	0.533	N.A.	14.330
7. Jammu&Kashmir	103.911	23.653	-17.376	-9.031	67.279	27.865	24.989	3.555
8. Karnataka	125.743	-3.874	-2.980	-17.056	22.427	21.282	-6.698	26.395
9. Kerala	134.369	3.977	-11.683	-18.447	7.087	21.385	18.972	16.443
10.MadhyaPradesh	93.933	1.413	-10.621	-12.144	34.644	27.834	18.462	14.935
11.Maharashtra	94.183	18.993	-31.597	-3.489	29.410	3.100	17.171	-0.188
12.Manipur	155.670	20.469	-3.035	9.444	-19.066	0.009	10.608	-13.443
13.Orissa	103.731	20.773	4.196	-3.968	-11.063	17.358	-5.976	3.894
14.Punjab	194.262	31.058	8.054	-14.650	-2.047	12.998	-13.274	24.915
15.Rajasthan	94.941	-3.374	13.246	-20.449	14.005	16.875	-19.618	49.863
16.TamilNadu	79.059	8.644	-23.331	-30.532	48.493	28.292	11.934	14.051
17.Tripura	99.618	19.578	11.607	-14.000	22.942	21.225	-27.209	36.162
18.UttarPradesh	82.812	10.897	-8.280	-9.293	40.982	27.127	4.639	6.247
19.WestBengal	82.104	1.370	6.063	-1.440	-6.672	-0.309	-2.89	42.235
20.Delhi	79.970	15.318	-1.972	-41.954	-19.988	-16.965	10.793	10.811

Note: Ibid

Source : Ibid

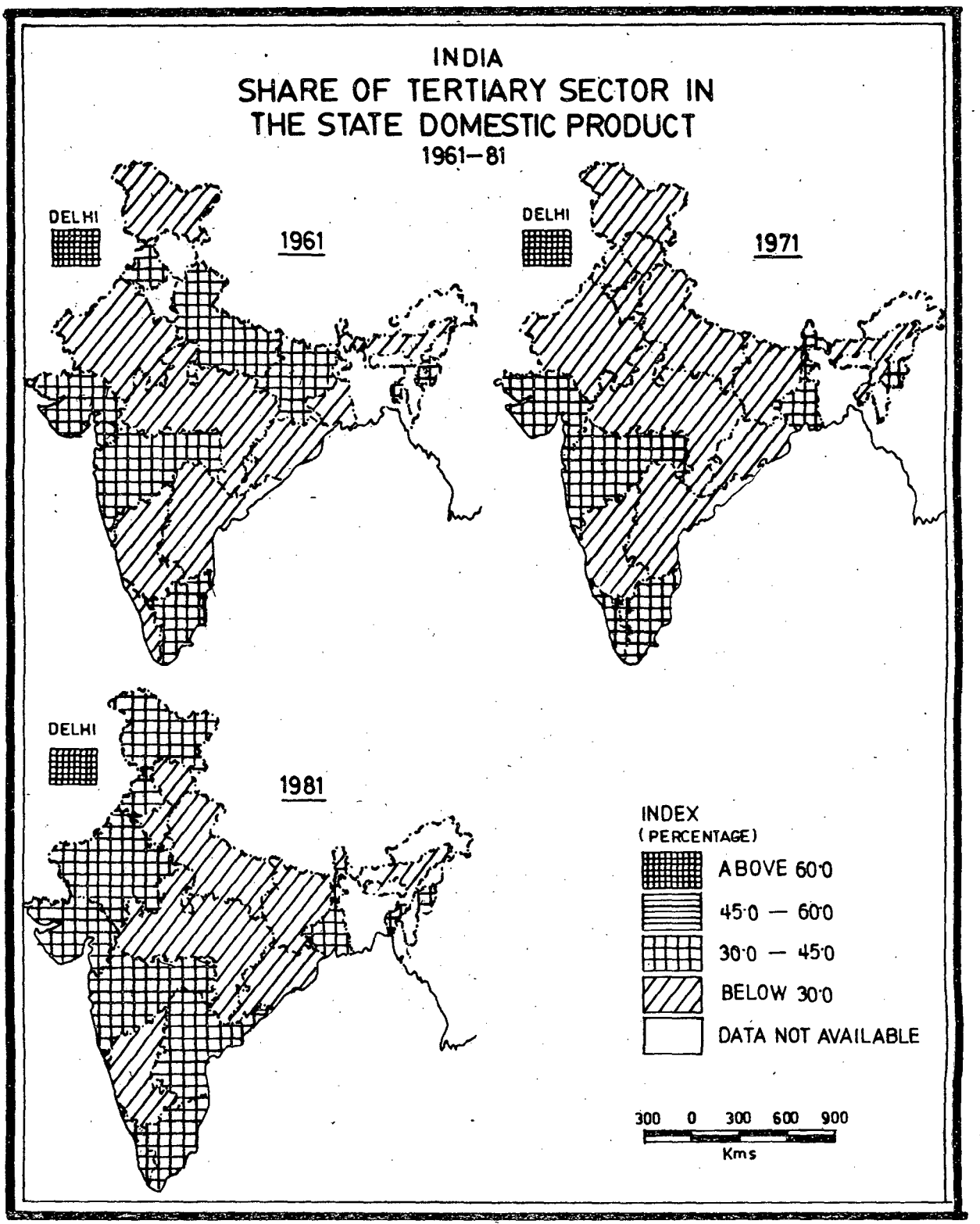
INDIA
SHARE OF TERTIARY SECTOR IN
THE STATE DOMESTIC PRODUCT
1961–81
DELHI
1961
DELHI
1971
DELHI
1981
INDEX
(PERCENTAGE)
ABOVE 60·0
45·0 — 60·0
30·0 — 45·0
BELOW 30·0
DATA NOT AVAILABLE
300 0 300 600 900
Kms

Fig: 3·3

except Manipur which had already a decline during the earlier decade. Out of the eighteen states for which sectoral shares were available for all three points, nine experienced decline in share of primary sector in NSDP for both the decades. Of these nine, eight had continuous increase in their secondary as well as tertiary sectors.

In chapter II, while discussing the temporal changes in migration ratios we had noted that the state of Bihar, Uttar Pradesh and Tripura went against the All India trend of urban-specificness of decline in migration ratios. Uttar Pradesh increased share of its secondary and tertiary sectors in the NSDP and a corresponding fall in that of the primary sector throughout the study period. Bihar and Tripura experienced decline in tertiary sector during 1961-71 but not in the secondary sector. Suggesting some sort of economic magnetism in the urban areas of those states compared to the rural areas, where migration was declining continuously and drastically. Or could it be said that the declines in the already voluminous primary sector during both decades in Uttar Pradesh and during 1961-71 in Bihar and Tripura were strong enough stimuli for higher outmigration from rural than urban areas.

The states which did not exhibit this urban-specificness of decline in long-distance migration during 60s were Assam, Bihar, Kerala, Madhya Pradesh, Rajasthan, Delhi. Assam and Delhi have a continuous decline in primary as well as secondary and a continuous increase in the tertiary. In Kerala and Madhya Pradesh primary sector declined continously but the two other sectors increased shares. For Rajasthan and Bihar primary sector declined in 1981. During 1961-71 Bihar's tertiary sector declined and Rajasthan's secondary and tertiary both declined.

One thing which comes out clearly is that all these states which show a lack of urban specific decline in migration during 1961-71 have high shares of primary rather than secondary and tertiary sectors in their NSDP, with the exception of Delhi. Delhi's case is unique in that its tertiary sector is a low elasticity government machinery which does not move out just by an industrial stagnation as was witnessed during mid-sixties.

During 1971-81 we find that most of the states improve their shares of secondary sector and have a decline in shares of primary sector. The rural specificness of decline in migration is noted for all India and for all states except Gujarat, Himachal Pradesh, Maharashtra, Punjab and Nagaland w.r.t. Migration

ratios (X_1, X_3). Haryana and Tamil Nadu resist this rural specificness of decline w.r.t. long-distance (X_5, X_6) and Himachal Pradesh, Madhya Pradesh, Kerala do so w.r.t. short-distance migration (X_8, X_9). These exceptions must be seen in relation to the changes that are taking place in the agriculture of these states, which we do in the next section.

Agriculture and Migration:

The district-level study, by Bhalla and Alagh (1979), reports that there is a large concentration of output in the high productivity districts and that simultaneously these are the very districts which make use of the major proportion of modern inputs. Less than half of the cultivated area in India produce two-thirds of total output, but at the same time holds three-fourths of fertilizers, tractors and irrigation engines and accounts for more than three-fourths of total irrigated area of India.[5] Our own results (Table III.1) show that disparities in the levels of agricultural development have increased significantly throughout the study periods.

There is a high inequality in the distribution of land. The latest agricultural census (1981) tells

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5. Bhalla, G.S. and Alagh, Y.K. (1979), Performance of Indian Agriculture: A District-wise Study. PP. 14-19.

that marginal land-holders (having land 0 to 1 hectare) who are 56.6% of the total operators have only 12.5% of the agricultural area, whereas a small minority of large size land holders (having 10 hectares and above) who are just 2.4% of the total number of land holders possess 22.8% of the agricultural area.[6] Barely one per cent of the total arable land in the country which is less than one half of one per cent of the land declared surplus, has been redistributed.[7]

The concentration of agricultural development in a few pockets combined with the unegalitarian pattern of ownership, cultivation and tenancy and the most dismal record of land reforms is usually justified by some economists on the plea that the effects of prosperity will percolate down to the areas outside the pockets of 'seed-fertilizer-technological' concentration, through a "suction mechanism" whereby the regions with high and growing land productivity are able to attract migrant workers from other regions.[8] However, a few others

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6. Agricultural situation in India, Aug. 1985, Directorate of Economics and Statistics, Dept. of Agriculture and Cooperation, Ministry of Agriculture & Rural Development. pp. 401 - 412.

7. Govt. of India, Ministry of Agriculture, Dept. of Rural Development, Annual Report, 1985-86, p. 29.

8. Alagh, Y.K., Bhaduri, A. and Bhalla, G.S. (1978), "Agricultural Growth and Manpower Absorption in India", Labour Absorption in Indian Agriculture - Some Exploratory Investigation, International Labour Office, Bangkok.

doubt that this kind of mechanism will produce re-distributive effects. In fact, a study by Burdhan shows that in the 60s the percentage of people below even the barest minimum acceptable level of living had gone up by 40% in India as a whole and by 143% for Punjab and Haryana, the throbbing heart-land of 'Green Revolution'.[9]

Here we are not doing the full threadbare analysis of this political economy, but restrict ourselves to see as to what kind of relation certain indicators of agricultural development (Tables III.4 and III.5) have with the structure and pattern of migration in India, as discussed in the chapter II.

Four indicators namely, the area under agriculture per worker (X_{27}), Agricultural output per worker (X_{28}), Agricultural Yield per hectare (X_{29}) and the percentage of area under irrigation (X_{30}) were taken. The first three indicators are based on the area and production of 19 principal crops. A three-year average of area and production of each of these crops for each point of the study period was taken to neutralise the very short-run fluctuations. The output of crops was valued

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9. Bardhan, P.K. (1970), "Green Revolution and Agricultural Labourers", Economic and Political Weekly, vol.5, Nos.29-31, July 1970, pp.1239-46.

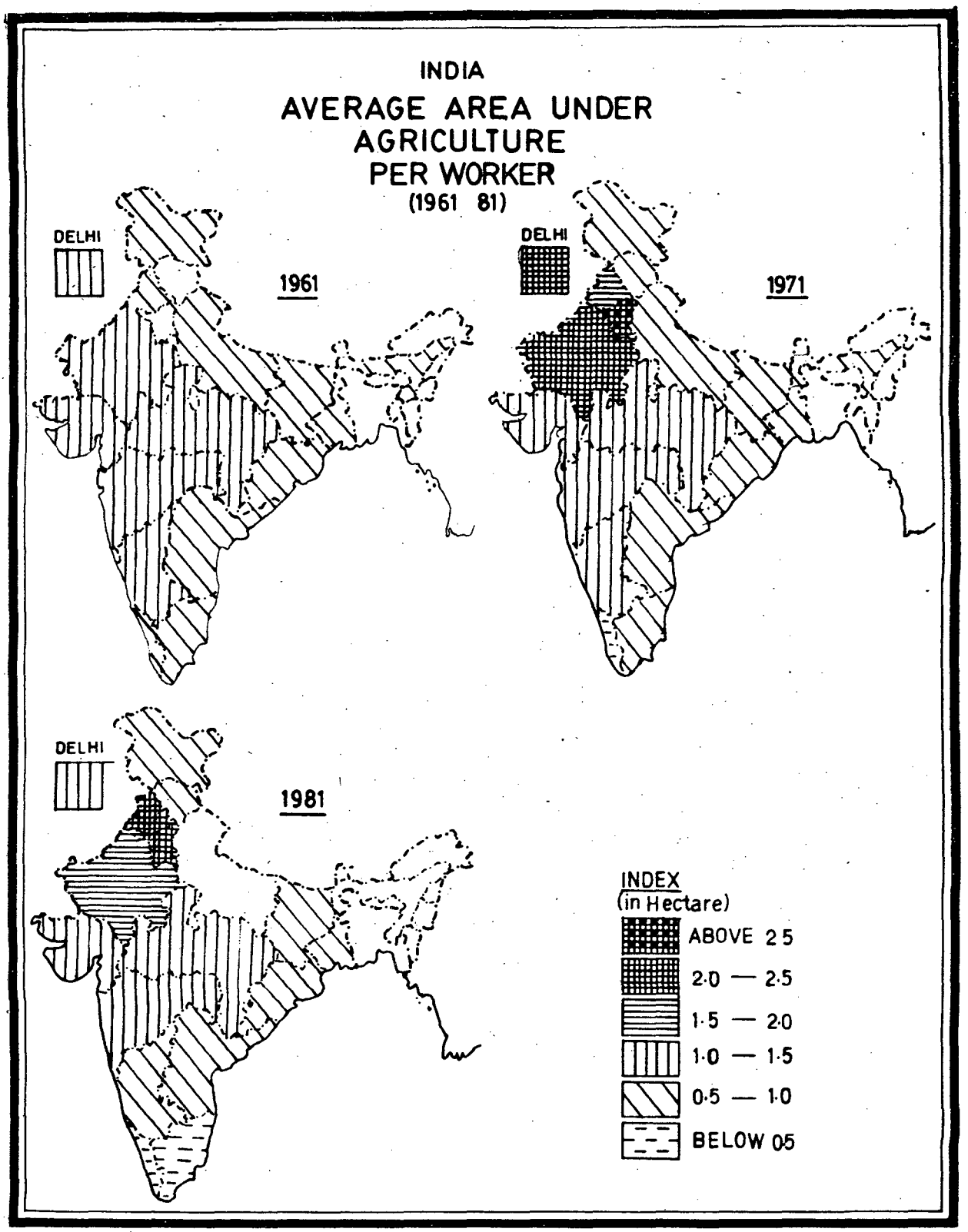
INDIA
AVERAGE AREA UNDER AGRICULTURE PER WORKER
(1961 81)
DELHI
1961
DELHI
1971
DELHI
1981
INDEX
(in Hectare)
ABOVE 2·5
2·0 — 2·5
1·5 — 2·0
1·0 — 1·5
0·5 — 1·0
BELOW 05

Fig. 3.4

TABLE III.4

Avrage Agriculturrai Area and Output Per Worker, Yield per Hectare, 1961, 1971, 1981

State/U.T.	Average area under agriculture per worker (hectare) (X_{27})			Average Agricultural output per worker Rupees (X_{28})			Average Agricultural Yield (Rs./Hect.) (X_{29})			Percentage Variation in Average Agriculture: Area Per Worker (X_{27})		Output per worker (X_{28})		Yield (X_{29})	
	1961	1971	1981	1961	1971	1981	1961	1971	1981	1961-71	1971-81	1961-71	1971-81	1961-71	1971-81
1. Andhra Pradesh	0.76	0.76	0.64	816.96	825.99	1830.60	1070	1093	2556	0.000	-15.789		121.555	2.150	166.750
2. Assam	0.60	0.86	N.A.	693.38	1056.63	N.A.	1154	1287	N.A.	43.333	n.A.	52.432	N.A.	11.525	n.A.
3. Bihar	0.55	0.55	0.53	539.56	578.55	755.85	923	975	1421	1.724	-10.170	7.238	30.651	5.959	45.757
4. Gujarat	1.47	1.49	1.27	1141.00	1395.15	2143.37	774	937	1684	1.361	-14.765	22.274	53.630	21.059	79.723
5. Haryana	N.A.	2.53	2.14	N.A.	2094.71	2401.10	N.A.	1150	1217	n.A.	-15.415	n.A.	24.175	n.A.	5.826
6. Himachal Pradesh	N.A.	0.80	0.79	N.A.	749.70	832.37	N.A.	931	1056	n.A.	-1.125	n.A.	10.997	n.A.	13.426
7. Jammu & Kashmir	[illegible]	0.81	0.76	471.92	922.74	1067.23	747	1135	1411	23.571	-6.173	95.529	15.657	51.941	24.317
8. Karnataka	1.15	1.13	0.90	809.84	1064.44	2425.81	705	940	2766	-1.739	-20.354	31.438	127.868	33.333	187.872
9. Kerala	0.40	0.31	0.30	647.21	540.21	775.72	1616	1173	2553	-22.500	-3.266	-16.063	42.866	-27.290	117.277
10. Madhya Pradesh	1.10	1.27	1.06	714.41	682.20	870.50	648	693	823	15.455	-16.535	23.487	-1.277	7.253	18.417
11. Maharashtra	1.19	1.21	1.10	732.28	597.65	2846.29	617	494	2586	1.681	-9.091	-18.339	376.065	-19.935	423.482
12. Orissa	0.87	0.98	0.88	961.55	1000.99	1417.05	1105	1026	1616	12.644	-10.204	4.103	41.568	-7.233	57.505
13. Punjab	0.87	1.94	2.23	1005.51	3421.37	6723.15	1152	1761	3012	122.988	14.949	240.258	96.509	52.865	71.039
14. Rajasthan	1.47	2.02	1.73	563.55	1046.75	1186.62	384	511	684	37.415	-14.356	85.633	13.362	34.375	32.046
15. Tamil Nadu	0.62	0.64	0.43	916.13	1129.55	2270.29	1487	1770	5334	3.266	-32.813	24.169	100.951	20.470	201.356
16. Uttar Pradesh	0.85	0.94	0.95	786.24	1016.85	4323.52	930	1079	4506	10.588	2.128	29.331	325.223	16.022	317.053
17. West Bengal	0.91	0.88	0.75	1213.59	1264.51	1216.45	1336	1442	1616	-3.297	-14.773	4.394	-3.920	7.934	12.205
18. Delhi	1.05	1.96	1.37	821.69	2172.65	2165.38	782	1106	1595	86.667	-30.102	64.352	0.769	41.432	44.485

Notes 1. The 1961 figures for average area under agriculture per worker average agricultural output per worker, and averagre agricultural yield rural hectare are average for 1961-63, 1963-64 and 1964-65. Similarly those for 1971 are average for 1970-71, 1971-72 and 1972-73. The 1981 figures are average for 1980-81, 1981-82, and 1982-83.

2. The estimates of area, output and yield are based on 19 principal crops only.

3. The agricultural output was calculated at the average 1970-73 prices

Source 1. Bhalla, G.S. and Alagh, Y.K., 1979. Performance of Indian Agriculture: A District wise study.

2. Census of India, 1981, India, Series 1, Paper 3 of 1981. Provisional Population Totals, workers and non-workers.

3. Directorate of Economics and Statistics, Ministry of Agriculture (India), 1983. Estimates of Area and Production of Principal Crops in India.

7.104

83

TABLE III.5

PERCENTAGE OF AREA UNDER IRRIGATION AND PERCENTAGE DECADAL RATES OF CHANGE - 1961-1971-1981

	State/U.T.	(X30)			Percent Change	
		1961	1971	1981	1961-71	1971-81
1.	Andhra Pradesh	26.98	28.23	32.24	4.63	14.21
2.	Assam	27.85	25.59	21.54	-8.12	-15.83
3.	Bihar	25.67	25.55	35.51	-0.47	38.98
4.	Gujarat	7.27	13.11	20.92	80.33	59.57
5.	Haryana	N.A.	42.97	59.24	N.A.	37.86
6.	Himachal Pradesh	13.92	16.30	16.08	17.10	-1.35
7.	Jammu & Kishmir	41.70	37.39	42.52	-10.34	13.72
8.	Karnataka	8.39	11.09	13.75	32.18	23.99
9.	Kerala	18.50	19.84	10.92	7.21	-44.96
10.	Madhya pradesh	5.73	8.06	12.47	40.66	54.71
11.	Maharashtra	6.00	7.61	10.53	26.83	38.37
12.	Manipur	41.98	46.43	46.43	10.60	0.00
13.	Meghalaya	N.A.	22.84	24.87	N.A.	8.89
14.	Nagaland	N.A.	20.00	39.86	N.A.	99.30
15.	Orissa	17.43	18.78	19.82	7.75	5.54
16.	Punjab	41.70	71.26	80.70	70.89	13.25
17.	Rajasthan	13.36	14.05	19.54	5.17	39.08
18.	Tamil Nadu	41.07	42.02	47.95	2.31	14.11
19.	Tripura	5.21	9.17	11.79	76.01	28.57
20.	Uttar Pradesh	29.52	41.72	54.89	41.33	31.57
21.	West Bengal	24.85	26.43	26.76	6.36	1.25
22.	Delhi	39.08	59.26	91.38	51.64	54.20

Note: The percentage of area under irrigation refers to Net Irigated area as percentage of Net Cropped Area.

Source:
1. Central Statistical organisation (India) Ministry of Planning 1963 Statistical Asstract of India 1963
2. Central Statistical organisation (India) Ministry of Planning 1964 statistical Asstract of India 1964
3. Central Statistical organisation (India) ministry of planning 1972 statistical Asstract of India 1972
4. Central Statistical organisation (India) ministry of planning 1984 statistical Asstract of India 1984

at 1970-73 constant prices.

Punjab and Delhi are among the states having highest area per worker whereas Tamil Nadu and West Bengal are among those reporting the lowest area per worker but the similarity among these four is that they all have highest output per worker, highest yield per hectare and highest percentage of agricultural area under irrigation (Table III.4 and III.5). The other conspicuous thing is that Gujarat and Rajasthan are among the states which have the highest area per worker whereas for Bihar and Kerala opposite (having the lowest area per worker) is true but commong thing for them is that they have the lowest levels of output per worker, lowest yield per hectare and lowest percentage of agricultural area under irrigation.

The first group of four mentioned here has high ratios of migrants of all kinds, except that Tamil Nadu has low level of long-distance migrants and Delhi and West Bengal have low levels of short-distance migrants, particularly in their rural areas. The second group of four consisting of Gujarat, Rajasthan, Bihar and Kerala generally belong to the category of low migration states. Uttar Pradesh is more close to the second group in this connection.

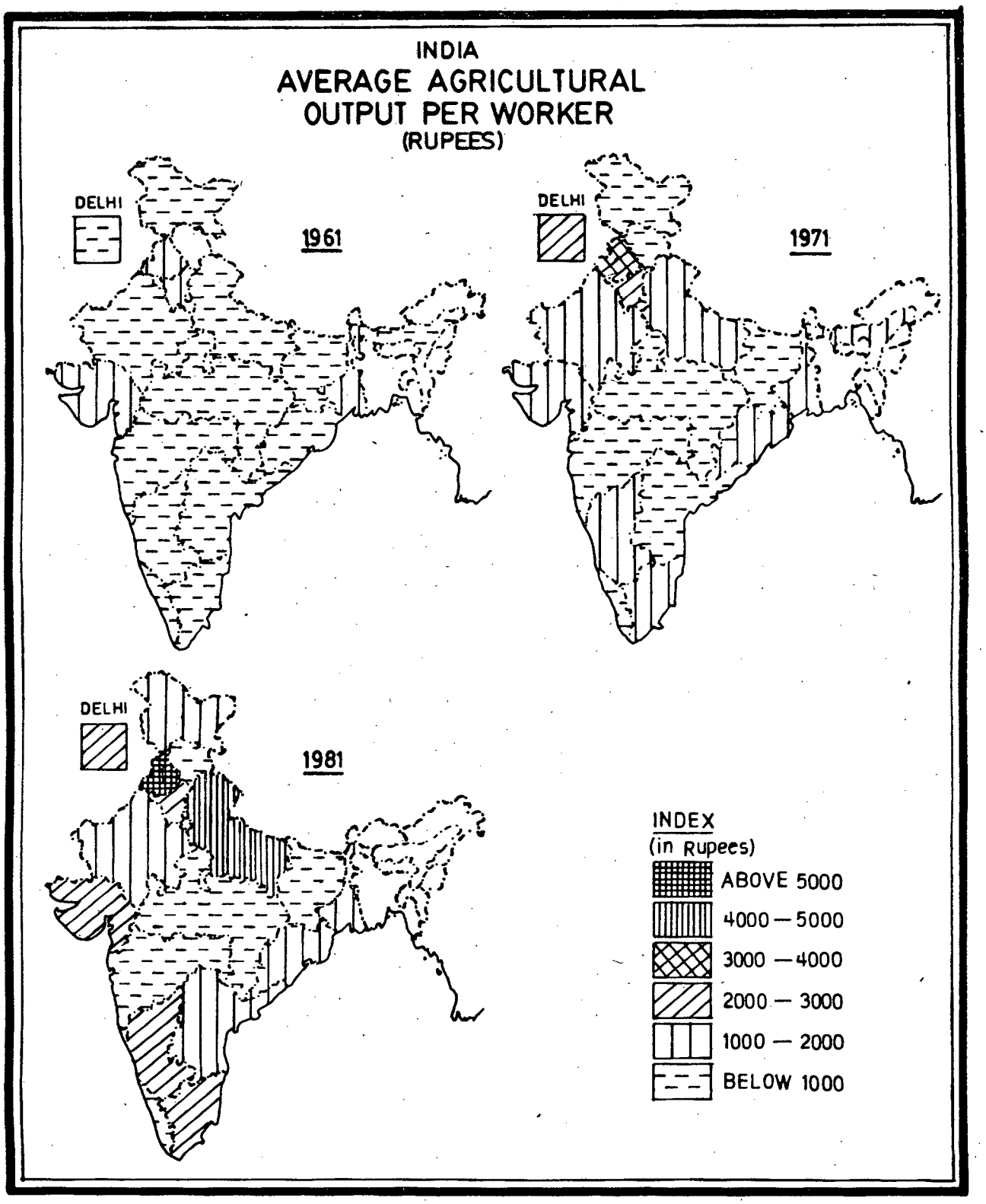
INDIA
AVERAGE AGRICULTURAL
OUTPUT PER WORKER
(RUPEES)
DELHI
1961
DELHI
1971
DELHI
1981
INDEX
(in Rupees)
ABOVE 5000
4000 — 5000
3000 — 4000
2000 — 3000
1000 — 2000
BELOW 1000

Fig. 3.5

It can be said on the basis of our analysis in the earlier chapter that the agriculturally less-developed states of Bihar, Uttar Pradesh, Rajasthan and Kerala have net negative migration in 1971 as well as in 1981. Bihar, Uttar Pradesh and Kerala also do have a negative decadal rate of migrants (Table II.9). Uttar Pradesh which has the lowest values for all indicators of agricultural development, incidentally has the highest negative migration, and also the highest negative decadal rate of migration.

One thing about the temporal changes in migration levels is that the declines are more in the states which report low area under agriculture per worker, some of these being agriculturally developed like Tamil Nadu and West Bengal while others are agriculturally backward like Bihar, Kerala or Uttar Pradesh. On the other hand, Punjab, which is one of the states with highest area under agriculture per worker, has continuously increased long-distance migration level specially in its rural areas. Same is the case with Delhi, which has the highest area per worker and has kept high position of migration levels despite fluctuations in rural areas. Gujarat which has highest area under agriculture per worker, shows an increase in its long-distance migration ratios but Bihar which is also an agriculturally backward state like Gujarat

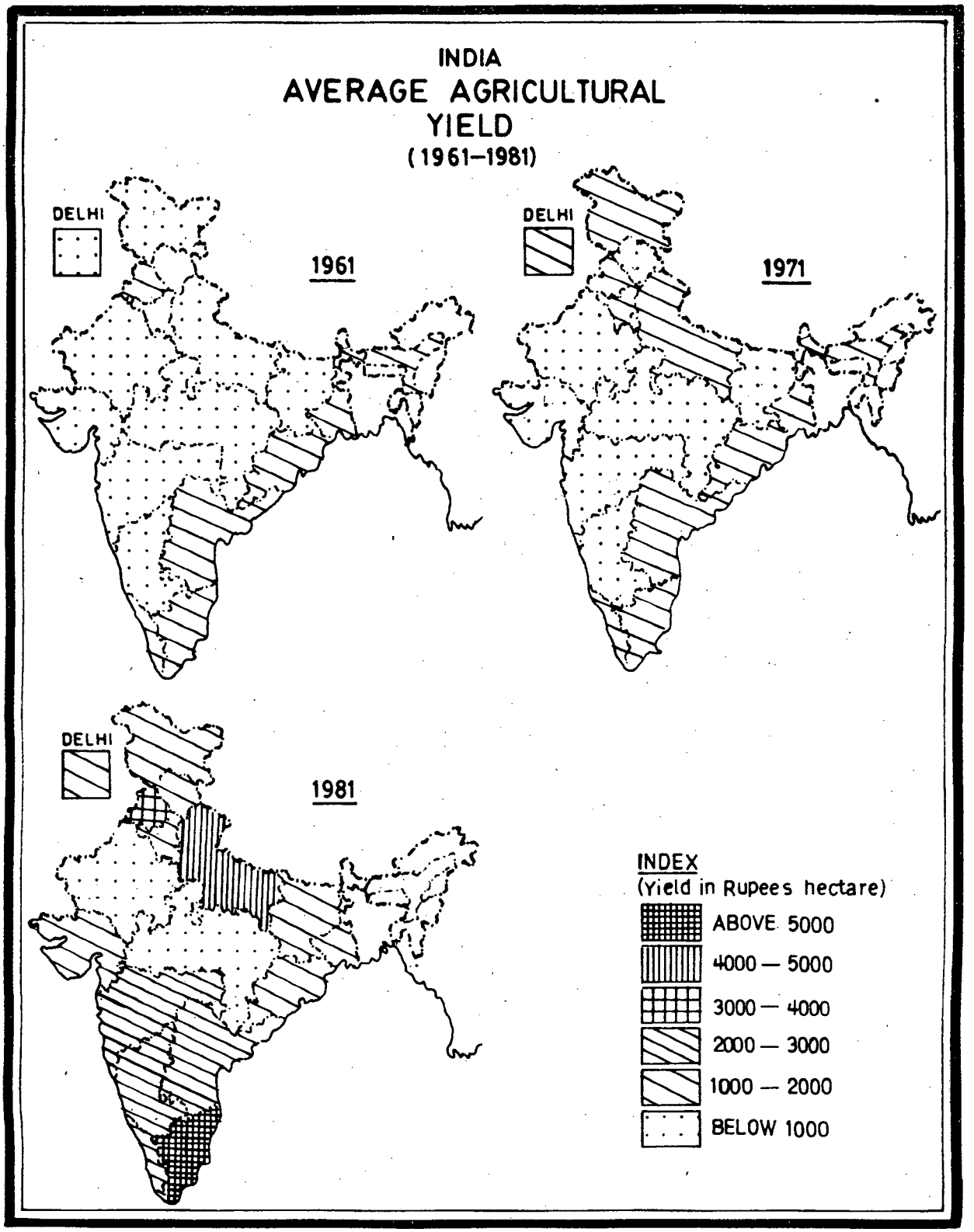
INDIA
AVERAGE AGRICULTURAL YIELD
(1961–1981)
DELHI
1961
DELHI
1971
DELHI
1981
INDEX
(Yield in Rupees hectare)
ABOVE 5000
4000 — 5000
3000 — 4000
2000 — 3000
1000 — 2000
BELOW 1000

Fig. 3.6

but has lowest area per worker, shows heaviest declines in migration levels specially in the rural areas. On the basis of the fact of higher declines in migration ratios in general, and the rural migrant ratios in particular, in the states where area under agriculture per worker is low, it can be argued that the pressure on land is a deciding factor as far as migration is concerned.

This argument is further strengthened if we consider the net decadal inter-state migration and the decadal rate of inter-state migration (Table II.9) which we discussed in the earlier chapter. For example, Rajasthan and Gujarat which are less endowed with development in agriculture but have the highest area per worker, have a positive decadal rate of inter-state migrants. On the other hand Tamil Nadu, which has highest values for all indicators of agricultural development but lowest area under agriculture per worker, has negative net inter-state migration throughout the study period. The above discussion shows, ceteres paribus, higher the area under agriculture per worker, higher will be the migration levels and lower will be the declines in them.

Temporal Changes in Agriculture:

Tables III.4 and III.5 present the changes in variables of agriculture over time. During the sixties

the area under agriculture per worker (X_{27}) shows an increase for all the states except that in Karnataka and West Bengal it declined 2 to 3 per cent and Kerala where it went down by a quarter. During the seventies, however, all states except Punjab and Uttar Pradesh show a decline. Thus, Punjab and Uttar Pradesh are the only states which show a continuous increase in the area under agriculture per worker whereas Karnataka, Kerala and West Bengal are the only ones which show a continuous decline.

The other three indicators show a continuous increase for most of the states. The agricultural output per worker (X_{28}) shows a continuous increase for all the states except that it declines by around 20% in Kerala and Maharashtra although during the next decade they register an increase of 42 and 376 per cent respectively. During the seventies also all states show increase in this variable, except for marginal declines for Madhya Pradesh and West Bengal. No state shows a continuous decline in this indicator and the ups and downs in Maharashtra and Kerala can be attributed to the bad years during 1970-73. So it can be said that all states have increased agricultural output per worker. The agricultural yield per hectare (X_{29}) shows a continuous increase for all states except

during the sixties, Orissa, Maharashtra, Karnataka experienced some decline which is more than compensated by high rate of increase during the next decade which is many times the initial rate of decline. The percentage of agricultural area under irrigation (X_{30}) has also shown increase for all states except a decline in Assam for both decades and in Bihar and Jammu and Kashmir during the sixties and in Himachal Pradesh during the seventies.

The rural specific decline in migration levels during the seventies despite the fact of increase in labour and land productivity and irrigation intensity, makes the decline in the area under agriculture per worker (X_{27}) all the more significant factor. However, this is not to deny the role of the other three indicators of agricultural development. For example, Punjab and Uttar Pradesh both register an increase in the area per worker. But Punjab, which is agriculturally more developed, could attract and bring long-distance migrants in its rural areas during the seventies whereas Uttar Pradesh could not do that.

The coefficients of correlation of migration ratios with the area under agriculture per worker (X_{27}) are higher than the set with any other indicator of agricultural development (see Appendix 3(ii)). It

again supports our hypothesis that the land pressure is the most important factor deciding migration levels, specially in the rural areas. This also brings into focus the question whether the "suction mechanism" as propounded by 'Bhalla-Alagh-Bhaduri'[10] is the most important factor in migration.

Workforce in Non-Household Manufacturing and Migration:

A glance at the Table III.6 shows that Delhi, West Bengal and Tamil Nadu are the states with highest percentage of workforce, rural as well as urban, in non-household (Non-HH) manufacturing occupation at all points in the study period. Kerala and Punjab are the states with highest percentage of their respective rural workforce in non-household manufacturing, whereas Maharashtra and Gujarat have highest percentage of urban workforce in non-household manufacturing occupation. These above mentioned states experience continuous increase in these variables, except that West Bengal during the sixties observes decline in non-HH manufacturing proportion of its workforce in rural as well as urban areas. These are the states with high levels of migration and for all these states, except Tamil Nadu

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10. Ibid.

TABLE III.6

PERCENTAGE OF MALE WORKFORCE IN NON-HOUSEHOLD MANUFACTURING SECTOR AND PERCENTAGE DECADAL VARIATION THEREIN - 1961-1971-1981

State/U.T.	Rural (X_{25})			Urban (X_{26})			Percentage Change: Rural (X_{25})		Percentage Change: Urban (X_{26})	
	1961	1971	1981	1961	1971	1981	1961-71	1971-81	1961-71	1971-81
1.Andhra Pradesh	1.65	2.50	3.42	13.60	17.23	19.30	51.515	36.800	26.691	12.014
2.Assam	1.59	1.59	N.A.	13.87	13.15	N.A.	0.000	N.A.	-5.191	N.A.
3.Bihar	1.45	1.39	2.35	19.13	16.56	19.42	-4.138	69.065	-13.434	17.271
4.Gujarat	2.02	3.00	5.99	30.42	31.02	35.18	48.515	99.667	1.972	13.411
5.Haryana	N.A.	3.37	5.54	N.A.	22.69	27.56	N.A.	643.92	N.A.	2.146
6.Himachal Pradesh	0.83	1.38	3.67	12.46	9.77	12.66	66.265	165.940	-21.589	29.580
7.Jammu & Kishmir	0.73	1.76	3.50	14.99	13.77	16.09	141.096	98.864	-8.139	16.848
8.Karnataka	1.55	2.30	3.52	19.20	21.19	17.58	48.387	53.043	10.365	-17.036
9.Kerala	8.35	9.64	9.86	19.00	19.46	21.98	15.173	2.282	2.721	12.950
10.Madhya pradesh	0.44	0.94	1.78	20.21	20.26	22.07	113.636	89.362	.247	8.934
11.Maharashtra	1.86	2.81	4.99	30.55	32.80	33.49	51.075	77.368	7.365	2.104
12.Manipur	0.34	1.18	1.44	1.95	7.32	5.32	247.059	22.034	275.385	-27.322
13.Meghalaya	0.20	0.57	0.84	6.08	9.56	9.52	185.000	47.368	57.237	-0.418
14.Nagaland	0.20	0.77	1.62	6.08	4.59	8.20	285.000	110.389	-24.507	78.649
15.Orissa	0.38	1.23	2.16	15.36	14.53	17.18	223.680	75.610	-5.404	18.238
16.Punjab	2.47	3.16	4.97	19.61	25.13	25.87	27.935	57.279	28.149	2.945
17.Rajasthan	0.75	1.23	2.81	13.28	15.71	19.84	64.000	128.455	18.298	26.289
18.Tamil Nadu	3.02	4.63	6.03	21.31	24.10	27.63	53.311	30.238	13.092	14.647
19.Tripura	2.13	1.44	1.78	10.60	8.98	4.08	-32.394	23.611	-15.283	-54.566
20.Uttar Pradesh	1.34	1.58	2.71	18.71	11.17	19.59	17.910	71.519	-40.299	75.380
21.West Bengal	4.00	3.77	5.45	34.29	33.59	34.97	-5.750	44.562	-2.041	4.108
22.Delhi	14.80	16.66	17.95	21.67	22.83	28.98	12.568	7.743	5.353	26.938

Source: 1. Census of India, 1961, India, Vol. I, Part II B(i), General Economic Tables, Table B-III.

2. Census of India, 1971, India, Series I, Part II B(iii)A, General Economic Tables 0-III.

3. Census of India, 1981, Part III A and B, Vol. 1, General Economic Table B-III (Unpublished State Volumes).

and Kerala, the estimates of net decadal inter-state migration and the decadal rate of inter-state migration are positive.

On the other hand, the North-eastern states of Manipur, Meghalaya, Nagaland and Tripura as well as Himachal Pradesh which have the lowest percentage of their rural as well as urban male workforce engaged in non-household manufacturing, record the lowest level of migration. The percentage of rural workforce in non-household manufacturing has as high as 8 value of the coefficient of correlation with migration ratio, has even higher correlation with inter-state migration level, especially those of rural areas and negative correlation with short-distance migration. The percentage of urban workforce in non-household manufacturing (X_{26}) has moderately positive correlation with migration levels in urban areas, although the correlation of X_{26} with intra-district migration ratio (X_9) is negative.

Rate of Male Unemployment and Migration:

The rates of male unemployment separately for rural and urban areas and temporal changes therein have been presented in Table III.7.

At the all India level the rate of male unemployment is higher in urban than the same in rural areas.

TABLE III.7

MALE UNEMPLOYMENT RATES AND CHANGES - 1972-73, 1977-78, 1983

State/U.T.	Rural			Urban			Changes in Male Unemployment Rates: Rural		Urban		% change in Male Unemployment Rates: Rural		Urban	
	1972-73 (X_{19})	1977-78 (X_{20})	1983 (X_{21})	1972-73 (X_{22})	1977-78 (X_{23})	1983 (X_{24})	1972-73 to 1977-78	1977-78 to 1983	1972-73 to 1977-78	1977-78 to 1983	1972-73 to 1977-79	1977-78 to 1983	1972-73 to 1977-79	1977-78 to 1983
1. Andhra Pradesh	6.90	5.67	5.59	6.87	6.77	4.95	-1.23	-0.08	-0.10	-1.82	-17.83	-1.41	-1.46	-26.88
2. Assam	1.46	0.76	0.88	1.45	1.90	5.34	-0.70	1.12	0.45	3.44	-47.95	147.37	31.03	181.05
3. Bihar	5.67	5.73	2.24	5.10	4.56	4.24	0.06	-3.49	-0.54	-0.32	1.06	-60.91	-10.59	-7.02
4. Gujarat	3.48	4.49	3.02	5.78	3.49	5.50	1.01	-1.47	-2.29	2.01	29.02	-32.74	-39.62	57.59
5. Haryana	2.25	3.99	3.41	2.79	3.67	4.61	1.74	-0.58	0.88	0.94	77.33	-14.54	31.54	25.61
6. Himachal Pradesh	0.61	2.03	1.17	1.50	3.71	4.27	1.42	-0.86	2.21	0.56	232.79	-42.36	147.33	15.09
7. Jammu & Kashmir	5.24	4.94	8.36	2.95	4.15	3.29	-0.30	3.42	1.20	-0.86	-5.73	69.23	40.68	-20.72
8. Karnataka	4.65	4.48	4.69	4.70	5.73	6.34	0.17	0.21	1.03	0.60	-3.66	4.69	21.91	10.65
9. Kerala	2.84	13.70	13.36	12.53	13.76	12.76	0.86	-0.31	1.23	-1.00	6.70	-2.26	9.82	-7.27
10. Madhya pradesh	2.19	0.94	1.56	2.52	3.44	3.81	-0.25	-0.38	0.92	0.37	-11.42	-19.59	36.51	10.76
11. Maharashtra	5.60	3.44	3.99	5.14	5.47	4.32	-2.16	0.55	0.33	-1.15	-38.57	15.99	6.42	-21.02
12. Manipur	6.30	1.82	0.48	2.25	0.63	0.23	-4.49	-1.34	-1.62	-0.40	-71.16	-73.63	-72.00	-63.45
13. Meghalaya	0.50	0.80	0.38	1.29	0.14	2.62	-0.32	1.20	-1.15	2.48	-64.00	83.33	-89.15	1771.43
14. Nagaland	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
15. Orissa	6.31	4.52	5.09	4.94	4.40	6.22	-1.79	0.57	-0.54	1.82	-28.37	12.61	-0.93	41.36
16. Punjab	2.89	2.94	4.08	3.84	2.45	3.90	0.05	1.14	-1.39	1.45	1.73	38.78	-36.20	59.18
17. Rajasthan	3.25	2.65	3.09	3.53	2.87	3.18	-0.60	0.44	-0.66	0.31	18.46	16.60	-18.70	0.80
18. Tamil Nadu	7.19	8.36	12.00	5.97	8.04	9.43	1.17	3.64	2.07	1.39	16.27	43.54	34.67	17.29
19. Tripura	3.44	2.61	1.24	4.73	0.26	4.40	-0.83	-1.37	5.53	-5.86	-24.13	-52.49	116.91	-51.12
20. Uttar Pradesh	1.95	2.46	2.16	2.63	3.49	3.95	0.51	-0.30	0.86	0.46	26.15	-12.20	32.70	13.18
21. West Bengal	7.23	5.70	8.80	5.83	1.05	7.51	-1.53	3.10	-4.78	6.46	-21.16	54.39	-81.99	615.24
22. Delhi	2.54	3.60	0.91	3.25	4.21	2.42	1.06	7.31	0.96	-1.79	41.73	203.06	29.54	-42.52

Source: Central Statistical Organiation (India, Ministry of Planning, 1983, Key results of last three quinquennial N.S.S. Enquiries on Employment and Unemployment, 30th Round, Jan-Dec, 1983, Report No. 315.

It has increased continuously in urban areas. And in rural areas also, the 198' rate of male unemployment is slightly higher than the 1972-73 rates.

The states of Kerala, Andhra Pradesh and Tamil Nadu observed the highest rates, and Meghalaya, Assam and Himachal Pradesh the lowest rates of male unemployment consistently for all the three National Sample Survey (NSS) rounds, in rural as well as urban areas. It can generally be said that the states with highest male unemployment rates have lower percentage of long-distance migrants as compared with the states with those recording lowest male unemployment rates.

The correlation results also support this observation. There is a negative but weak relationship of migration ratios and unemployment rates, a moderately negative correlation of inter-state migration ratio with unemployment in rural areas and a positive correlation of unemployment with short-distance migration.

However, the relationship between unemployment and migration cannot be static one only. If we see the temporal changes in migration levels (Table II.5) and changes in unemployment over time (Table III.7), we find that the highest increase in unemployment rates are almost surely associated with declines in migration specially the long-distance migration.

If the changes in unemployment situation between 1972-73 and 1977-78 are considered, we find that the states with highest unemployment rates and those registering big increases in them observe decline in their migration levels.

This applies to the states of Kerala, Andhra Pradesh and Tamil Nadu which have highest unemployment rates both in rural and urban areas separately. It also holds true for the states of Haryana, Himachal Pradesh, Bihar and Jammu and Kashmir which registered highest increase in rural male unemployment rate and also for Himachal Pradesh, Tripura, Kerala, Jammu and Kashmir which did so with respect to urban male unemployment rates.

We find that short-distance migration increases with a decline in unemployment rates, whereas the long-distance migration does not do so. The typical examples are Andhra Pradesh, Maharashtra and Tripura. We can think of it as a phenomenon wherein if there is a decline in unemployment rates the local response in the form of intra-district migration is more likely than any all India effect through long-distance migration.

Road Length and Migration:

Table III.8 shows the road length per 100 square kilometres in various states in 1961, 1971 and 1981.

TABLE III.8

ROAD LENGTH PER HUNDRED SQUARE KILOMETERS - 1961-1971-1981

	State/U.T.	Road Length in (Kms.)			Percentage variation	
		1961	1971	1981	1961-71	1971-81
1.	Andhra Pradesh	19.66	32.65	46.78	66.07	43.28
2.	Assam	23.94	51.70	66.35	115.97	22.08
3.	Bihar	46.56	47.01	48.10	0.97	2.32
4.	Gujarat	13.09	24.91	30.86	90.30	23.89
5.	Haryana	N.A.	28.09	54.17	N.A.	92.84
6.	Himachal Pradesh	14.00	24.38	36.91	74.14	51.39
7.	Jammu & Kishmir	4.72	7.81	5.31	65.47	-32.01
8.	Karnataka	32.59	38.04	58.81	16.72	54.60
9.	Kerala	50.28	142.41	274.93	183.24	93.06
10.	Madhya pradesh	10.71	16.99	24.20	58.64	42.44
11.	Maharashtra	16.61	20.37	58.56	22.64	187.48
12.	Manipur	14.00	25.30	23.72	80.71	-6.25
13.	Meghalaya	N.A.	14.00	23.23	N.A.	65.93
14.	Nagaland	15.00	30.74	37.92	104.93	23.36
15.	Orissa	20.08	42.83	77.17	113.30	80.18
16.	Punjab	24.89	118.85	91.66	377.50	-22.88
17.	Rajasthan	12.04	18.05	21.18	49.92	17.34
18.	Tamil Nadu	36.47	51.30	102.05	40.66	98.93
19.	Tripura	14.00	55.58	76.03	297.00	36.79
20.	Uttar Pradesh	33.59	44.48	51.99	32.42	16.88
21.	West Bengal	74.03	47.00	64.21	-36.51	36.62
22.	Delhi	187.71	195.15	1064.73	3.96	445.60
	INDIA	21.64	25.97		20.01	

Source: 1. Central Statistical Organisation (India), Ministry of Planning, 1984, Statistical Abstract of India., 1984

2. (India), Ministry of Transport and Shipping, 1965, Basic Road Statistics of India.

3. Transport Research Division, (India), Ministry of Shipping and Transport, 1971, Road Statistics of India.

Delhi, Kerala and Tamil Nadu are the states with the highest length of roads per 100 square kilometres at all points in the study period. From 1971 onwards Punjab, Tripura and Assam also emerge as the states with highest incidence of roads per 100 sq. km. We know these are the states which have high migration ratios except that in Tamil Nadu and Kerala inter-state migration ratios, specially in rural areas is very low.

The states with lowest length of roads per sq. km. are Jammu and Kashmir, Madhya Pradesh, Rajasthan and Gujarat. We can say on the basis of the results in the previous chapter that these states have low and declining levels of migration in their male population.

The road development is associated with increase in migration levels can be substantiated by the fact that in Delhi, Maharashtra, Punjab, Tripura, Assam and Orissa the road length has recorded higher increases. These are the states with relatively stable migration ratios at relatively higher levels. We also find that states like Uttar Pradesh and Bihar which have low and declining levels of migration also have short and slow growing road length.

So we can say that road length is a meaningful socio-economic factor as far as migration, specially that of long-distance, is concerned. The correlation results also support this observation. It has very high correlation with migration ratio (X_1), still higher correlation with urban migration ratio (X_3) and very high correlation with inter-state migration ratio (X_4) and extremely high with the inter-state migration ratio in rural areas (X_5). However, its negative correlation with short-distance migration is understandable.

Hospitals and Population Mobility:

Table III.9 gives the number of hospitals per one lakh of population (X_{38}). We find that Delhi, Punjab and Manipur have more hospitals per lakh population than any other states at all points in study period. Except for Manipur which has low percentage of long-distance migrants specially so in urban areas, the other two have high migration levels with high and increasing proportion of inter-state migrants in them. On the contrary, the less-developed states of Uttar Pradesh, Bihar and Madhya Pradesh have low and declining number of hospitals per lakh of population.

The increase recorded by Punjab, Maharashtra, Delhi, which already have high values of this variable,

TABLE III.9

HOSPITALS PER LAKH POPULATION - 1961, 1971, 1981

	State/U.T.	X_{38}			Percentage Variation	
		1961	1971	1981	1961-71	1971-81
1.	Andhra Pradesh	1.05	1.48	1.98	40.95	33.78
2.	Assam	1.99	3.69	N.A.	85.43	N.A.
3.	Bihar	1.16	0.62	0.99	-46.55	59.68
4.	Gujarat	1.49	2.03	3.68	36.25	81.28
5.	Haryana	N.A.	1.06	1.65	N.A.	55.68
6.	Himachal Pradesh	N.A.	5.16	3.39	N.A.	-34.30
7.	Jammu & Kishmir	1.59	4.52	5.41	184.28	19.69
8.	Karnataka	1.83	1.50	2.37	-18.03	58.00
9.	Kerala	0.87	2.42	4.74	178.16	95.87
10.	Madhya pradesh	1.49	0.66	1.15	-55.71	74.24
11.	Maharashtra	1.95	1.44	3.98	-26.15	176.39
12.	Manipur	5.26	2.97	3.50	-43.54	17.85
13.	Meghalaya	N.A.	3.14	2.98	N.A.	-5.10
14.	Nagaland	N.A.	6.86	12.28	N.A.	79.01
15.	Orissa	1.37	1.36	1.82	-0.73	-33.82
16.	Punjab	2.41	1.54	4.99	-36.10	224.03
17.	Rajasthan	2.04	2.07	1.53	1.47	-27.10
18.	Tamil Nadu	1.53	1.14	1.44	-25.49	26.32
19.	Tripura	3.57	2.98	3.37	-16.53	13.09
20.	Uttar Pradesh	1.15	1.14	1.37	-0.37	20.18
21.	West Bengal	3.31	1.05	1.10	-68.29	4.76
22.	Delhi	2.00	2.61	5.31	30.50	103.45

Note: While calculating the number of hospitals, a hospital was assigned weight=1, and a dispensary a weight = 1/3.

Source: Central Statistical Organisation (India), Ministry of Planning. Statistical Abstract of India (for years 1961, 1971 and 1981)

and Kerala and Gujarat may be related with the high and stable level of migration in first three and moderate and fairly stable levels in the last two. The correlation of this variable with migration-ratios is very weak but still we can include it in the set of variables of socio-economic development, the combination of which influences migration levels and changes in them.

Expenditure on Education and Migration:

This section contains an analysis of the trends in the per capita expenditure on education on total and rural population separately. The amount of per capita expenditure and the changes in it over time have been discussed, along with the difference of per capita expenditure on education in rural areas and the population as a whole. But the per capita expenditure on education in rural areas could not be calculated for 1981 because the ministry of education has stopped publishing expenditure figures for education in rural areas separately since 1970. The results are presented in Table III.10.

The states of Delhi, Manipur, Tripura, Maharashtra, and Nagaland spend the highest per capita amounts of money on education at all points in the study period.

Table III. 10.

Percapita Expenditure on Education and Changes

States/U.T.S.	Percapita Expenditure (in Rupees) X_{36}			Percapita Expenditure In Rural Areas (in Rupees) X_{37}		Absolute Difference $X_{36} - X_{37}$		Difference as % of Rural Expenditure (Per Capita)			Percentage Decadal Change i (X_{36})	(Rural) X_{37}
	1961	1971	1981	1961	1971	1961	1971	1961	1971	1961-71	1971-81	1961-71
1. Andhra Pradesh	7.14	14.28	40.78	2.95	9.38	4.19	4.90	142.03	52.25	100.00	185.57	217.97
2. Assam	7.56	19.88	9.00	4.12	13.16	3.44	6.72	83.50	51.05	62.96	-54.73	219.42
3. Bihar	4.86	9.35	33.68	2.23	5.30	2.63	4.05	117.94	76.42	92.38	260.12	137.67
4. Gujrat	9.19	24.43	50.51	5.07	22.97	4.12	1.46	81.26	6.36	165.83	106.75	323.06
5. Haryana	N.A.	20.81	54.10	N.A.	11.22	N.A.	9.59	N.A.	85.47	N.A.	159.97	N.A.
6. Himachal Pradesh	N.A.	42.23	92.40	N.A.	29.90	N.A.	12.33	N.A.	41.24	N.A.	118.80	N.A.
7. Jammu & Kashmir	5.74	23.45	67.32	3.30	7.41	2.44	16.04	73.44	216.46	308.54	187.08	124.55
8. Karnataka	7.49	20.30	44.50	3.12	7.94	4.37	12.36	140.06	155.67	171.03	119.21	154.44
9. Kerala	11.47	29.53	84.04	7.74	22.46	3.73	7.07	207.51	31.48	157.45	184.59	190.18
10. Madhya Pradesh	6.24	15.65	31.84	2.77	8.58	3.47	7.07	125.27	82.40	150.80	103.45	209.75
11. Maharashtra	12.37	32.08	61.05	3.90	17.02	8.47	15.06	217.18	88.48	159.34	90.31	336.41
12. Manipur	14.08	50.14	113.80	8.15	42.84	5.93	7.30	72.76	17.04	250.10	126.96	425.64
13. Meghalaya	N.A.	13.16	70.21	N.A.	12.95	N.A.	0.21	N.A.	1.62	N.A.	433.51	N.A.
14. Nagaland	11.65	43.33	157.66	0.15	36.40	11.50	6.93	7666.66	19.04	271.93	263.86	24166.66
15. Orissa	4.25	12.79	39.59	2.04	7.20	2.21	5.59	108.33	77.64	200.94	209.30	252.94
16. Punjab	9.27	29.40	70.81	3.97	16.20	5.30	13.20	133.50	81.48	217.16	140.85	308.06
17. Rajasthan	6.29	18.01	41.95	2.48	8.92	3.81	9.09	153.63	101.91	186.33	132.93	259.68
18. Tamil Nadu	9.43	22.04	47.77	3.79	17.11	5.64	4.93	148.81	28.81	133.72	116.74	351.45
19. Tripura	13.63	38.34	113.45	5.31	26.16	8.32	12.18	156.69	46.56	181.29	195.91	892.66
20. Uttar Pradesh	5.38	13.06	29.58	1.61	6.15	3.47	6.19	234.16	100.65	142.75	126.49	281.99
21. West Bengal	9.76	19.00	48.50	4.28	12.20	5.48	6.80	128.04	55.74	94.67	155.26	185.05
22. Delhi	38.11	107.20	101.98	23.15	65.86	14.96	41.34	64.62	62.77	181.29	-4.87	184.49
India	7.84	19.78	N.A.	3.19	11.27	4.65	8.51	145.77	75.51	152.30	N.A.	253.29

Source :

1. Ministry of Education (INDIA), 1964. Education in India 1060-61, Vol.I.
2. Ministry of Education and Social welfare, (INDIA), 1975. "Education in India 1969-70.
3. Ministry of Education & Social welfare 1977 Education in India 1971-72.
4. Ministry of Education and Social welfare, 1985. A Handbook of Educational & Allied Statistics.

These are the very states which spend the highest amounts on education in rural areas also, except that Nagaland in 1961 used to spend miniscule amounts, per capita, in rural areas and Maharashtra's expenditure in rural areas is lower than that of Tripura, Gujarat in 1961 and Himachal Pradesh in 1971. On the other hand Bihar, Orissa, Uttar Pradesh and Madhya Pradesh are the states which spend the lowest amount of money, per capita, on education in total and rural population separately. Rajasthan and Jammu and Kashmir are the two other states with comparatively lower expenditure on education. We find that the states with high overall expenditure on education are marked by high expenditure in rural areas and those with low overall expenditure have, low expenditure in rural areas. But for all the states the per capita expenditure on education in rural areas is lower than the amount of per capita overall expenditure, although the difference, in absolute and relative terms, may show quite different values for different states. Moreover, for all the states except Gujarat, Nagaland and Tamil Nadu the difference has increased in 1971 as compared to the same in 1961.

The amount of difference of overall and rural is greater for Delhi, Maharashtra, Tripura for both the points of time. The other states with highest

difference are Nagaland in 1961 and Jammu and Kashmir, Punjab and Karnataka in 1971. The lowest difference in this respect is observed by Jammu and Kashmir, Madhya Pradesh, Bihar at both the times, Orissa and Assam in 1961 and Gujarat and Andhra Pradesh in 1971.

However, the absolute difference of expenditure in total and rural areas may not be important as it is affected by levels of expenditure. So, we take the difference $(X_{36}-X_{37})$ as percentage of expenditure in rural areas and find that Maharashtra has the highest difference, in absolute as well as relative terms. In these relative terms the state of Uttar Pradesh, Maharashtra and Rajasthan have the highest difference of overall and rural areas, and Gujarat and Manipur have the lowest, for all the points in study period. The other states with highest difference, in relative terms, are Kerala, and Nagaland in 1961, and Jammu and Kashmir and Karnataka in 1971. The other states with lowest expenditure are Delhi, Jammu and Kashmir and Assam in 1961; and Meghalaya and Kerala in 1971. We find that Nagaland and Kerala have bridged the gap whereas in Jammu and Kashmir it has increased.

We can say that the states with highest per capita expenditure on education, generally, have high migration levels in their population and those with low expenditure

have low levels of migration. Similarly, the states with high per capita expenditure on education in rural areas record high migration in their rural population and those with low value of it have low migration levels in rural population as compared to all India rural and also in comparison with migration levels in their own urban areas. We can also say that the states with high expenditure and high gap of overall and rural expenditure have high and increasing levels of migration both in rural and urban areas. The typical example of this is Maharashtra. The states with low overall per capita expenditure on education, like Bihar, Madhya Pradesh and Uttar Pradesh, and those with low expenditure in rural areas, like Bihar and Jammu and Kashmir have low migration levels.

We can also see that the highest percentage variation in per capita expenditure on education (X_{36}) are associated with high and stable or increasing levels of migration. Punjab and Maharashtra are examples of it. On the contrary, those with lowest levels of per capita expenditure and lowest decadal changes in overall and rural expenditure, per capita, are associated with low and declining migration levels.

CHAPTER IV

MIGRATION, URBANISATION AND ECONOMIC DEVELOPMENT IN RAJASTHAN (A DISTRICT LEVEL ANALYSIS IN THE ALL INDIA CONTEXT

INTRODUCTORY STATEMENT

The growth rate of population in Rajasthan has been above the all India growth rate, except during 1911-21. The gap has been the widest during 1971-81 and except for the tiny states of Manipur, Meghalaya, Nagaland, Sikkim and Tripura, Rajasthan has recorded the highest growth in this decade. During the last two decades the growth of urban population has been phenomenal. It has been significantly higher than the corresponding all India growth rates which were themselves the highest in the century. The growth of urban population was higher than the growth of total population during these decades. According to an estimate by B.C. Mehta, urban population is expected to increase by 115% during the last 30 years of the present century whereas total population will increase by 65 per cent.[1]

A look at the Table IV.1 reveals that in most of the districts also, the growth of urban population was significantly higher than the growth of total population. However, the districts of Bikaner and Churu, which

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1. B.C. Mehta (1983), "Population of Rajasthan in 2001", paper presented at the XIII Rajasthan Economic Conference, March.

TABLE IV.1

DECENNIAL GROWTH RATE OF POPULATION AND THE URBAN POPULATION GROWTH (1901-1981)

	State/Distt.	Growth of Population								Urban Population Growth							
		1901-11	1911-21	1921-31	1931-41	1941-51	1951-61	1961-71	1071-81	1901-11	1911-21	1921-31	1931-41	1941-51	1951-61	1961-71	1971-81
1.	Ganganagar	43.7	-17.2	102.5	54.6	18.0	64.6	34.4	44.51	11.67	48.75	128.75	78.45	88.95	64.94	53.23	80.29
2.	Bikaner	-8.6	-3.9	18.2	34.3	8.8	29.6	28.9	46.57	5.18	24.33	23.80	59.21	8.91	26.20	26.13	38.18
3.	Churu	15.1	-0.1	22.3	24.6	15.0	25.9	32.7	34.51	11.62	36.19	29.34	37.42	19.99	12.39	24.31	33.29
4.	Jhunjhunun	8.1	-4.3	14.8	21.1	19.9	22.2	29.1	28.40	2.30	-8.43	19.93	15.62	49.73	-9.27	27.27	55.27
5.	Alwar	-4.7	-11.4	6.9	9.8	2.0	26.5	27.6	25.31	21.72	-3.59	5.09	13.16	5.55	-11.07	14.36	50.01
6.	Bharatpur	-8.5	-11.7	2.1	16.3	5.4	26.7	29.6	26.09	-14.08	-7.88	1.33	15.76	20.65	4.49	30.66	26.55
7.	Swai Madhopur	-0.8	-10.1	10.1	13.0	12.1	23.3	26.5	28.41	-6.78	-6.76	11.88	10.49	42.54	-0.10	47.81	42.05
8.	Jaipur	-5.8	-18.0	11.5	13.9	28.3	24.8	30.5	37.91	-15.75	-7.04	17.78	18.14	66.69	14.69	49.38	66:23
9.	Sikar	-0.6	-1.5	12.7	17.9	10.0	21.3	27.1	31.69	1.20	-4.13	18.24	14.92	37.33	-3.09	23.56	57.08
10.	Ajmer	-3.2	-3.7	13.2	14.9	20.2	19.1	17.5	24.73	4.68	15.45	10.29	18.76	41.58	11.60	18.19	40.69
11.	Tonk	46.0	-7.7	16.5	10.9	3.4	22.3	25.7	25.24	1.69	-12.59	15.39	9.94	11.15	0.94	48.79	31.75
12.	Jaisalmer	15.4	-20.6	13.6	23.3	13.1	28.6	18.8	42.49	-7.21	-29.97	25.55	0.20	12.64	3.83	78.42	27.33
13.	Jodhpur	B12.5	-12.1	16.0	25.9	20.4	31.7	30.2	43.35	0.63	-9.39	25.37	29.35	32.63	18.78	38.85	54.08
14.	Nagaur	6.7	-12.8	16.6	15.5	16.4	22.4	35.0	28.70	-4.58	-3.13	26.11	13.62	24.87	21.17	28.43	53.00
15.	Pali	315.9	-11.7	17.3	17.4	19.0	21.9	20.4	31.12	-2.32	-12.22	14.36	28.03	64.19	-14.86	41.31	115.72
16.	Barmer	-4.3	-6.0	9.5	-128.0	21.0	36.1	19.2	43.76	-2.99	0.11	16.42	35.31	48.78	21.19	41.59	70.97
17.	Jalor	10.7	-7.2	15.8	14.1	15.0	29.2	22.1	35.14	7.09	-11.96	16.76	17.23	8.33	-11.90	19.48	146.49
18.	Sirohi	516.4	-9.5	14.8	8.8	22.9	21.6	20.3	27.54	3.24	-2.93	16.28	9.35	50.61	28.98	31.12	26.22
19.	Bhilwara	23.7	6.2	14.4	19.3	15.3	18.8	21.8	24.04	-6.49	0.93	11.15	20.56	69.56	-6.03	83.35	61.88
20.	Udaipur	23.7	6.2	14.4	19.3	17.6	22.7	26.4	30.39	-23.88	7.34	17.75	26.04	65.85	8.12	38.69	58.67
21.	Chittaurgarh	23.3	6.6	14.4	18.5	13.1	21.7	26.4	30.21	-8.35	7.03	30.00	30.24	20.59	7.18	44.59	65.96
22.	Dungarpur	59.0	18.9	20.2	20.5	12.4	32.0	30.3	28.40	144.22	15.12	2.73	8.61	13.73	-1.53	45.99	41.16
23.	Banswara	13.4	17.1	18.7	15.1	18.9	33.3	37.7	35.31	45.77	10.33	19.38	20.57	20.83	26.14	33.73	66.20
24.	Bundi	27.7	-14.5	15.9	15.1	12.5	20.5	32.8	30.64	3.12	7.02	21.98	9.50	36:05	8.34	26.69	52.31
25.	Kota	16.3	-2.8	7.2	13.2	5.4	26.6	34.8	35.45	1.66	-4.52	14.99	21.94	42.20	43.11	71.82	77.00
26.	Jhalawar	18.9	-0.6	10.2	13.5	8.1	21.9	26.8	25.85	9.90	-8.88	3.85	7.82	74.53	-23.78	56.63	55.56
	RAJASTHAN	+6.7	-6.3	14.1	16.1	15.2	26.2	27.8	32.38	-4.83	-0.03	17.21	22.43	39.59	11.04	38.47	57.15

Source: 1. Census of India, Rajasthan Ser. 18, P+I General Report, 1971

2. Census of India, Rajasthan, Ser. 18, Part I, Final Totals, 1981 (Hindi) (for 1981 data.)

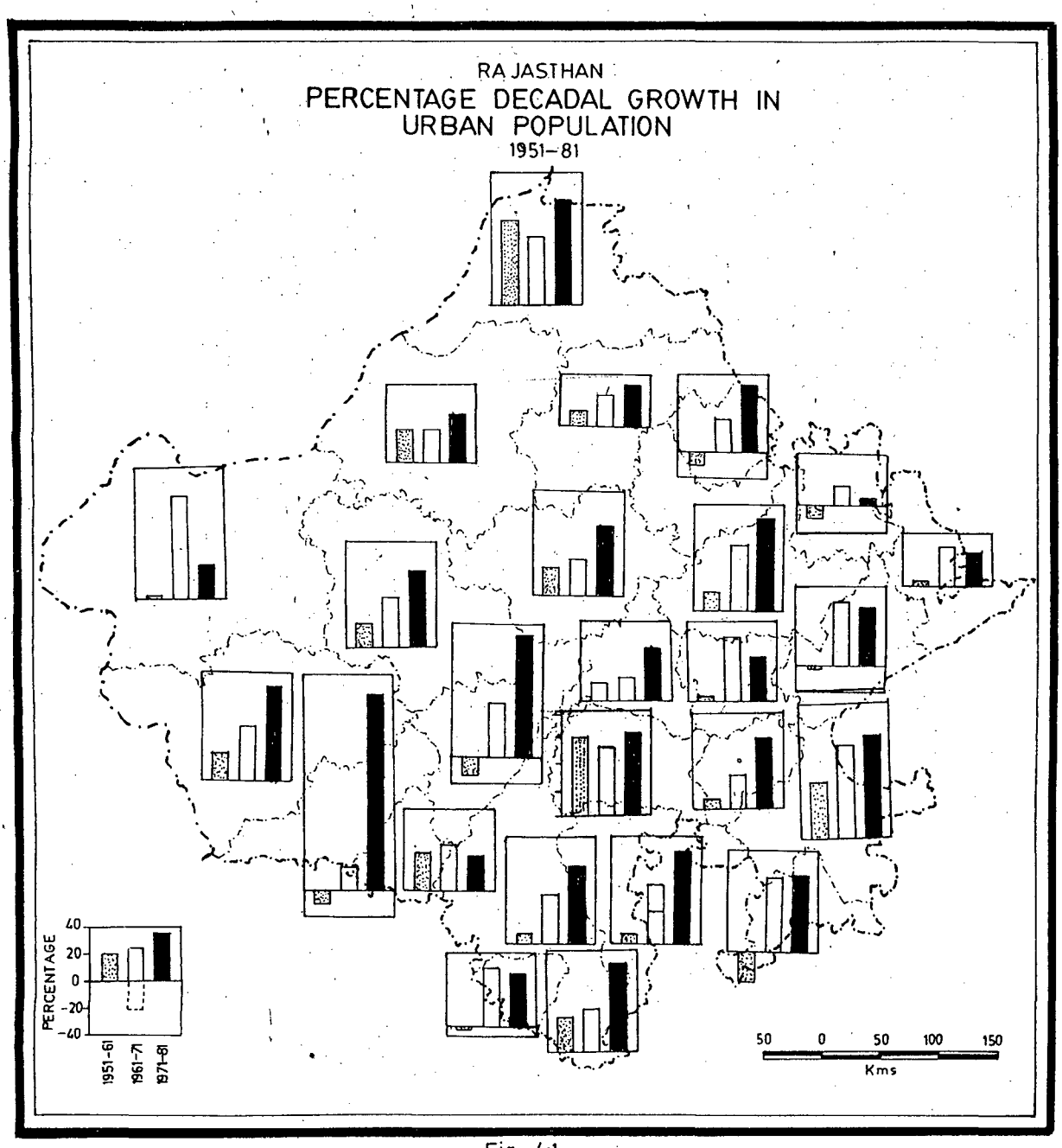
RAJASTHAN
PERCENTAGE DECADAL GROWTH IN
URBAN POPULATION
1951–81
PERCENTAGE
40
20
0
-20
-40
1951-61
1961-71
1971-81
50 0 50 100 150
Kms

Fig. 4·1

already had a high proportion of their population living in urban areas, were exceptions to this trend during 1961-71 as well as 1971-81, and the districts of Bundi and Jaisalmer, which had a low proportion of their population living in urban areas, violated the trend during 1961-71 and 1971-81, respectively. The district-level urban population growth is also shown in figure 4.1.

The fast growth of urban population has resulted in an increase in urban ratio of Rajasthan from 16.25 in 1961 to 17.60 in 1971 to 21 in 1981, the decadal rate of increase in it matching almost of the same for India. A look at the Table IV.2 reveals that the six districts of Rajasthan namely Bikaner, Ajmer, Churu, Jodhpur, Jaipur, and Kota have urban ratio consistently higher than the all India urban ratio at all points in the study period, whereas Ganganagar and Jhunjhunu have urban ratio equivalent to that of Rajasthan. Although the dispersion of urban ratio at district level in Rajasthan is lower than the dispersion experienced by this ratio at state level for India, and the spatial distribution is becoming less unequal over time (Table IV.3) there exist sharp differences (see figure 4.2). For example, as opposed to the districts mentioned above, which have urban ratio higher than the all India and

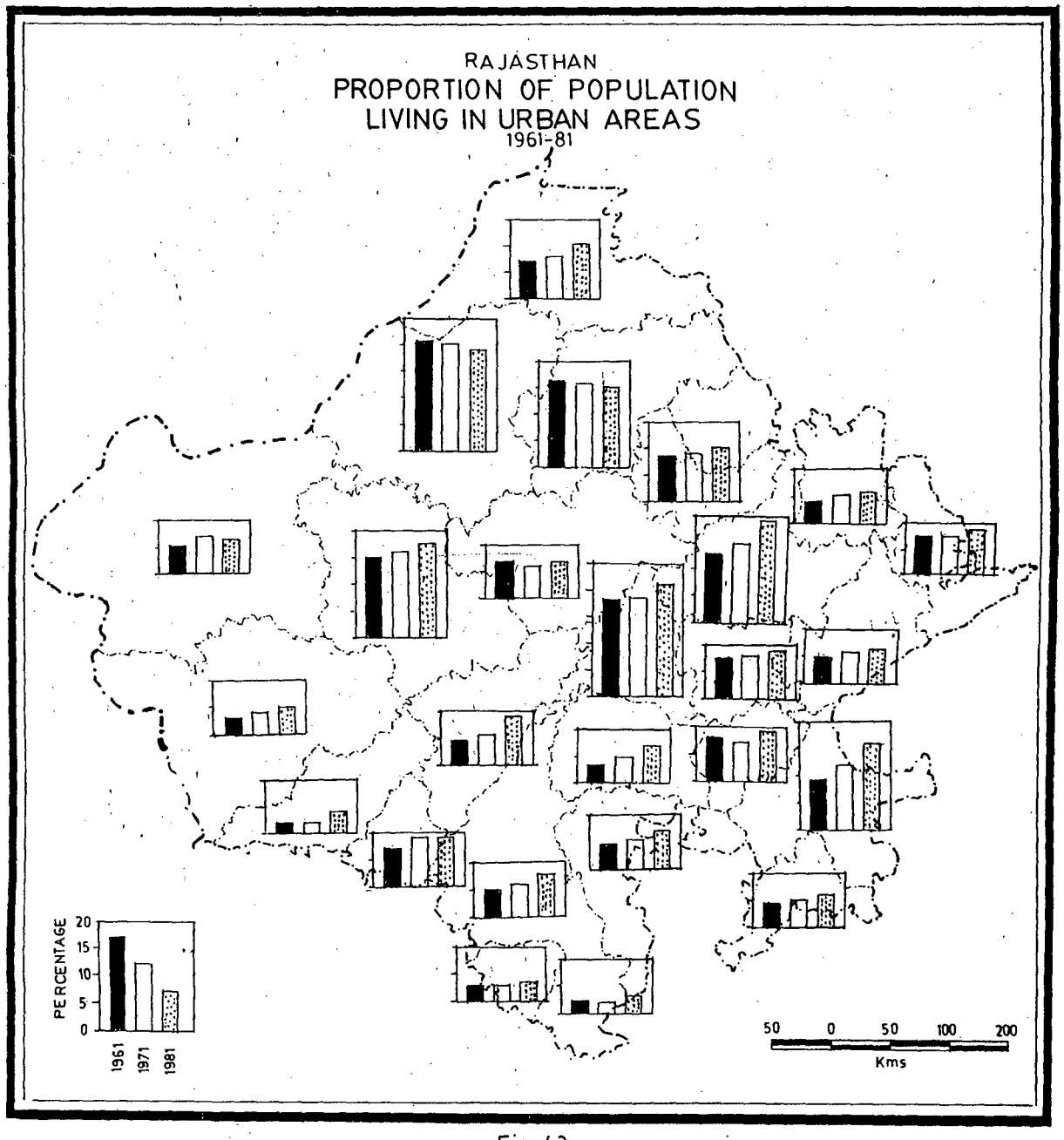
RAJASTHAN
PROPORTION OF POPULATION
LIVING IN URBAN AREAS
1961-81
PERCENTAGE
20
15
10
5
0
1961
1971
1981
50 0 50 100 200
Kms

Fig. 4·2

TABLE IV.2

Proportion of Population Living in Urban Areas (Urban Ratio)

District	Urban Ratio (X18)			Decadal Percentage variation	
	1961	1971	1981	1961-71	1971-81
1. Ganganagar	14.50	16.60	20.61	14.48	24.16
2. Bikaner	42.30	41.40	39.48	-2.13	-4.64
3. Ghuru	31.60	29.60	29.22	-6.33	-1.28
4. Jhunjunu	17.70	17.40	20.74	-1.69	19.20
5. Alwar	8.10	9.10	11.08	12.35	21.76
6. Bharatpur	13.70	13.80	17.07	0.73	23.70
7. Sawai Madhupur	10.20	11.90	13.42	16.67	12.77
8. Jaipur	26.30	30.00	36.56	14.07	21.87
9. Sigar	17.50	17.00	20.25	-2.86	19.12
10. Ajmer	37.40	37.60	42.80	0.53	13.83
11. Tonk	14.70	17.40	18.36	18.37	5.52
12. Jaiselmer	9.70	14.60	13.55	50.52	-7.19
13. Jodhpur	29.90	31.90	34.77	6.69	9.00
14. Nagaur	12.90	12.30	14.56	-4.65	18.37
15. Pali	9.50	11.30	18.42	18.95	63.01
16. Barmer	6.10	7.30	8.78	19.67	20.27
17. Jalor	4.50	4.40	8.06	-2.22	83.18
18. Sirohi	16.40	17.90	17.90	9.15	0.00
19. Bhilwara	7.30	11.00	14.39	50.68	30.82
20. Udaipur	10.90	12.30	15.07	12.84	22.52
21. Chiturgarh	9.50	10.40	13.18	9.47	26.73
22. Dungerpur	5.30	5.90	6.46	11.32	9.49
23. Banswar	5.20	5.10	6.22	-1.92	21.96
24. Bundi	15.30	14.60	17.01	-4.58	16.51
25. Kota	18.90	24.00	31.93	26.98	33.04
26. Jhalawar	7.70	9.50	11.66	23.38	22.74
Rajasthan	16.25	17.60	21.00	8.29	19.34
INDIA	17.98	19.91	23.70	10.73	19.05

Source: 1. Census of India, 1971, Series 18, Rajasthan General Report, Part 1.

2. Census of India, 1981, Series 18, Rajasthan, Provisional Population Totals, Paper 1 of 1981.

TABLE IV.3

AVERAGES OF, AND LEVELS OF DISPERSION IN, MALE MIGRANT RATIOS AND URBAN RATIO - 1961, 1971, 1981

Ratio/Year	Average			Coefficient of variation		
	1961	1971	1981	1961	1971	1981
1. Migrant Ratio (X_1)	12.05	12.91	12.49	53.39	43.66	44.62
2. Migrant Ratio in (X_2) Rural areas	9.68	10.34	10.11	60.78	50.50	52.74
3. Migrant Ratio in Urban areas (X_3)	25.00	25.61	25.05	36.58	33.65	31.75
4. Inter-State Migrant Ratio (X_4)	2.12	2.02	2.08	173.11	118.74	108.65
5. Inter-State Migrant Ratio in Rural Areas (X_5)	1.42	1.23	1.41	243.15	171.71	150.35
6. Inter-State Migrant Ratio in Urban Areas (X_6)	5.50	5.61	5.37	95.20	74.39	69.09
7. Intra-District Migrant Ratio (X_7)	6.69	7.58	6.77	27.18	42.02	34.57
8. Intra-District Migrant Ratio in Rural Area (X_8)	6.14	7.20	6.15	32.67	47.88	42.85
9. Intra-District Migrant Ratio In Urban Areas (X_9)	10.12	10.40	10.42	26.29	31.07	35.09
10. Urban Ratio (X_{10})	15.50	16.70	19.29	65.41	59.36	53.29

equivalent to the value of it in Rajasthan the lowest urban ratios consistently experienced by Jalor, Banswara, Dungarpur, Barmer and Jhalawar in 1961, 1971 and 1981 are even less than half of the urban ratio of Rajasthan.

Table IV.2 shows that for all districts, except Bikaner and Churu where marginal but continuous decline was experienced, the urban ratio in 1981 is higher than the corresponding 1961 figure. In fact, out of the twenty four such districts seventeen districts registered a continuous increase in the urban ratio; six districts which had decline in 1961-71 registered very high increases in it during the next decade whereas only one district, Jaisalmer, had a decline in urban ratio during 1971-81, although it had an increase of over 50% in the previous decade.

Out of the 24 districts, which show an increase in urban ratio during the study period, 18 show a definite and significant acceleration in the decadal rate of increase, for 5 districts the rate of increase shows a decline and only in case of Jaisalmer a decline during the latter period opposed to the heaviest increase in previous decade is observed. The highest decadal rates of increase in urban ratios were registered by Kota, which had one of the highest values of urban ratio and by Bhilwara and Jhalawar, which had one of the lowest

urban ratios. But the question arises as to how the high or low growth of urban population in the districts of Rajasthan is related with the levels of urbanisation in them. Let us consider the following results:

Coefficients of Correlation

Urban ratio	Decadal growth of urban population	1951-61	1961-71	1971-81
1961		0.329	-0.279	-0.323
1971		0.358	-0.094	-0.322
1981		0.352	-0.071	-0.186

The 1951-61 urban growth seems to be related positively with the level of urbanisation. However, the significantly negative coefficients of correlation of the 1961 urban ratio with the growth of urban population during the subsequent decades of sixties and seventies, a similar value of the coefficient of correlation of the 1971 urban ratio with the growth of urban population during the seventies, can be taken to mean that the high growth of urban population in post-1961 period is taking place in the districts with low rather than high urban ratio. It is necessary to know the structure and pattern of migration in Rajasthan in the proper and relevant socio-economic context in order to understand the true nature of urban processes in the state.

The objective of this chapter is to take note of the district-level migration pattern in Rajasthan and to see whether its relations with certain socio-economic variables are similar to, or different from the relationships we observed in the state-level analysis for India. Unfortunately, the data on per capita income and the sectoral shares of income, unemployment rates, per capita expenditure on education and also on per capita expenditure on education in rural areas are not available at district level and consequently the per capita availability and the sectoral structure and composition of income and the temporal changes in them, the unemployment situation in rural and urban areas separately, as also the per capita expenditure on education, which we found helpful in the earlier analysis for states of India, are being left out here owing to the above-stated data limitations. However, a discussion on relation of migration structure with the behaviour of the indicators of agricultural development in various districts at various points in study period and an analysis of the structure of male employment in non-agriculture and non-household manufacturing, occupations, in rural and urban areas separately has been done. Apart from these, two other indicators are - road length per hundred square kilometres and hospitals per lakh of population were also considered.

Migration Pattern in Rajasthan:

In the earlier chapters we discussed Rajasthan in the context of all India trends and in relation to the other states. We find that all migration ratios in Rajasthan, except the inter-state migration ratio in rural areas (X_5) were significantly below the corresponding all India levels, although the gap has narrowed down during the study period, except again in the case of inter-state rural ratio (X_5) which maintains higher than all India position (see Table IV.4). Rajasthan had high rural as well as urban out-migration both in 1971 as well as 1981, although it had a positive decadal growth of net migrants. As opposed to the all India trend of continuous decline in all the migrant ratios, Rajasthan had continuous decline in its migration ratios in urban areas (X_3, X_6, X_9) only. All other ratios, particularly those of rural areas registered an overall increase during the study period, except that long-distance migration levels in rural areas show a marginal decline. This continuous decline in migration ratios in urban areas has to be taken note of in a situation of Rajasthan where urban processes are widening and deepening. Since we have already done state-level analysis in earlier chapters, it would be pertinent to proceed to district level analysis.

Migration Ratios: District Level Behaviour:

Before we go to the discussion on levels of different migration ratios, let us have a look at the mean values and see how uniform are the distributions of these indicators around respective mean values.

The Table IV.3 shows that the average for inter-state migration ratios (X_4, X_5, X_6) in 1981 were lower than the corresponding average in 1961, although the actual figures for Rajasthan (Table IV.4) show that inter-state migration ratio (X_4) in 1981 was marginally above the same in 1961. So, we can conclude that during the study period there was a decline in the long-distance migration levels in Rajasthan's total male population as also male population in rural and urban areas separately.

As regards the uniformity or otherwise, of distributions of these variables across districts, the level of dispersion measured by the coefficient of variation shows that rural migrant ratios (X_2, X_5 and X_8) were more unequal in their distributions as compared to their urban counterparts (X_3, X_6 and X_9). A comparison of figures 4.3 and 4.4 will help to grasp the broad rural-urban dissimilarity in migration levels. We can also say that the dispersion level experienced by intra-district migration ratios (X_7, X_8 and X_9)

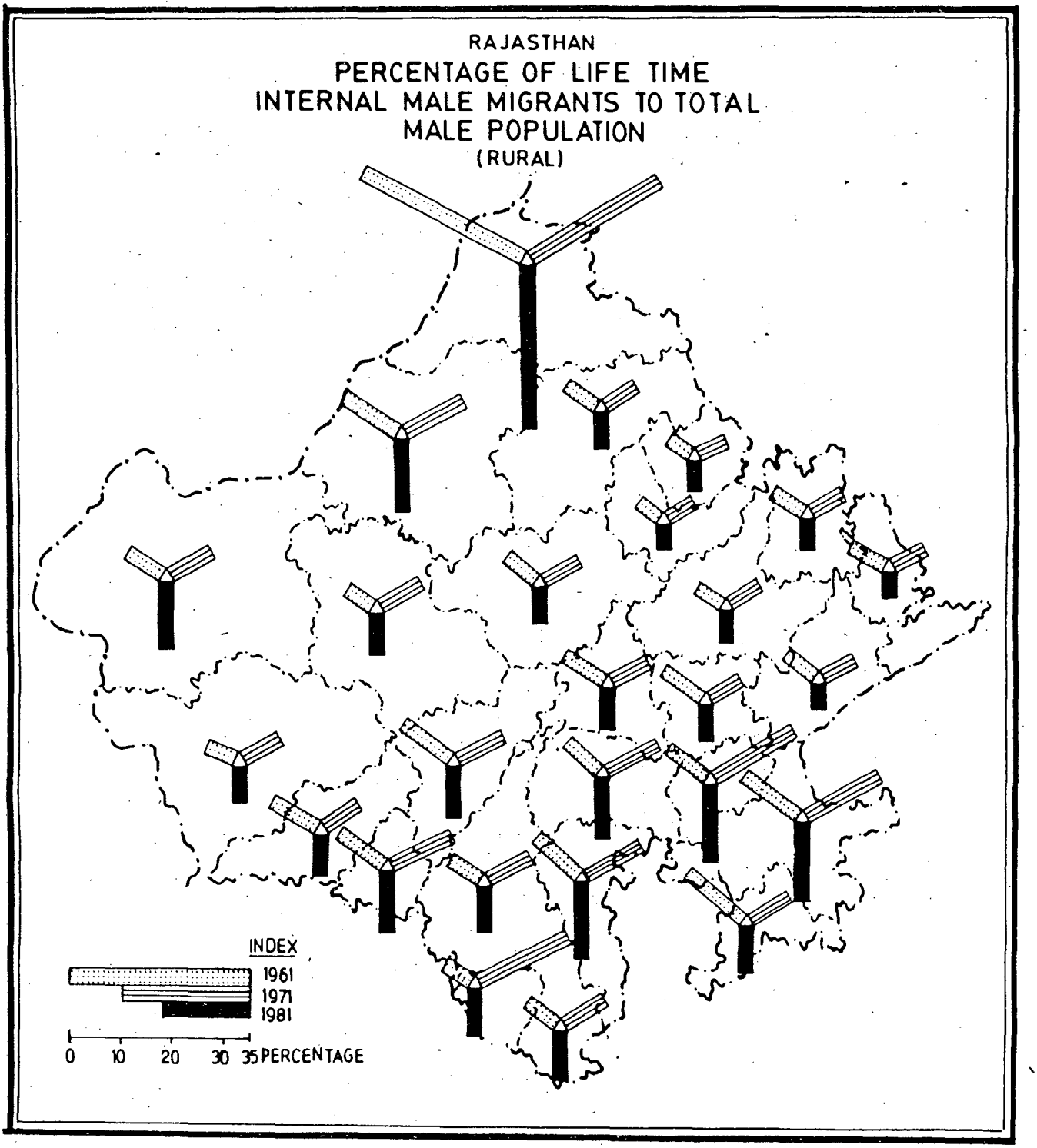
RAJASTHAN
PERCENTAGE OF LIFE TIME
INTERNAL MALE MIGRANTS TO TOTAL
MALE POPULATION
(RURAL)
INDEX
1961
1971
1981
0 10 20 30 35 PERCENTAGE

Fig. 4.3

are significantly less than their counterparts - migrant ratios (X_1, X_2 and X_3) and the ratios of long-distance migration (X_4, X_5, and X_6). But at the same time, it is true that all ratios, except intra-district migrant ratios (X_7, X_8, and X_9), show a decline in disparity over the study period, whereas these three tend to become less uniform over time.

If we compare the disparity in spatial distribution of these migration ratios, across districts with the disparity across states which we discussed in chapter II, we find that the migration ratio (X_1) during 1961 and 1971, the migrant ratio in rural areas (X_2) throughout the study period, migration ratio in urban areas (X_3) in 1961, the inter-state migration ratio in rural areas (X_5) in 1961 and 1971 and the inter-state migrant ratio in urban areas (X_6) in 1961, were significantly more unequal as compared to the level of disparity experienced at state-level. We can conclude that migration levels in rural areas, specially w.r.t. long-distance migration, vary much more across districts as compared to the variation of their urban counterparts and also as compared to the variation levels across states in this regard.

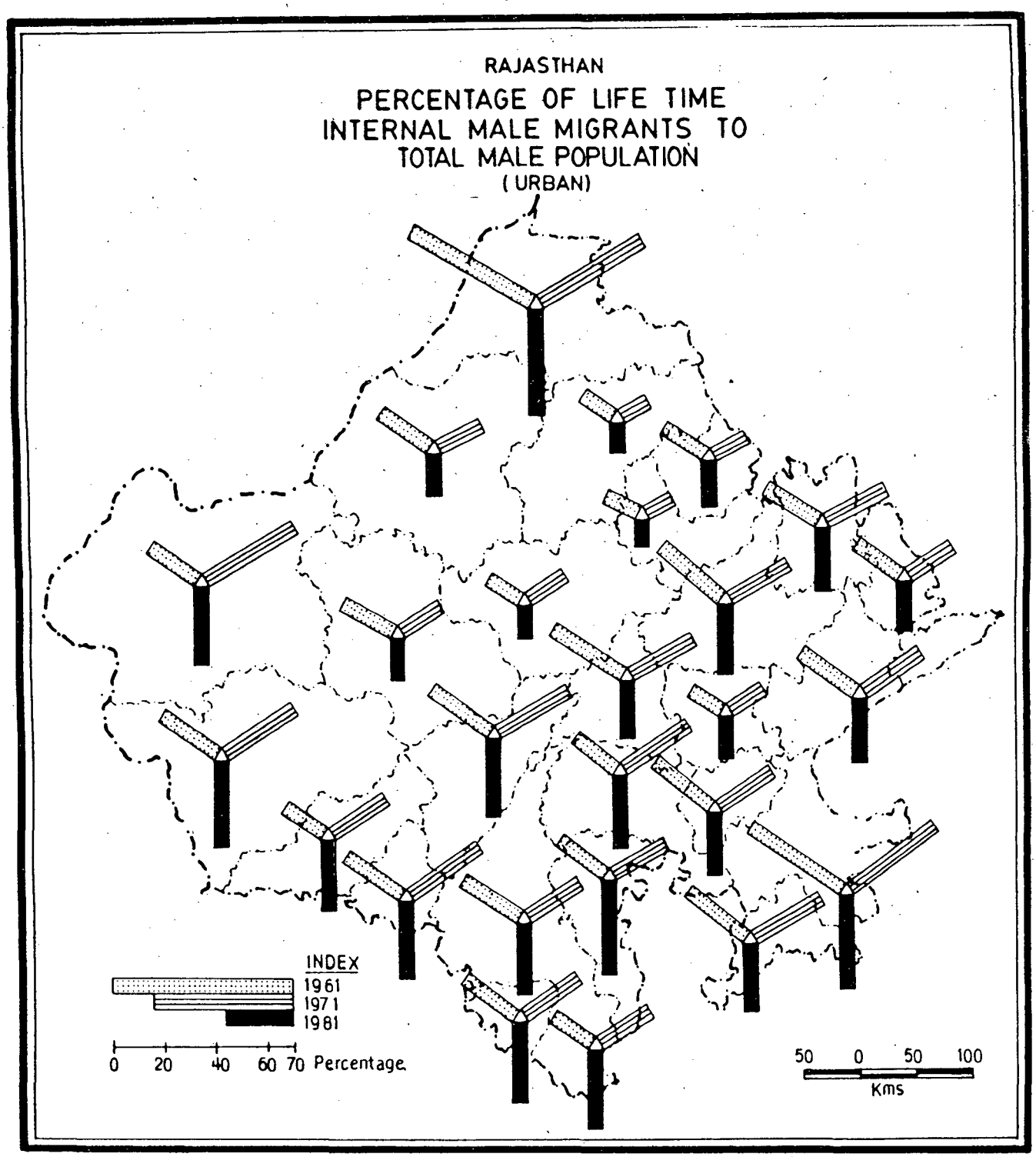
RAJASTHAN
PERCENTAGE OF LIFE TIME
INTERNAL MALE MIGRANTS TO
TOTAL MALE POPULATION
(URBAN)
INDEX
1961
1971
1981
0 20 40 60 70 Percentage
50 0 50 100
Kms

Fig. 4.4

Migration Levels in Different Districts - The Highest and the Lowest:

Table IV.4 exhibits the migration scene in the districts of Rajasthan. The figures 4.3, 4.4 and 4.5 also highlight the spatial temporal variations in rural migration, urban migration and long-distance migration levels, respectively. Ganganagar and Kota are the districts which have the highest values of all migration ratios consistently in 1961, 1971 and 1981. Ajmer, Bikaner and Jhalawar also have highest value of migrant ratio (X_1) consistently for all the three points of time in the study period. Ajmer has relatively low migration level in rural areas whereas w.r.t. urban migrant ratios (X_3, X_6 and X_9) it figures among the highest in 1961 but due to the decline it experiences in all its migration ratios over time, it does not stand among the highest at the next two points in the study period. Bikaner has the highest values of migrant ratio in rural areas (X_2) and intra-district migrant ratio (X_8) consistently for all points in the study period, highest value of inter-state migrant ratio (X_4) and intra-district migrant ratio (X_7) in 1961, but its migration ratios in urban areas are very low. The low migration ratios in urban areas (X_3, X_6 and X_9) of Bikaner and the declining over in Ajmer, despite their having highest values of urban ratio (X_{18}) indicates the low share of

TABLE IV.4

LIFETIME INTERNAL MALE MIGRANTS AS PERCENTAGE OF MALE POPULATION (MIGRANT RATIOS), IN RURAL AND URBAN AREAS: - 1961, 1971, 1981

Districts	Migrants (X_1)			Rural (X_2)			Inter-State (X_3)			Inter-State (X_4)			Inter-State (Rural) (X_5)			Inter-State (Urban) (X_6)			Intra-District (X_7)			Intra-district (Rural) (X_8)			Intra-District (Urban) (X_9)		
	1961	1971	1981	1961	1971	1981	1961	1971	1981	1961	1971	1981	1961	1971	1981	1961	1971	1981	1961	1971	1981	1961	1971	1981	1961	1971	1981
1. Ganganagar	37.68	32.07	32.32	34.75	29.34	30.98	54.60	45.64	40.55	19.34	12.50	11.64	17.97	10.97	10.93	27.29	20.11	17.52	11.11	14.55	15.45	11.51	14.95	16.44	8.79	12.55	11.72
2. Bikaner	16.54	15.49	14.61	12.62	13.16	13.82	21.91	18.81	15.80	2.16	2.43	2.24	0.70	0.70	1.11	1.10	4.90	3.95	7.90	7.39	6.18	7.98	8.62	7.06	7.80	5.63	4.85
3. Churu	9.31	8.51	7.92	7.16	6.99	6.74	14.16	12.22	10.79	1.07	1.04	0.97	0.67	0.68	0.63	1.98	1.91	1.79	5.16	4.71	4.71	4.42	4.31	4.45	6.85	5.69	5.34
4. Jhunjhunun	7.70	8.01	8.48	5.27	6.47	5.97	18.79	15.29	17.79	1.42	1.75	1.78	0.80	1.07	0.97	1.25	5.02	4.78	4.73	4.71	4.87	3.65	4.28	3.72	9.65	6.72	9.12
5. Alwar	6.58	8.81	8.17	7.16	7.04	6.12	24.59	26.44	24.31	1.85	2.21	1.91	1.51	1.80	1.41	5.64	6.32	5.82	5.08	5.27	4.66	4.36	4.35	3.68	13.18	14.48	12.37
6. Bharatpur	9.25	8.31	7.39	7.42	6.83	4.98	20.97	20.12	19.33	2.83	2.59	2.51	2.05	1.92	1.51	7.79	9.33	7.46	9.33	7.46	5.24	4.79	3.96	4.54	4.22	2.95	9.67
7. Swai Madhopur	8.82	9.48	7.60	6.78	7.09	5.06	26.83	27.14	24.08	1.02	1.03	1.01	0.48	0.42	0.40	5.74	5.61	4.97	5.49	6.48	4.80	4.78	5.47	3.66	11.75	13.93	12.24
8. Jaipur	11.82	12.43	14.02	5.77	6.61	6.61	29.50	26.16	26.85	1.88	2.16	2.70	0.25	0.30	0.43	6.64	6.55	6.63	6.34	6.26	6.08	4.40	5.13	4.77	12.02	8.92	8.36
9. Sikar	7.10	6.81	6.44	5.70	6.01	5.27	13.84	10.73	11.05	0.48	0.51	0.46	0.29	0.32	0.26	1.36	1.44	1.22	4.64	4.21	3.89	3.85	3.97	3.43	8.46	5.39	5.70
10. Ajmer	18.28	15.38	14.19	9.07	7.95	7.85	34.28	28.07	22.64	3.52	3.02	2.35	0.30	0.30	0.21	9.35	7.66	5.19	8.32	7.23	6.45	6.16	5.66	5.40	12.25	9.99	7.83
11. Tonk	9.96	9.19	8.84	9.39	7.83	7.08	13.90	15.71	16.45	0.41	0.75	0.48	0.24	0.25	0.28	1.44	3.19	1.37	5.60	5.04	4.92	5.58	4.78	4.29	5.74	6.26	7.70
12. Jaisalmer	9.44	13.57	15.71	8.12	8.63	13.48	22.74	39.30	30.70	0.64	1.33	0.94	0.33	0.20	0.16	3.79	7.76	5.72	5.94	6.81	7.43	5.90	5.63	6.73	6.31	11.25	11.69
13. Jodhpur	10.70	11.07	10.92	6.19	8.53	8.67	21.54	17.96	16.23	1.59	1.34	1.22	0.16	0.15	0.20	5.02	3.87	3.12	5.68	5.92	5.91	4.82	6.58	6.25	7.74	5.68	5.27
14. Nagaur	8.39	9.07	8.10	7.38	7.95	7.16	15.11	16.90	13.45	0.35	0.37	0.33	0.14	0.22	0.22	1.72	1.45	0.96	6.21	6.55	5.56	5.92	6.18	5.14	7.90	9.17	7.93
15. Pali	12.52	13.02	13.98	10.82	10.58	10.12	28.55	31.85	30.53	0.51	0.84	1.06	0.39	0.62	0.61	1.67	2.52	3.01	8.60	8.42	8.27	7.97	7.44	6.84	14.80	16.02	14.43
16. Barmer	7.25	9.73	9.81	6.09	8.01	7.52	26.02	31.65	32.88	0.26	0.36	0.33	0.12	0.18	0.16	2.50	2.58	2.01	5.05	6.76	7.02	4.42	6.06	5.63	15.19	15.77	20.57
17. Jalor	10.30	8.66	10.00	9.92	7.88	8.36	18.08	25.20	28.23	0.40	0.59	0.77	0.35	0.56	0.61	1.42	1.30	2.56	7.38	5.40	6.25	7.33	5.09	5.52	8.44	11.77	14.25
18. Sirohi	14.44	16.73	15.61	10.58	13.15	12.17	34.01	33.05	30.71	2.07	2.52	2.74	0.78	1.29	1.47	8.61	8.14	8.30	8.65	9.77	8.20	7.93	9.49	8.05	12.28	11.07	8.85
19. Bhilwara	7.96	12.47	12.20	6.95	10.27	12.09	20.62	30.18	29.42	0.44	0.63	0.71	0.19	0.30	0.73	3.52	3.33	3.07	5.60	8.54	7.60	5.23	7.84	6.33	10.24	14.20	15.05
20. Udaipur	8.96	10.56	11.92	6.83	8.57	8.91	26.11	24.40	28.21	0.78	0.89	1.30	0.35	0.49	0.73	4.22	3.69	4.38	6.46	7.52	7.72	5.50	6.86	6.54	14.21	12.09	14.49
21. Chittaurgarh	12.18	15.76	17.64	11.20	12.48	14.88	21.79	24.65	35.27	1.82	2.12	3.40	1.60	1.78	2.43	3.87	5.05	9.57	6.95	7.81	9.14	6.76	7.55	8.52	8.78	10.04	13.12
22. Dungarpur	7.15	20.41	10.31	6.21	20.05	8.95	23.69	25.95	28.97	0.57	0.48	0.89	0.47	0.32	0.58	2.38	2.85	5.04	5.19	18.44	7.55	4.88	18.84	7.33	10.69	12.26	10.40
23. Banswara	8.00	7.87	10.90	7.35	7.04	9.58	19.64	23.27	29.64	1.08	1.10	1.83	0.87	0.79	1.26	4.86	6.79	9.88	5.82	5.71	7.13	5.69	5.52	6.99	8.20	9.32	9.06
24. Bundi	14.09	18.83	16.46	11.90	18.00	14.87	26.53	23.81	24.33	1.13	1.76	2.39	0.69	21.58	2.11	3.85	2.81	3.38	7.51	9.86	6.37	7.35	9.98	6.00	8.47	9.17	8.15
25. Kota	22.09	22.14	22.21	17.34	15.86	15.35	43.00	41.90	36.72	3.77	4.82	5.29	1.89	1.94	2.51	12.10	13.89	11.18	11.39	10.98	9.76	10.92	10.83	8.91	13.44	11.46	11.57
26. Jhalawar	14.82	13.28	10.96	13.68	11.59	8.89	28.34	29.45	26.47	3.74	3.30	2.85	3.40	2.82	2.32	7.98	7.82	6.83	7.98	8.04	6.08	7.79	7.50	5.26	10.37	13.26	12.26
RAJASTHAN	12.20	12.73	12.81	9.50	10.10	9.66	26.38	25.22	24.41	2.37	2.24	2.38	1.60	1.38	1.43	6.42	6.30	5.87	6.66	7.35	6.83	5.95	6.86	6.13	10.37	9.61	9.41
ALL INDIA	18.05	17.49	16.64	14.37	13.07	11.39	40.17	34.95	32.22	3.56	3.44	3.74	1.40	1.35	1.20	13.25	11.68	9.68	10.35	9.31	8.23	9.88	9.06	7.67	12.47	10.28	9.99

Note: 1. Population and migrant figures for this table exclude international migrants and are not correlated for any boundary changes.
2. The figures for migrants in N.E.F.A., and Goa, Daman and Diu are excluded from 1961 all-India figures.
3. The 1981 figures for India exclude Assam where census could not be held due to disturbed conditions.

Source: 1. Census of India, 1961, Vol. XIV, Rajasthan: Migration Tables, Part III C(ii), Table D-III.
2. Census of India, 1971, Series 18, Rajasthan, Migration Tables, Part II-D, Tables D-I.
3. Census of India, 1981, Series 18, Rajasthan, Migration Tables, Part V A & B, Table D1.

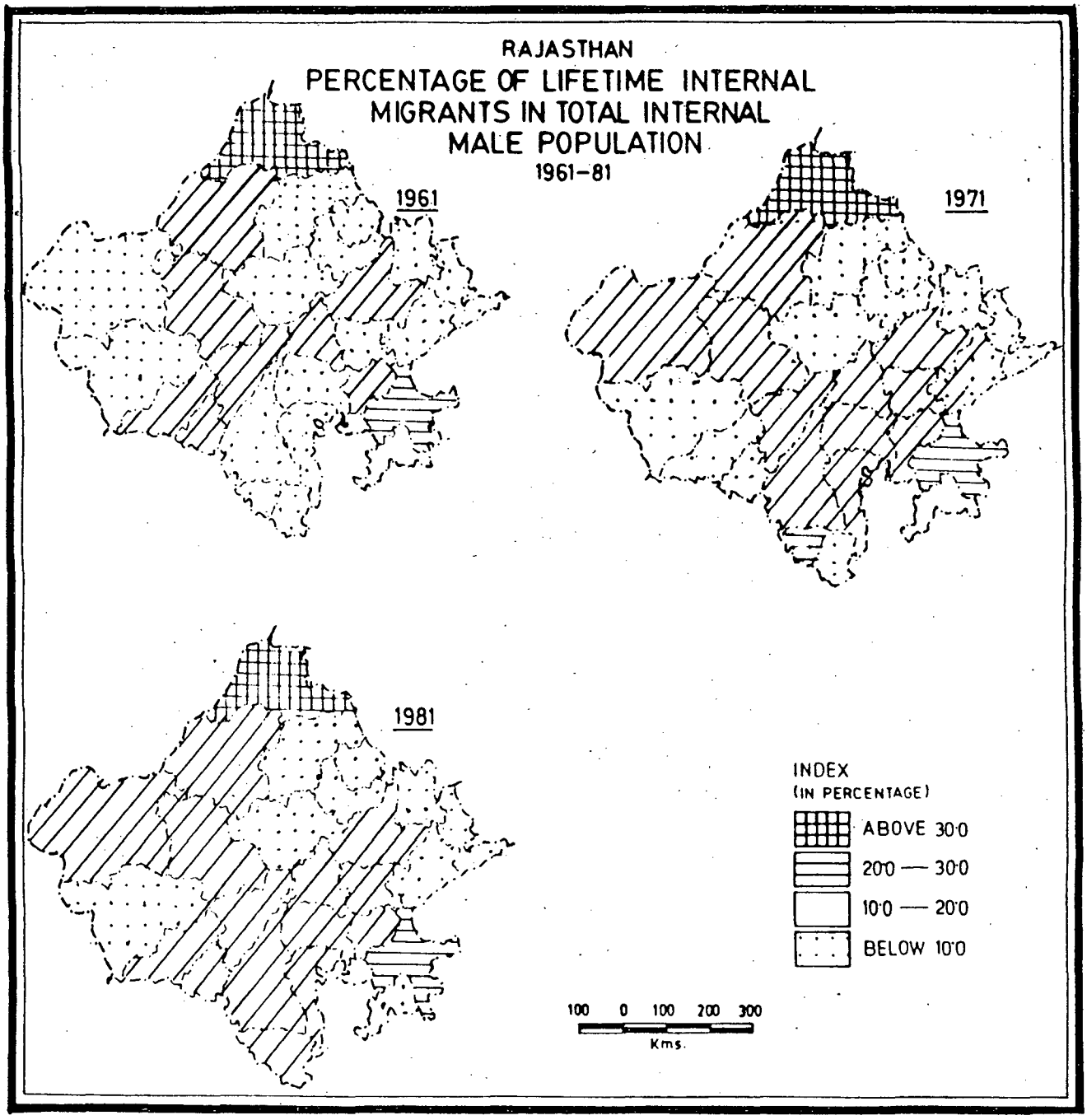
RAJASTHAN
PERCENTAGE OF LIFETIME INTERNAL MIGRANTS IN TOTAL INTERNAL MALE POPULATION
1961-81
1961
1971
1981
INDEX
(IN PERCENTAGE)
ABOVE 30·0
20·0 — 30·0
10·0 — 20·0
BELOW 10·0
100 0 100 200 300
Kms.

Fig: 4·5

migration in their urban growth. Jhalawar is among the highest w.r.t. X_4, X_5 and X_6 but its high levels in 1961 w.r.t. X_2, X_3 and X_8 experience fast declines over the next two decades.

There are a few more observations that can be made about some other districts. Bundi recorded the highest levels w.r.t. migrant ratio (X_1) and all migrant ratios in rural areas (X_2, X_5 and X_8) consistently in 1961, 1971 and 1981. Similar is the case with Chittorgarh. Bharatpur has one of the highest values of inter-state migrant ratios (X_4, X_5 and X_6), although other indicators show below average values. On the other hand Pali experiences high levels of short-distance migration (X_7, X_8 and X_9) and low levels of long-distance migration (X_4, X_5 and X_6) in its total rural population and for rural and urban areas separately.

Sikar and Jhunjhunu have lowest values w.r.t. all migrant ratios, consistently at all points in the study period, except that in Jhunjhunu district inter-state migration ratio (X_4) and inter-state migration ratio in rural areas (X_5) are not among the lowest and its inter-state migrant ratio in urban areas (X_6), for which it had one of the lowest values in 1961, increased very fast. This exception may be due to educational institutions run by the Birlas, and seeing the temporary

and esoteric nature of these migrations, we can ignore this exception. Bharatpur, Alwar and Churu have low migrant ratio (X_1) and low rural migrant ratio (X_2) in 1971 and 1981. They have consistently lowest levels of short-distance migration especially in the rural areas. Nagour has one of the lowest values of all migrant ratios in its urban areas (X_3, X_6 and X_9) and also the lowest value for inter-state migrant ratio (X_4) and inter-state migrant ratio in rural areas (X_5) consistently throughout the study period. Tonk generally recorded low values for all migration ratios throughout the study period. It can be put in the category of Sikar and Jhunjhunu. Barmer, Jalor, Pali and Bhilwara have the lowest values of inter-state migration ratio (X_4). Swai-Madhopur has low values of migration ratio (X_1) and of all the migrant ratios in its rural areas (X_2, X_5 and X_8).

The Pattern of Temporal changes in Migration Ratio:

Let us have a look at Table IV.5 in order to know the changes in migration situation at the district level. Ajmer which had relatively low migration levels in rural areas and high migration levels in its urban areas experienced a steep and continuous decline in each indicator during 1961-71 as well as 1971-81.

TABLE IV.5

Percentage Decadal Changes in Migrant Ratios, 1961-71, 1971-81

District	X_1		X_2		X_3		X_4		X_5		X_6		X_7		X_8		X_9	
	1961-71	1971-81	1961-71	1971-81	1961-71	1971-81	1961-71	1971-81	1961-71	1971-81	1961-71	1971-81	1961-71	1971-81	1961-71	1971-81	1961-71	1971-81
1. Ganganagar	-14.89	0.78	-15.57	5.59	-16.41	-11.15	-35.37	-6.88	-38.95	-0.36	-26.31	-12.88	30.96	6.19	29.89	9.97	42.78	-6.61
2. Bikaner	-6.35	-5.68	4.28	5.02	-14.15	-16.00	12.50	-7.82	0.00	50.57	345.45	19.39	-6.46	-16.37	8.02	-18.10	-27.82	-13.85
3. Churu	-8.59	-6.93	-2.37	-3.58	-13.70	-11.70	-2.80	-6.73	1.49	-7.35	-3.53	-6.28	-8.72	0.00	-2.49	3.25	-16.93	-5.27
4. Jhunjhunun	4.03	5.87	22.77	-7.73	-18.63	16.35	23.24	1.71	33.75	-9.35	301.60	-4.78	-0.42	3.40	17.26	13.08	-30.36	35.71
5. Alwar	2.68	-7.26	-1.68	-13.07	7.52	-8.06	-19.46	-13.57	-19.21	-21.67	12.06	7.91	3.74	-11.57	-0.23	-15.40	9.86	-14.57
6. Bharatpur	-10.16	-11.07	-7.95	-27.09	-4.05	-3.93	-8.48	-3.09	-6.34	-19.25	19.77	-20.04	-8.59	-17.33	-8.06	-30.09	-13.13	6.79
7. Swai Madhopur	7.48	-19.83	4.57	-28.63	1.16	-11.27	1.00	-1.94	-12.50	-4.76	-2.26	-11.41	18.03	-25.93	14.44	-33.09	18.55	-11.77
8. Jaipur	5.16	12.79	14.56	0.00	-11.32	2.64	14.89	24.00	20.00	43.77	-13.55	1.22	-1.26	-2.88	16.59	-7.02	-25.79	-6.28
9. Sikar	-4.08	-5.43	5.44	-12.31	-22.47	2.98	6.25	-9.80	10.34	-18.75	4.35	-15.28	-9.27	-7.60	3.12	-13.60	-36.29	5.57
10. Ajmer	-15.86	-7.74	-12.35	-1.26	-19.75	-19.34	-14.20	-22.19	0.00	-30.00	-18.07	-32.25	-13.10	-10.79	-8.12	-4.59	-18.69	-21.39
11. Tonk	-7.73	-3.81	-15.81	-9.58	13.02	4.71	82.93	-36.00	4.17	12.00	121.53	-57.05	-10.00	-2.38	-14.34	-10.25	8.12	23.00
12. Jaisalmer	43.75	17.24	6.26	56.20	72.82	-21.88	107.81	-29.32	-39.39	-20.00	104.73	-26.29	14.65	9.10	-4.58	19.54	78.29	3.91
13. Jodhpur	3.46	61.36	37.80	1.64	-16.81	-9.63	-15.72	-8.96	-6.25	33.33	-22.91	-19.38	4.23	-0.17	36.51	-5.02	-26.61	-8.27
14. Nagaur	8.10	-10.69	7.72	-9.94	11.85	-20.41	5.71	-10.81	57.14	0.00	-15.70	-33.79	5.48	-15.11	3.87	-16.83	16.08	-13.52
15. Pali	3.99	7.37	-2.22	-4.35	11.56	-4.14	64.71	26.19	58.97	-1.61	50.90	19.44	-2.09	-1.78	-6.30	-8.06	8.24	-9.93
16. Barmer	34.21	0.82	31.53	-6.12	21.64	3.89	38.46	-8.33	50.00	-11.11	3.20	-22.09	33.86	3.85	37.10	-7.10	3.82	30.44
17. Jalor	-15.92	15.47	-20.56	6.09	39.38	12.02	47.50	30.51	60.00	8.93	-8.45	96.92	-26.83	15.74	-30.56	8.45	39.45	21.07
18. Sirohi	15.85	-6.69	24.29	-7.45	-2.82	-7.08	21.74	8.73	65.36	13.95	-5.46	1.97	12.82	-16.07	19.67	-15.17	-9.85	-20.05
19. Bhilwara	56.66	-2.17	47.77	17.72	46.36	-2.52	43.18	12.70	57.89	143.33	-5.40	-7.81	52.50	-11.01	49.90	-19.26	38.00	5.99
20. Udaipur	17.86	12.88	25.48	-6.53	-6.55	15.61	14.10	46.07	40.00	48.98	-12.55	18.70	16.41	2.66	24.73	-4.66	-14.92	19.85
21. Chittaurgarh	12.97	28.20	11.43	19.23	13.13	43.08	14.48	60.38	11.25	36.52	30.49	89.50	12.37	17.03	11.69	12.85	14.61	30.68
22. Dungarpur	185.45	-49.49	222.87	-55.36	9.54	11.64	-15.79	85.42	-31.91	81.25	19.75	76.84	255.30	-59.06	286.07	-61.09	14.69	-15.17
23. Banswara	-1.63	30.50	-4.22	36.08	18.48	27.59	1.85	66.36	-9.20	55.49	39.71	45.51	-1.89	24.87	-2.99	26.63	13.66	-2.79
24. Bundi	33.64	-12.59	51.26	-17.39	-10.25	2.18	55.75	35.80	128.99	33.54	-23.01	52.94	31.29	-35.40	35.78	-39.88	8.26	-10.80
25. Kota	0.23	0.32	-8.54	-3.22	-2.58	-12.36	98.72	9.75	2.65	29.38	14.79	-19.51	-3.60	-11.11	-0.82	-17.73	-14.73	0.96
26. Jhalawar	-10.39	-17.96	-15.28	-23.30	2.12	-10.12	-11.76	-13.64	-17.06	-17.72	2.01	-12.66	0.75	-24.38	-3.72	-29.87	27.87	-7.99
RAJASTHAN	4.34	0.63	6.32	-4.36	-4.40	-3.21	-5.49	6.25	-13.75	3.62	-1.87	-6.83	10.36	-7.08	15.29	-10.64	-7.33	-2.08
ALL-INDIA	-7.61	-4.86	-9.05	-12.85	-13.00	-4.95	-3.37	-5.81	-3.57	-11.11	-11.85	-17.12	-10.05	-11.60	-8.30	-15.34	-17.56	-2.82

Note: Ibid Source: Ibid

Ganganagar which had highest values w.r.t. all migration ratios, recorded decline in migration ratios proper (X_1, X_2 and X_3) and the levels of long-distance migration (X_4, X_5 and X_6) but its short-distance migration ratio (X_7, X_8 and X_9) increase continuously except that intra-district migration ratio (X_9) shows a sharp decline during 1971-81. Decline in long-distance migration ratios and increases in short-distance migration in case of Ganganagar district are more prominent during sixties than during seventies, although inter-state migration ratio (X_4) records steeper declines during both the decades. Kota is another district which had highest values for all migration ratios at all points in the study period. In it the migration level (X_1) shows a marginal increase whereas long-distance migration level (X_4), particularly in its rural areas (X_5) show a high and continuous increase, although all other ratios experience a moderate rate of decline. In its case X_5 increases the rate of increase in the latter decade. Bikaner which like Kota had highest values of all ratios, experienced a continuous increase in its long-distance migration, specially in the rural areas. Bundi which had the highest levels of short-distance as well as long-distance migration in rural areas in 1961 records further continuous increase in them, rate of increase

being higher during sixties than seventies. Jhalawar which had one of the highest values of all migration ratios, records decline in all migration ratios, except an increase in intra-district migration ratio in urban areas (X_9) during sixties. Its inter-state migrant ratio in rural areas (X_5) registered steeper declines. Sirohi is the only district, with one of the highest value of migrant ratios which registered increases in all the migrant ratios, except the urban ones (X_3, X_6, X_9). We find that from among high migration districts, Kota, Bundi, Bikaner and Sirohi record increase in inter-state rural ratio (X_5) whereas Ganganagar, Ajmer and Jhalawar register declines in it.

It would be pertinent to note that Sikar which is among the districts with the lowest values w.r.t. all migrant ratios, suffers further erosion in all of them, except for a small increase in X_8 during the seventies. Similarly Churu, which is another low migration district, records declines in all its migrant ratios. On the other hand, Jhunjhunu like Sikar, has the lowest values w.r.t. all migrant ratios, records increase in all its ratios except urban migrant ratio (X_3) and intra-district urban migrant ratio (X_9).

From among the districts with the lowest migration ratios Sikar and Churu suffer erosion in levels of

migration, long-distance as well as short-distance, in rural as well as urban areas, whereas Jhunjhunu which also has the lowest values of all migration ratios, shows an increase in all of them except in urban migrant ratio (X_3) and intra-district urban migrant ratio (X_9).

Now, a few more observations that can be made about increase in migration levels. Chittaurgarh is the only district with comparatively high migration levels, and which has specially high inter-state migration in rural areas, recording continuously high increases in all migration ratios during the study period. Moreover, the rates of increase in all migration ratios during seventies is higher than the rates of increase in them during the earlier decades. On the other hand, Banswara and Dungarpur, which had very low values for all migration ratios in 1961, record increase in all of them during the study period. The long-distance migration in their urban areas show a continuous increase in both the decades, the rate of increase went up in the latter decade. Jaipur had very high levels of migration in urban areas and low migration level in rural areas and experienced increase in all its rural ratios (X_2, X_5 and X_8) whereas all its urban ratios (X_3, X_6 and X_9) decline. Its migration level (X_1), particularly long-distance migration (X_4)

increases in both the decades and the decadal percentage rate of increase increases in the seventies but its short-distance migration level (X_7) declines at a moderate and increasing rate. Jaisalmer, Jodhpur, Barmer and Bhilwara have considerably low migration levels except high intra-district urban migration ratio (X_8) in the case of the latter two. All of them record increases in most of their migrant ratios. The declining migrant ratios in case of Jaisalmer are inter-state rural (X_5) and intra-district rural (X_8). Jodhpur experiences decline in long-distance as well as short distance migration ratios in urban areas, the rate of decline in case of X_6 is faster during the latter decade, whereas the rate of decline in X_9 s ows down. In Barmer and Bhilwara, the exception to the all round increases in migration is the long-distance migration in urban areas (X_6). Pali continuously improves its migration ratio (X_1) whereas Jalor experiences a moderate decline in it during 1961-71 followed by moderate increase during the next decade. But common thing between them is that their rural migrant ratio (X_2) declines and urban migrant ratio (X_3) improves during the study period 1961-81. Moreover, a dichotomy of increase in all inter-state migration ratios (X_4, X_5 and X_6) and a decline in all intra-district migration

ratios (X_7, X_8 and X_9) is common to them, although intra-district urban ratio (X_9) in Jalore district shows a continuous increase, rather than a decline.

While analysing the all-India figures we noted the urban specificness of decline in migration ratios during 1961-71 and the rural specificness of decline in them during 1971-81. Both of these tendencies were also confirmed by the state level and city-level analyses. The urban-specificness of decline in any particular district means that the urban migrant ratios move more in negative direction or less in positive direction as compared to their rural counterparts. Similarly, observing the rural specificness of decline in migrant ratio would mean that the rural ratios move more in negative and less in positive direction as compared to their urban counterparts.

It would be pertinent to mention the districts which go against these trends, Jaisalmer, Nagour, Jalor, Dungarpur and Kota are the five districts which violate both these trends w.r.t. X_2 and X_3. Apart from these districts Alwar, Bharatpur, Tonk, Pali, Chittaurgarh and Jhalawar violate the urban specificness of decline in migrant ratios during 1961-71 but observe the rural-specificness of decline. The five districts Bikaner, Ajmer, Jodhpur and Bhilwara observe the

urban specificness of decline during 1961-71 but they violate the rural specificness of it during the next decade. We can say the majority of the districts observe the urban specificness of decline during the sixties, and rural specificness of it during the next decade we noted for all India and majority of the state.

Aforesaid trend were violated by Jaisalmer, Banswara and Kota in relation to migrant ratios (X_2 and X_3) and inter-state migrant ratio (X_5 and X_6). The five districts namely Tonk, Ganganagar, Bikaner, Swai-Madhopur and Dungarpur don't follow any of these all India trends with respect to X_5 and X_6. Out of these the first did not follow the urban specificness during the sixties, the next two violated the trend of rural specificness during the seventies and the last two were in line with both the all India trends with respect to migrant ratios X_2 and X_3).

We find that districts of Bharatpur, Chittaurgarh, Jhalawar violate the urban specificness w.r.t. migrant ratios proper (X_2 and X_3) and inter-state migrant ratios (X_5 and X_6). While Ajmer, Jodhpur and Bhilwara resist the rural specificness of decline for migrant ratios (X_2 and X_3) and also for inter-state migrant ratios (X_5 and X_6), Jaipur does so w.r.t. inter-state ratios

only. We can say that the trend of urban specificness of decline during the sixties and that of rural specificness of decline in the next decade exist when we consider long-distance migration separately.

Socio-Economic Setting of Migration Scene in Rajasthan:

Rajasthan is characterised by economic underdevelopment and institutional backwardness. It is one of the states with the lowest level of per capita income and the primary sector provides it the highest share of NSDP. It consistently figures among the states with low share of secondary sector in NSDP, although it has relatively higher share of tertiary sector in NSDP. The share of tertiary sector in NSDP of Rajasthan is as high as in the case of West Bengal and Maharashtra.

In fact, its per capita income (PCI) has been declining over time. The figures for PCI at constant (1970-71) prices are available from 1970-71 onwards only. In each year, from 1971-72 to 1981-82, the PCI has been lower than the 1970-71 figure of rupees 620. In chapter III we notice that the average of 1980-81 and 1981-82 PCI was 3.3 per cent below the average of 1970-71 and 1971-72 PCI (Table III.3). That chapter reveals that it was 21 per cent below the corresponding all India level of PCI (Table III.2). The index number of PCI

(1970-71=100) was 94 in 1981-82. During 1979-80, and 1980-81 it was 86 and 90 respectively. In 1960-61 Rajasthan ranked 6th place among the major 17 states, in respect of PCI. In 1975-76 its rank was 9th. If we consider three years' (1978-79 to 1980-81) average PCI the rank of Rajasthan was 11th among the major 17 states of India.

The unsatisfactory income profile, coupled with the backwardness of the state in terms of other socio-economic indicators we discussed in chapter III, can be related with the decline in the already low levels of all its migrant ratios during the seventies, except a small increase in inter-state rural migrant ratio (X_5). This exception is insignificant because the small increase in seventies is preceded by a many-fold decline during the sixties. The high estimates of net outmigration from its rural and urban areas of Rajasthan is also to be noticed as a supporting point.

Migration in Relation to Agricultural Development in Rajasthan:

In 1981-82 the agriculture and allied activities contributed 51.45 per cent at 1970-71 prices, to total NSDP of Rajasthan. Agriculture and animal husbandry account for about seventy per cent of the state's workforce. In order to understand the migration situation of the state it is necessary to examine

closely the agricultural situation in Rajasthan and also the spatial and temporal variations in it.

A comparative study of area and production of different crops in Rajasthan indirectly brings the fact to the notice that its share in the country's production of main crops is very low, compared to its share in the area under main crops.[2]

The agricultural production in Rajasthan is highly unstable. There exist glaring regional disparities in its agricultural development. There is no secular trend in area and production of crops in its. For example, the index of area under all crops is largely determined by the food grains group. With the triennium 1967-68 to 1969-70 as the base year, the maximum index of area under food grain was 118.48 in the year 1973-74 and the minimum value of it was 95.82 in 1968-69 in the period 1967-68 to 1979-80. There have been fluctuations in all three indices of area, namely food grain, non-foodgrain and all crops.[3]

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2. Acharya, S.S. (1983), "Agricultural Development of Rajasthan - Some Issues", paper presented in the Seminar held at HCM State Institute of Public Administration, Jaipur on March 10-12. P.26

3. Directorate of Economics and Statistics, Rajasthan, Jaipur, 1981, "Agricultural Index Numbers of Rajasthan, 1967-68 to 1979-80", p.14.

The levels of inter-district inequality measured by the coefficient of variation, in the agricultural output per worker and the yield per hectare, were higher than the levels of inter-state inequality in them in 1961, 1971 and 1981 (Tables III.1 and IV.6).

In the Sixth State Five Year Plan, under the head Agricultural and Allied activities, the Command Area Development (CAD) received the highest priority constituting 4.88 per cent of investment, whereas the Drought Prone Area Programme (D.P.A.P.) and D.D.P. (1.95%) was listed next in the priority followed by Rural Development Programme (1.39%). The minor irrigation (1.25%)[4] was put next to them. The idea of C.A.D. invisions a larger concentration of output and modern input-use in a few pockets of high productivity.

The structure of land-holdings is quite unequitable. While marginal and small holdings (0-2 hectare), numbering about half of the total land-holdings, occupy less than one-tenth land, big holdings (10 hectares and above) claim about 11 per cent of the total holdings occupying nearly half of the land.[5]

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4. Draft VI Plan (1980-85) and Annual Plan 1981-82, Rajasthan, p.22.

5. Agricultural Situation in India, August 1985. Directorate of Economics and Statistics, Department of Agriculture and Cooperation, Ministry of Agriculture and Rural Development.

TABLE IV.6

LEVELS OF DISPERSION IN SOCIO-ECONOMIC VARIABLES - 1961, 1971, 1981

Variable/Year	Coefficient of Variation 1961	1971	1981
1. Percentage of male workers in non-household manufacturing (Rural Areas) (X_{19})	58.45	42.10	34.66
2. Percentage of maleworkers in non-household manufacturing (Urban Areas) (X_{20})	35.17	39.69	25.48
3. Percentage of male workforce in non-agricultural occupations (Rural) (X_{21})	56.20	34.46	29.10
4. Percentage of male workforce in non-agricultural occupations(Urban) (X_{22})	8.35	9:12	6.90
5. Average area under agriculture per worker (Hectare) (X_{23})	54.75	38.62	46.45
6. Average agricultural output per worker (Rs) (X_{24})	61.86	77.59	93.36
7. Average agriculture yield (Rs./Hect) (X_{25})	59.03	73.49	86.12
8. Percentage of area under irrigation (X_{26})	94.55	83.74	68.64
9. Road length per 100 sq. kms. (X_{27})	47.41	68.90	33.61
10. Hospitals per lakh population (X_{28})	77.79	25.18	24.56

The underdeveloped agriculture of Rajasthan, marked by unstable production, regional inequalities, lop-sided priorities, and an antiquated frame of land-holdings, has one more speciality to its credit. The minimum guarantee against price fluctuations and a price support for agricultural produce are missing in Rajasthan. A look at the agricultural index numbers of Rajasthan reveals that high production of crops is usually accompanied by fall in prices. One example of the relation among the area sown, agricultural production, agricultural productivity and agricultural prices will help us to understand it. In 1970-71 the area under crops was very large (Index Number 109.77) and the agricultural production was the maximum (Index No.180.97).[6]

In 1970-71, the land productivity of agriculture was also the highest of the period. The index number of it was 161.33. However, the price response to this food-crop year was disappointing. The index number of harvest prices of all crops was 89.21 in 1970-71.

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6. In this section, the observations about the agricultural index numbers are based on an analysis of period from 1960-61 to 1979-80, with the triennium 1967-68 to 1969-70 as the base period. See Appendices III to XI in D.E.S. Rajasthan (1981).

In the previous chapter we noticed that Rajasthan has one of the highest agricultural area per worker (X_2) in 1961, 1971 and 1981. On the other hand, Rajasthan is listed among states with lowest values of the other three indicators namely, output per worker (X_{24}), yield per hectare (X_{25}), and percentage of area under irrigation (X_{26}). Furthermore, we find that the area under agriculture per worker, output per worker and yield per hectare show high rates of increase during the sixties. However, during the next decade the first of these three suffers a decline, the rate of increase goes down drastically in the case of the second and moderately in the case of the third. The percentage of area under irrigation increased much faster during the seventies than during the sixties.

It is generally true for Rajasthan that the sixties were the years of agricultural development due to institutional reforms and greater availability of modern agricultural inputs. But from the mid-seventies there is a stagnation in the agricultural production. While Rabi production attained a plateau, the kharif production was still susceptible to the vagaries of monsoon. The increase in migration level in rural areas (X_2), particularly in the short-distance migration in rural area (X_8) during the sixties and

a decline in them during the seventies seems to have some relation with the above-stated reality of agricultural development during sixties and a stagnation since mid-seventies.

Agriculture and Migration at District Level:

We will utilise table IV.7 and IV.8 to understand the spatial and temporal profile of agricultural development in Rajasthan. Ganganagar, Bundi and Kota are the districts with the highest values of all the four indicators of agricultural development under consideration consistently in 1961, 1971 and 1981. Jhunjhunu, Sikar and Nagour are districts with the lowest values of all the indicators of agricultural development. We observed in the first part of this chapter that these agriculturally most developed districts have the highest levels of migration, short-distance as well as long-distance in rural and urban areas, except that the urban ratios are not equally high in Bundi. We also noted that the above noted three agriculturally most backward districts had the lowest levels of short-distance migration in their rural and urban areas.

The four western Rajasthan districts of Jaisalmer, Jodhpur, Nagour and Barmer have the highest area under agriculture per worker (X_{23}) in 1961, 1971 and 1981.

TABLE IV.7

AVERAGE AGRICULTURAL AREA AND OUTPUT PER WORKER, YIELD PER HECTARE - 1961, 1971, 1981

District	Average area under Agriculture per (X_{23})			Average Agricultural output per worker (Rs) (X_{24})			Average Agricultural Yield (Rs./Hectare (X_{25})			Percentage Variation in Average Agricultural Area per worker (X_{23})		Output per worker (X_{24})		Yield (X_{25})	
	1961	1971	1981	1961	1971	1981	1961	1971	1981	1961-71	1971-81	1961-71	1971-81	1961-71	1971-81
1. Ganganagar	3.06	3.37	2.99	1860.40	3667.22	3329.78	599.55	1087.53	1113.96	10.13	-11.28	99.70	-9.20	81.39	2.43
2. Bikaner	2.24	2.31	2.21	185.06	146.24	219.84	82.79	63.21	99.44	3.12	-4.33	-20.98	50.33	-23.65	57.32
3. Churu	1.81	2.30	2.89	250.44	305.60	506.81	137.68	132.05	175.06	27.07	25.65	22.03	65.84	-3.65	31.97
4. Jhunjhunun	0.90	1.60	1.80	204.14	431.60	646.90	225.56	269.27	359.10	77.78	12.50	111.42	49.88	19.38	33.36
5. Alwar	1.17	1.98	1.53	547.90	1776.22	1659.83	469.67	896.13	1078.56	69.23	-22.73	224.19	-6.55	90.80	20.36
6. Bharatpur	1.30	1.66	1.38	921.71	3080.53	1425.63	707.42	1850.80	7036.11	27.69	-16.87	234.22	53.72	161.63	1.96
7. Swai Madhopur	1.23	1.71	1.42	691.29	1393.65	1184.58	615.54	816.16	832.15	39.02	-16.96	101.60	-15.00	32.99	1.96
8. Jaipur	1.05	1.50	1.28	549.45	1050.77	1008.86	522.08	699.36	787.42	42.86	-14.67	91.24	-3.99	33.96	12.59
9. Sikar	1.03	1.59	1.78	315.21	556.89	629.75	306.67	349.35	353.61	54.37	11.95	76.67	13.08	13.92	1.22
10. Ajmer	1.30	1.64	1.33	482.44	1321.35	521.33	370.07	804.97	389.12	26.15	-18.90	173.89	-60.55	117.52	-51.66
11. Tonk	1.87	2.44	2.14	990.97	1417.98	1076.52	528.27	581.34	503.18	30.48	-12.30	43.09	-24.06	10.05	-13.44
12. Jaisalmer	4.43	2.99	3.95	402.97	221.16	66.89	91.10	73.86	16.92	-32.51	32.11	-45.12	-69.75	-18.92	-77.09
13. Jodhpur	2.51	3.11	2.46	246.72	759.73	264.63	114.48	244.01	107.41	34.63	186.99	-65.17	113.15	113.15	-55.98
14. Nagaur	2.63	2.16	1.87	356.03	668.62	415.80	135.17	211.98	222.21	-17.87	-13.43	87.80	-37.81	56.82	4.83
15. Pali	1.78	2.27	1.53	477.49	1082.10	591.16	267.61	476.60	386.72	27.53	-32.60	126.62	-45.37	78.09	-18.86
16. Barmer	3.33	4.09	3.92	369.19	1115.20	339.77	110.91	40.50	86.65	22.82	-4.16	202.07	-69.53	-63.68	113.95
17. Jalor	1.99	3.20	2.38	472.68	1499.23	727.22	237.72	468.06	305.54	60.80	-25.63	217.18	-51.49	96.90	-34.72
18. Sirohi	1.32	1.64	1.18	1237.09	1022.05	710.35	937.70	624.32	600.65	24.24	-28.05	-17.38	-30.50	-33.42	-3.79
19. Bhilwara	0.70	1.11	0.86	516.37	885.62	703.19	732.93	800.34	815.08	58.57	-22.52	71.51	-20.60	9.20	1.84
20. Udaipur	0.57	0.88	0.81	326.10	1069.26	1288.33	575.54	1213.24	1584.63	54.39	-7.95	227.89	20.47	110.80	30.61
21. Chittaurgarh	0.92	1.18	1.00	651.56	1450.72	950.85	708.18	1233.33	946.82	28.26	-15.25	122.65	-34.46	74.15	-23.23
22. Dungarpur	0.74	1.01	0.96	640.26	814.51	858.68	860.16	810.14	897.37	36.49	-4.95	27.22	5.42	-5.82	10.77
23. Banswara	0.87	1.30	1.13	824.23	1238.78	843.69	945.09	955.19	744.33	49.43	-13.06	50.30	-31.89	1.07	-22.08
24. Bundi	1.71	2.19	1.62	1364.88	4677.88	4637.55	800.37	2139.95	2866.15	28.07	-26.03	242.73	-0.86	167.37	33.94
25. Kota	1.64	2.40	1.95	1061.57	1706.67	1586.70	646.56	710.82	812.87	46.34	-18.75	60.77	-7.03	9.94	14.36
26 Jhalawar	1.31	1.82	1.25	938.52	1335.39	916.48	718.54	733.13	735.11	38.93	-31.32	42.28	-31.37	2.03	0.27
RAJASTHAN	1.47	2.02	1.73	563.88	1046.75	1186.62	384.00	518.00	684.00	37.42	-14.36	85.63	13.36	34.90	32.05

Notes: 1. The 1961 figures for average area under agriculture per worker, agricultural output per worker and average agricultural yield (Rs./Hectare) are averages for 1960-61, 1961-62 and 1962-63. The 1971 figures are averages for 1970-71 and 1972-73. The 1981 figures are averages for 1980-82 AND 1981-82.

2. The estimates of area, output and yield are based on 15 principal crops.

3. The agricultural output was calculated at the average 1970-73 prices.

4. Figures for Rajasthan are based on 19 crops and for that reason are not strictly comparable to the figures for districts.

Source: 1. Bhalla, G.S, and Alagh, Y.K., 1979, Performance of Indian Agriculture: District-wise Study.

2. Census of India, 1961, Rajasthan, Vol. XIV, Part II B(i) General Economic Tables, Table B-III

3. Census of India, 1971, Rajasthan, Series-18, Part II B(ii) General Economic Tables, Table B-III

4. Census of India, 1981, Rajasthan, Series-18, Part III A&B, Vol.I(i) General Economic Tables, Table B-III

5. Directorate of Economics and Statistics, Rajasthan, Statistical Abstract of Rajasthan for years 1962, 1963, 1971, 1973, 1982.

TABLE IV.8

PERCENTAGE OF AREA UNDER IRRIGATION AND PERCENTAGE DECADAL RATES OF CHANGE - 1961, 1971, 1981

Districts	Percentage of Area under irrigation			Percentage Change	
	1961	1971	1981	1961-71	1971-81
1. Ganganagar	27.52	40.51	43.82	47.20	8.17
2. Bikaner	0.00	0.21	2.54	210.00	100.00
3. Churu	0.02	0.02	0.04	0.00	100.00
4. Jhunjhunun	2.44	2.88	14.08	18.03	388.89
5. Alwar	13.33	18.34	40.91	37.58	123.06
6. Bharatpur	20.02	25.17	31.22	25.72	24.04
7. Swai Madhopur	16.23	18.52	26.72	14.11	44.28
8. Jaipur	21.69	24.99	44.43	15.21	77.79
9. Sikar	5.98	5.76	19.14	-3.68	332.29
10. Ajmer	28.43	20.28	28.19	-28.67	39.00
11. Tonk	14.08	15.28	20.39	8.52	33.44
12. Jaisalmer	0.04	0.22	0.04	450.00	-81.82
13. Jodhpur	2.12	2.18	4.03	2.83	84.86
14. Nagaur	1.87	1.62	4.70	-13.37	190.12
15. Pali	20.58	18.07	28.34	-12.20	56.83
16. Barmer	0.68	0.81	1.49	19.12	83.95
17. Jalor	6.72	5.04	24.75	-25.00	391.07
18. Sirohi	24.49	24.74	37.00	1.02	49.56
19. Bhilwara	45.18	40.87	44.71	-9.54	9.40
20. Udaipur	46.65	33.56	36.80	-28.06	9.65
21. Chittaurgarh	28.15	26.90	31.13	-4.44	15.72
22. Dungarpur	5.33	10.22	10.92	91.74	6.85
23. Banswara	2.95	5.58	11.00	89.15	97.13
24. Bundi	18.55	39.53	52.01	113.10	31.57
25. Kota	6.71	23.02	29.01	243.07	26.02
26. Jhalawar	8.60	10.99	12.87	27.79	17.29
RAJASTHAN	13.36	14.05	19.54	5.17	39.08

Note: The percentage of area under irrigation refers to net irrigated area as percentage of net cropped area.

Source:
1. Directorate of Economics and Statistics, India, Ministry of Agriculture, 1970, Agricultural Statistics of India.
2. Directorate of Economics and Statistics, Government of Rajasthan, 1973, Statistical Abstract of Rajasthan, 1973.
3. Directorate of Economics and Statistics, Government of Rajasthan, 1982, Statistical Abstract of Rajasthan, 1982.

But these districts have the lowest output per worker (X_{24}) the lowest yield per hectare (X_{25}) and the lowest percentage of area under irrigation (X_{26}). Except Nagour, the above-mentioned western districts are experiencing further decline or stagnation in their labour productivity, land productivity and percentage of area under irrigation.

The four southern Rajasthan districts of Bhilwara, Udaipur, Chittaurgarh and Dungarpur have the highest values of output per worker (X_{24}), yield per hectare (X_{25}) and high percentage of area under irrigation (X_{26}) consistently. But the agricultural area per worker is the lowest in them at all points in the study period. These districts record increase in all the indicators of agricultural development. The increase in migration levels is taking place in the above-mentioned two groups of western districts and southern districts. The fact of increase in migration levels of agriculturally backward and stagnating districts, speak of the possible importance of area under agriculture (X_{23}) determining the migration levels.

Ganganagar where continuous agricultural development has been taking place but the area under agriculture per worker (X_{23}) declined during 1961-81, experiences decline in migration levels, particularly the inter-

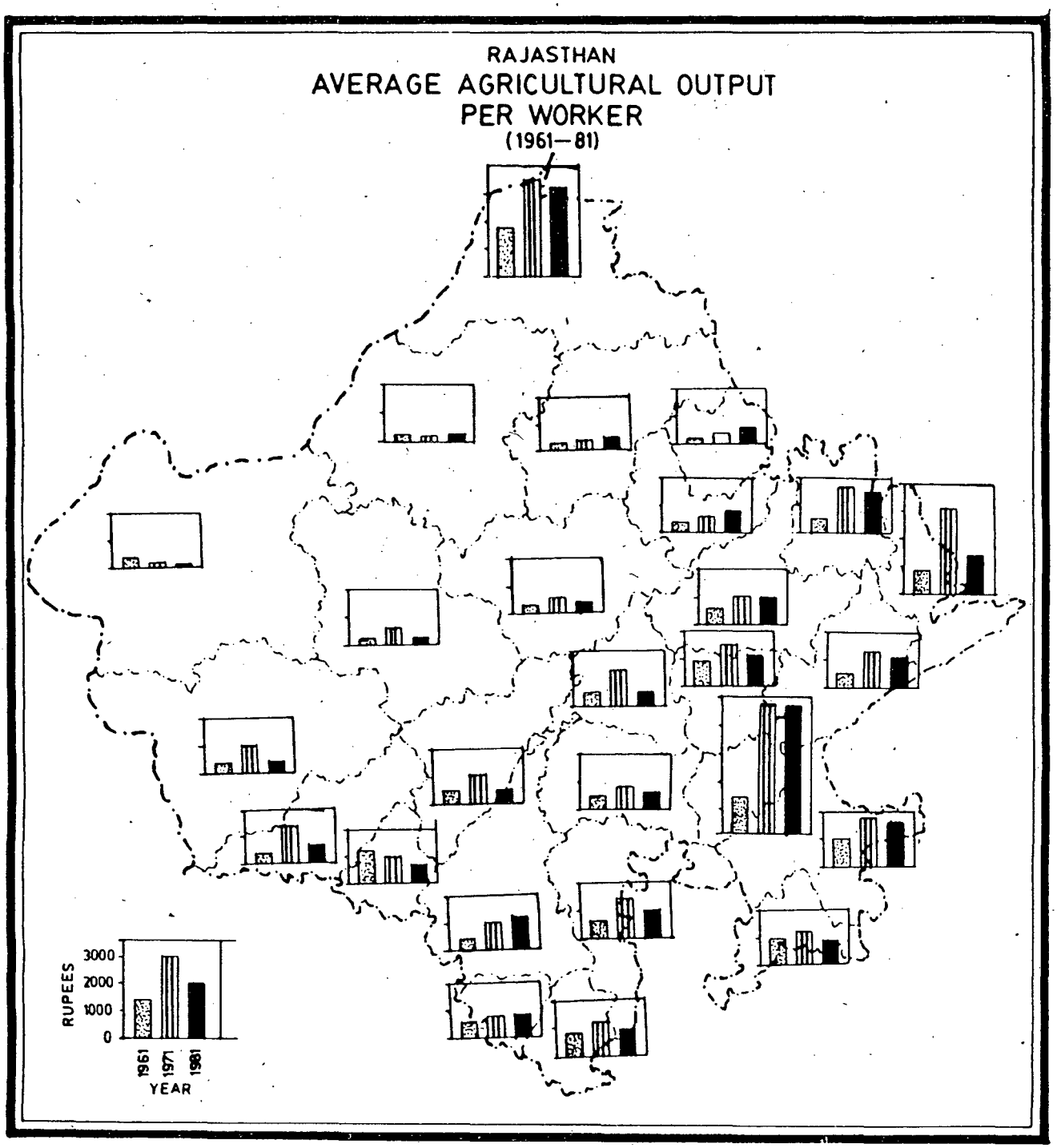
RAJASTHAN
AVERAGE AGRICULTURAL OUTPUT
PER WORKER
(1961–81)
RUPEES
3000
2000
1000
0
1961
1971
1981
YEAR

Fig. 4·6

state migration levels. Kota is also agriculturally developed and makes further strides in this respect over time. Unlike Ganganagar, the agricultural area per worker (X_{23}) increases in it. We find that long-distance migration level in rural areas (X_5) of Kota increases, whereas it (X_5) declined in Ganganagar.

While this relationship of area under agriculture per worker (X_{23}) and the migration levels, is similar to the one we observed at state-level for India; the generalisation that the land-pressure is the most important factor deciding the migration levels, cannot be made with equal confidence for the districts of Rajasthan. Most of the districts of Rajasthan are agriculturally backward and have very high area available for, and coming under agriculture. We find that during the sixties due to large-scale area expansion in agriculture, the inter-district disparity in this respect went down almost one-third. High area under agriculture per worker became almost a common factor. On the other hand worker productivity and land productivity increased differentially over space and the distribution became more skewed. The figures 4.6 and 4.7 highlight this growing inequality over space and time. At the district level in Rajasthan the deciding factor became the output per worker (X_{24}),

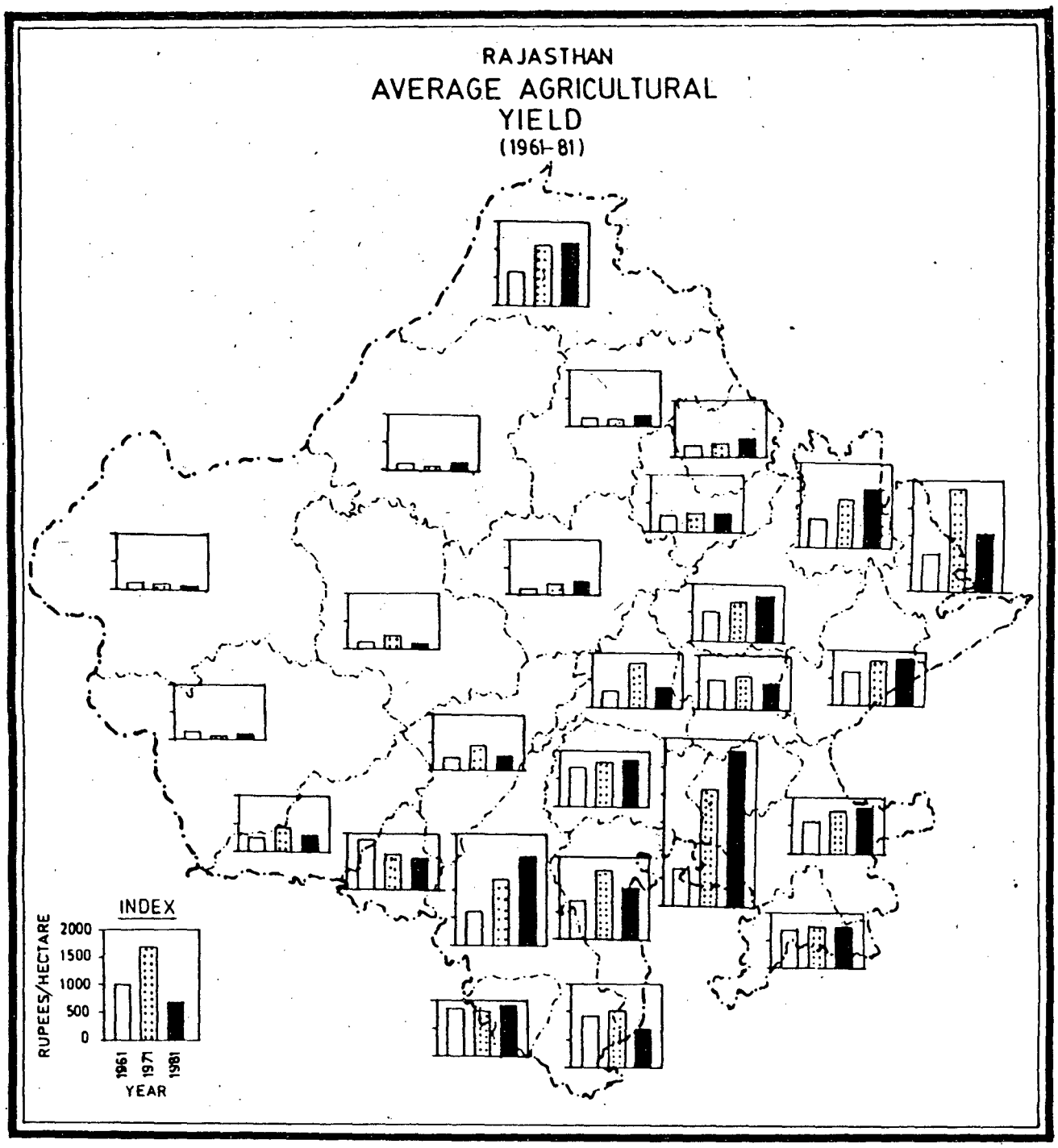
RAJASTHAN
AVERAGE AGRICULTURAL
YIELD
(1961-81)
INDEX
RUPEES/HECTARE
2000
1500
1000
500
0
1961
1971
1981
YEAR

Fig. 4·7

rather than the agriculture area per worker (X_{23}). It is slightly different from the all India results where land-pressure is the most important deciding factor. It needs to be studied in detail as to in which districts and in what time horizons the land-pressure will become more important and relevant factor of migration.

The correlation results also support these observations. The correlation results (Appendix IV.1) show that the agricultural output per worker (X_{24}) and percentage of area under irrigation (X_{26}) are becoming more important factors related with migration. In 1961 the worker productivity (X_{24}) was the only indicator of agricultural development which had significantly positive relation with the migration levels. Next to it in importance was the agricultural area per worker (X_{23}), although its relation with migration levels was not significant even at 10 per cent level of significance. In 1971 and 1981 also the worker productivity (X_{24}) maintains the high and significant correlation with migration levels. The coefficient of correlation of agricultural area per worker (X_{23}) with migration levels, declines continuously from 1961 to 1971 and from 1971 to 1981. On the other hand the coefficient of correlation of the percentage of area under irrigation (X_{26}) with migration levels in 1971 and 1981 were higher

than the 1961 counterpart. It seems that on the whole with the expansion of irrigation and increase in output in sixties and seventies, the area under agriculture per worker (X_{23}) has become the less relevant and less significant indicator of agricultural development in Rajasthan as far as migration is concerned. It is quite understandable in a situation of erratic rainfall, uncertain and unstable agricultural production in the state.

Occupational Structure and Migration:

In the absence of the data on sectoral shares of income at district level, we will consider the percentage of male workforce engaged in non-agricultural occupations and the percentage of male workforce engaged in non-household manufacturing. We find from table IV.6 that the inter-district differences as regards these two indicators have narrowed down.

Non-Agriculture Workforce and Migration:

Table IV.9 gives the structure of non-agricultural workforce in rural and urban areas separately for all the districts of Rajasthan. Agriculturally backward districts have low proportion of their urban workforce in non-agricultural occupations (X_{22}). However, the picture regarding rural areas is not that clear-cut.

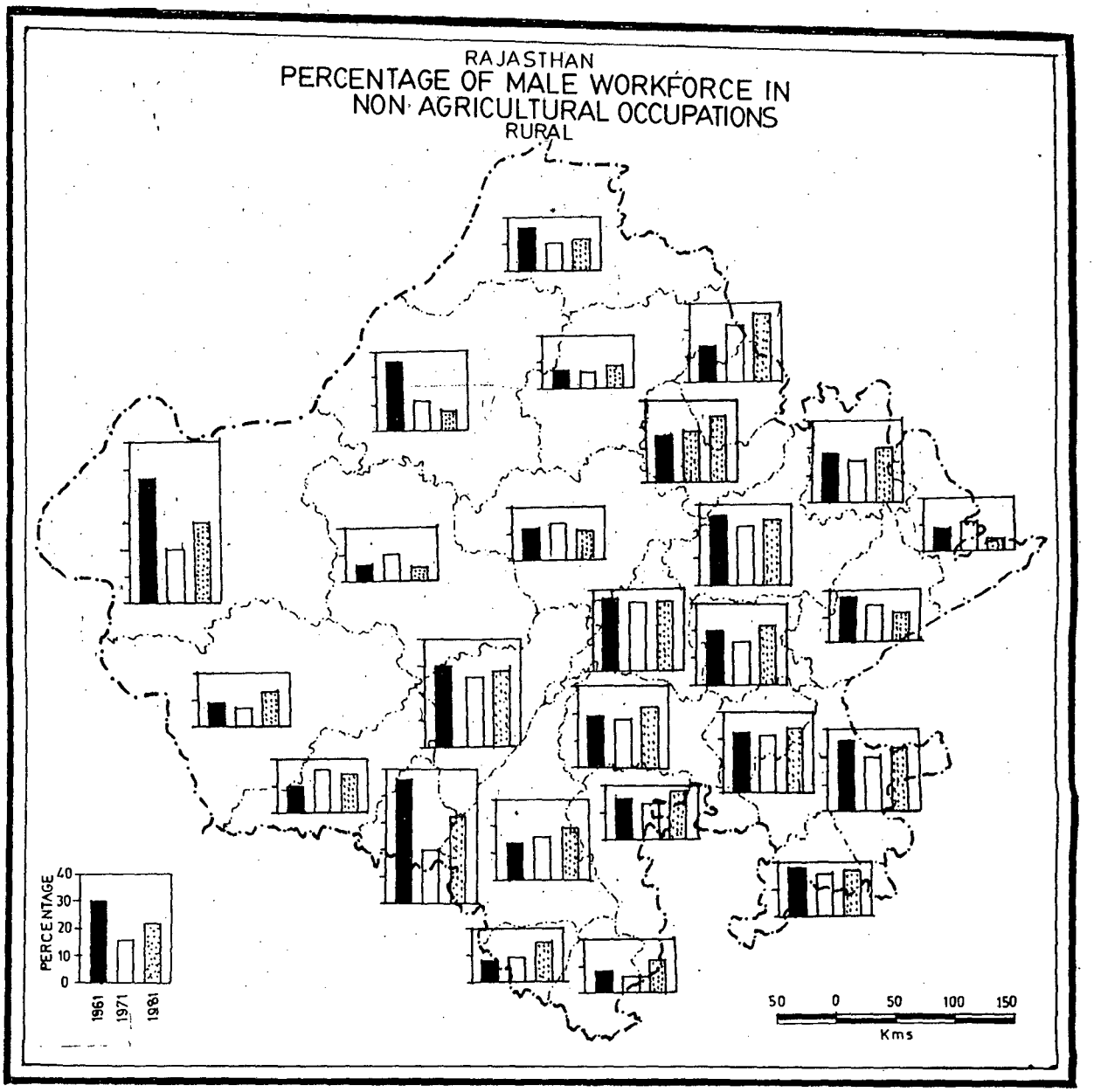
RAJASTHAN
PERCENTAGE OF MALE WORKFORCE IN
NON AGRICULTURAL OCCUPATIONS
RURAL
PERCENTAGE
40
30
20
10
0
1961
1971
1981
50 0 50 100 150
Kms

Fig. 4·8

TABLE IV.9

PERCENTAGE OF MALE WORK FORCE IN THE NON-AGRICULTURAL OCCUPATIONS AND PERCENTAGE DECADAL CHANGE THEREIN - 1961-1971-1981

District	Rural (X_{21})			Urban (X_{22})			Percentage Change Rural (X_{21})		Percentage Change Urban (X_{22})	
	1961	1971	1981	1961	1971	1981	1961-71	1971-81	1961-71	1971-81
1. Ganganagar	14.98	10.33	13.76	88.14	85.24	83.29	-31.04	33.20	-3.29	-2.29
2. Bikaner	26.58	11.83	19.38	78.33	90.93	92.21	-55.49	63.82	16.09	1.41
3. Churu	7.06	6.86	9.82	73.56	65.53	74.19	-2.83	43.15	-10.92	13.22
4. Jhunjhunun	14.37	22.04	26.13	78.01	76.58	81.81	53.38	18.56	-1.83	6.83
5. Alwar	18.31	17.62	20.79	92.69	91.51	91.59	-3.77	17.99	-2.35	1.19
6. Bharatpur	9.95	10.60	14.96	80.01	76.99	79.77	6.53	41.13	-3.77	3.61
7. Swai Madhopur	18.07	15.85	18.00	86.27	82.11	85.28	-12.29	13.56	-4.82	3.86
8. Jaipur	26.78	21.60	26.32	96.17	93.90	93.75	-19.34	21.85	-2.38	-0.16
9. Sikar	17.66	19.52	23.53	82.86	94.98	87.69	10.53	20.54	14.63	-7.68
10. Ajmer	27.45	23.20	28.22	96.30	95.54	92.68	-15.48	21.64	-0.79	-2.99
11. Tonk	19.76	16.27	22.86	82.50	77.97	82.94	-17.62	40.50	-4.59	6.35
12. Jaisalmer	46.73	19.46	30.77	94.15	88.39	89.52	-58.36	58.12	-6.12	1.28
13. Jodhpur	5.49	10.71	14.21	94.15	98.93	93.34	95.08	32.68	5.08	-5.65
14. Nagaur	11.75	13.28	18.51	85.23	83.37	83.07	13.02	39.38	-2.18	-0.36
15. Pali	30.62	27.86	28.18	78.23	88.31	77.82	-9.01	1.15	12.89	-11.88
16. Barmer	8.65	8.47	13.64	89.38	87.59	86.59	-2.08	61.64	-2.00	-1.14
17. Jalor	11.63	16.86	15.87	70.96	73.45	76.03	44.97	-5.87	3.51	3.51
18. Sirohi	47.02	20.20	32.69	90.38	87.19	92.56	-57.04	61.83	-3.53	6.16
19. Bhilwara	19.21	18.92	22.90	83.13	77.24	78.17	-1.51	21.04	-7.09	1.20
20. Udaipur	15.69	18.36	20.00	92.87	91.32	90.75	4.27	22.25	-1.67	-0.62
21. Chittaurgarh	15.73	15.03	18.86	84.42	80.84	86.40	-4.45	25.48	-4.24	6.88
22. Dungarpur	8.02	8.80	15.55	92.84	87.15	89.00	9.73	76.70	-5.31	2.12
23. Banswara	7.59	7.17	13.20	94.85	91.86	94.05	-5.53	81.10	-3.15	2.38
24. Bundi	22.39	22.35	23.69	89.13	88.22	84.68	-0.18	6.00	-1.02	-4.01
25. Kota	26.94	20.62	23.69	95.94	94.08	93.48	-23.46	16.20	-1.94	-0.70
26. Jhalawar	18.81	14.85	16.52	88.14	84.28	84.28	-21.05	11.25	-4.23	-0.15

Source: 1. Census of India, 1961, Rajasthan, Vol. XIX, Part B(i), General Economic Tables, Table B-III.

2. Census of India, 1971, Rajasthan, Series 18, Part B(i), General Economic Tables, Table B-III.

3. Census of India, 1981, Rajasthan, Series 18, Part B(i), General Economic Tables, Table B-III.

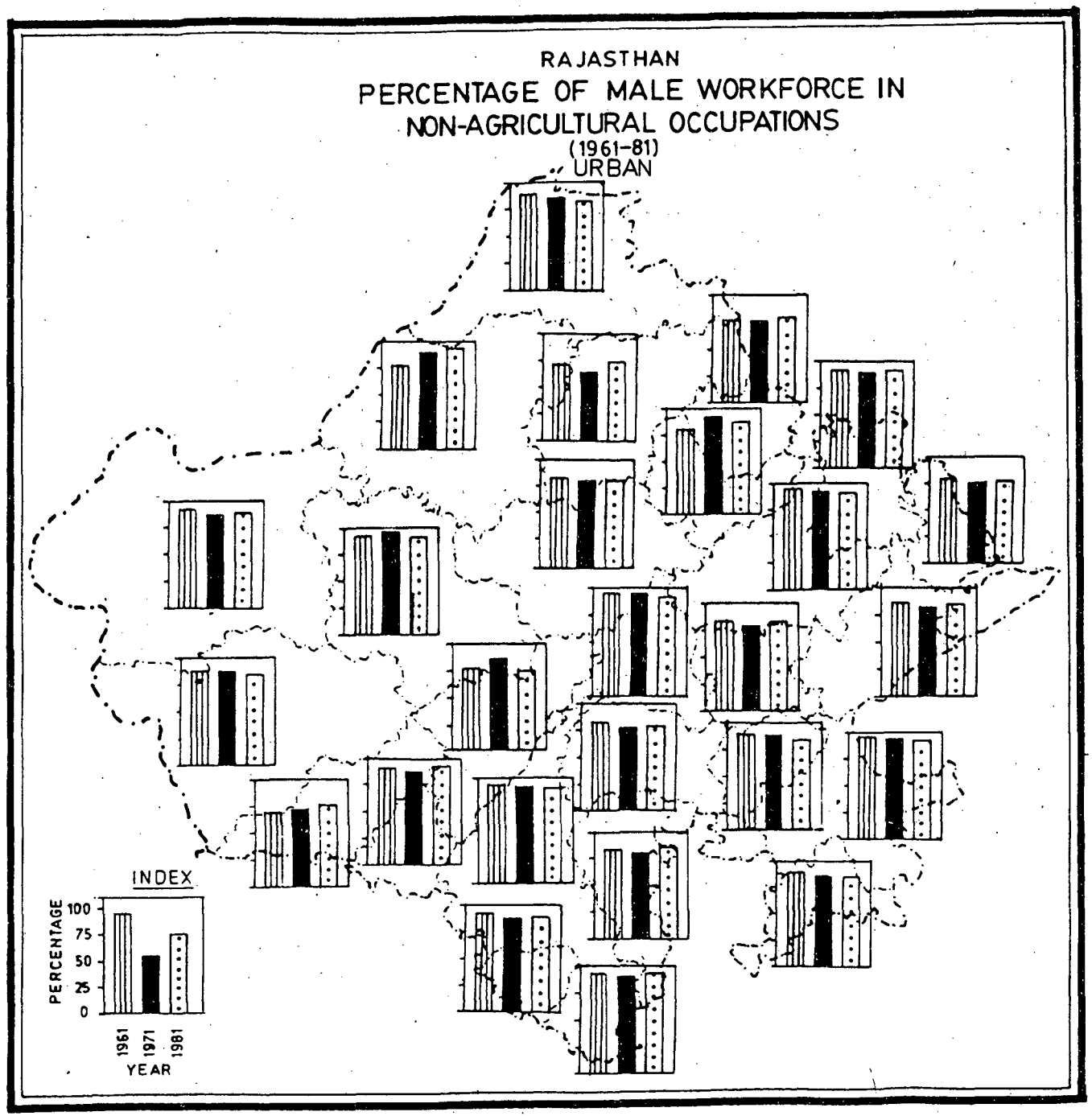
RAJASTHAN
PERCENTAGE OF MALE WORKFORCE IN
NON-AGRICULTURAL OCCUPATIONS
(1961-81)
URBAN
INDEX
PERCENTAGE
100
75
50
25
0
1961
1971
1981
YEAR

Fig. 4.9

We find that the districts with the lowest proportion of their rural workforce engaged in non-agricultural occupations belong to two extremes. The agriculturally most developed districts like Ganganagar, Dungarpur and Bharatpur as also the backward ones like Churu, Barmer and Jodhpur fall in the same bracket. It can be observed that the districts with the highest proportion of rural workforce in non-agricultural occupations (X_{21}) are mostly backward agriculturally with the exception of Kota.

The high proportion of workforce in non-agricultural occupations cannot, perhaps, be related with agricultural development. It seems that quite often that agricultural backwardness rather than agricultural development is associated with it. The continuous decline in X_{21} and stagnation in X_{22} of the agriculturally developed districts bear testimony to the point. The correlation results (Appendix IV.1) also support their observation. There is a weak positive relation of X_{21} and X_{22} with the indicators of agricultural development.

The general trend of decline in the proportion of non-agricultural workforce, in rural as well as urban areas, during the sixties in most of the districts of Rajasthan indicates that non-agricultural sector during

the decade stagnated as compared to the agricultural sector. But the fact of decline in the percentage of non-agricultural workforce in urban areas (X_{22}) in many districts during the seventies points that the stagnation of sixties did not change to any better situation. The look at table IV.9 and the correlation results in Appendix IV.1 reveals that in the districts of Rajasthan these two indicators are not at all positively related with the migration levels.

Workforce in Non-Household Manufacturing and Migration in Rajasthan:

Table IV.10 gives the proportion of non-household-ing manufacturing in the workforce of various districts of Rajasthan in the rural and urban areas separately. Pali, Ganganagar, Swai-Madhopur, Ajmer, Bundi and Udaipur have the highest percentage of its workforce in rural as well as urban areas, engaged in non-household manufacturing. Incidentally, all these are agriculturally developed districts. On the other hand, Jaisalmer, Churu and Barmer which figure consistently in 1961, 1971 and 1981, among the agriculturally most backward districts, have the lowest percentage of male workforce in non-household manufacturing.

Of all the indicators of agricultural development, the worker productivity, i.e., agricultural output per worker (X_{24}) seems to be most strongly correlated with

TABLE IV.10

PERCENTAGE OF MALE WORKFORCE IN NON-HOUSEHOLD MANUFACTURING AND PERCENTAGE DECADAL VARIATION - 1961-1971-1981

District	RURAL (X_{19})			URBAN (X_{20})			PERCENTAGE CHANGE RURAL (X_{19})		PERCENTAGE CHANGE (X_{20})	
	1961	1971	1981	1961	1971	1981	1961-71	1971-81	1961-71	1971-81
1. Ganganagar	1.48	1.31	2.46	16.28	16.73	18.96	-11.79	87.79	2.76	13.33
2. Bikaner	0.61	0.75	2.51	10.50	10.08	13.30	22.95	234.67	-4.00	31.94
3. Churu	0.16	0.45	1.14	7.76	8.59	11.25	181.25	153.53	10.70	30.97
4. Jhunjhunun	0.77	1.11	3.69	1.11	9.04	14.47	44.16	232.43	-13.33	60.07
5. Alwar	0.73	1.18	3.32	12.98	11.05	20.25	61.64	181.36	-14.87	83.26
6. Bharatpur	0.41	0.78	2.03	11.99	13.59	18.27	90.24	160.26	13.34	34.44
7. Swai Madhopur	1.47	1.15	2.56	14.67	14.26	17.15	-21.77	122.61	-2.79	20.27
8. Jaipur	0.38	1.58	4.50	17.45	18.93	25.45	315.79	184.81	8.48	34.44
9. Sikar	0.75	1.49	3.15	10.29	11.63	14.31	98.67	111.41	13.02	23.04
10. Ajmer	1.30	1.73	4.28	14.07	17.31	22.87	33.08	147.40	23.03	32.12
11. Tonk	0.47	1.11	2.82	13.40	12.99	21.15	136.17	154.05	-3.06	62.82
12. Jaisalmer	0.04	0.56	2.03	8.76	3.26	9.69	300.00	262.50	-62.79	197.24
13. Jodhpur	0.44	0.71	1.61	11.73	14.62	18.59	61.36	126.76	24.64	27.15
14. Nagaur	0.42	0.93	2.51	13.91	18.20	21.01	121.43	169.89	30.84	15.44
15. Pali	1.49	2.59	3.64	20.57	25.73	23.93	73.83	40.54	25.09	-7.00
16. Barmer	0.19	0.61	1.07	7.48	10.75	23.87	221.05	75.41	43.72	122.05
17. Jalor	0.54	1.19	1.82	4.56	7.36	9.30	120.37	52.94	61.40	26.36
18. Sirohi	0.72	2.02	3.82	8.89	7.52	13.30	180.56	89.11	12.41	76.86
19. Bhilwara	0.72	1.19	2.93	16.71	21.13	21.56	65.28	146.22	26.45	2.04
20. Udaipur	0.88	1.37	3.01	11.39	15.17	17.70	55.68	119.71	33.19	16.68
21. Chittaurgarh	0.66	1.42	2.80	11.81	12.27	15.05	115.15	97.18	3.87	22.66
22. Dungarpur	0.53	0.68	1.72	10.23	10.56	14.99	28.30	152.94	3.23	41.95
23. Banswara	0.26	0.58	1.48	6.84	8.72	15.28	123.08	155.17	27.49	75.23
24. Bundi	1.10	1.28	3.09	23.45	22.67	21.78	1.82	175.89	-3.33	-3.93
25. Kota	1.24	1.71	4.06	11.67	23.64	23.52	37.90	137.43	102.57	-0.51
26. Jhalawar	0.69	1.45	2.62	12.11	16.80	17.40	110.14	80.69	38.73	3.57
RAJASTHAN	0.75	1.23	2.81	13.28	15.71	19.84	64.00	128.46	18.30	26.29

Source: Same of Table IV.A.

the workforce in non-household manufacturing occupations. From Table IV.10 we find that the districts with high proportion of workforce in non-household manufacturing have the higher levels of male migration in them. On the other hand the districts with low proportion of workforce in non-household manufacturing have relatively lower levels of male migration in them. For the districts of Rajasthan the proportion of male workforce in non-household manufacturing has a positive correlation with most of the migrant-ratios. The percentage of rural male workforce in non-household manufacturing (X_{19}) has significantly positive coefficient of correlation with migration ratios. However, its urban counterparts (X_{20}) has positive but not significant relation with migration levels. These results conform to what we found in our state-level analysis for India. However, the lower value of coefficients of correlation of X_{19} and X_{20} with the inter-state migrant-ratio (X_4) as compared to the intra-district migrant ratio (X_7), is a relationship contrary to what we observed at the state-level for India.

Indicators of Road Development and Health in relation to Migration in Rajasthan:

A look at tables IV.11 and IV.12 reveals no significant pattern of relationship of these indicators

TABLE IV.11

ROAD LENGTH PER HUNDRED SQUARE KILOMETERS - 1961, 1971, 1981

District	Road Length (In Kilometres) (X_{27})			Percentage Variation	
	1961	1971	1981	1961-71	1971-81
1. Ganganagar	5.71	7.09	9.86	24.17	39.07
2. Bikaner	3.44	4.08	5.28	18.60	29.11
3. Churu	4.63	5.13	8.23	24.21	60.43
4. Jhunjhunun	8.11	9.08	12.80	11.96	40.97
5. Alwar	15.64	15.68	19.09	0.26	21.68
6. Bharatpur	16.93	18.33	18.52	8.27	1.04
7. Swai Madhopur	8.24	8.85	10.13	7.40	14.46
8. Jaipur	9.55	10.09	14.54	5.65	44.10
9. Sikar	9.36	9.45	13.14	0.96	39.05
10. Ajmer	17.75	19.44	19.96	9.52	2.67
11. Tonk	7.70	8.98	10.68	16.62	18.93
12. Jaisalmer	1.80	2.02	5.15	12.22	154.95
13. Jodhpur	7.58	8.71	17.53	14.91	101.26
14. Nagaur	9.15	9.82	12.11	7.32	23.32
15. Pali	9.99	13.57	15.48	35.84	14.00
16. Barmer	33.84	4.77	9.57	24.22	100.63
17. Jalor	6.39	7.26	11.86	13.62	63.36
18. Sirohi	13.43	14.13	17.15	5.21	21.37
19. Bhilwara	59.47	10.88	13.93	14.09	28.03
20. Udaipur	17.91	18.60	19.44	3.05	4.52
21. Chittaurgarh	18.20	19.33	12.45	135.73	-35.59
22. Dungarpur	18.99	18.69	25.01	-1.58	33.81
23. Banswara	14.31	15.39	14.73	7.55	-4.29
24. Bundi	13.53	13.98	16.36	3.33	17.02
25. Kota	11.72	13.84	11.75	18.09	-15.10
26. Jhalawar	18.06	12.20	12.33	-32.45	1.07

Note: 1961 figures refer to 1962-63 whereas those for 1971 refer to 1970-71 and 1981 figures refer to 1980-81

Source: Directorate of Economics and Statistics, Government of Rajasthan, Statistical Abstract of Rajasthan for years 1963, 1973, 1982.

TABLE IV.12

HOSPITALS PER LAKH POPULATION - 1961, 1971, 1981

	Districts	(X28) 1961	1971	1981	Percentage Variation 1961-71	1971-81
1.	Ganganagar	1.06	1.17	0.98	10.38	-16.24
2.	Bikaner	2.03	2.45	1.48	20.69	-39.59
3.	Churu	1.67	1.26	1.58	-24.55	25.40
4.	Jhunjhunun	1.40	1.46	1.67	4.29	14.38
5.	Alwar	2.02	1.70	1.49	-15.84	-12.35
6.	Bharatpur	1.39	1.43	0.96	2.88	-32.87
7.	Swai Madhopur	1.17	1.40	1.30	19.66	-7.14
8.	Jaipur	1.32	1.60	1.39	21.21	-13.13
9.	Sikar	1.22	1.12	1.45	-8.20	29.46
10.	Ajmer	2.42	1.71	1.91	-29.34	11.70
11.	Tonk	0.60	1.49	1.73	148.33	16.11
12.	Jaisalmer	1.10	2.99	2.58	171.82	-13.71
13.	Jodhpur	2.37	1.70	1.17	-28.27	-31.18
14.	Nagaur	1.39	1.16	1.30	-16.55	12.07
15.	Pali	1.49	1.73	1.92	16.11	10.98
16.	Barmer	0.62	1.49	1.06	140.32	-28.86
17.	Jalor	1.28	1.44	1.21	12.50	-15.97
18.	Sirohi	2.84	2.12	1.89	-25.35	-10.85
19.	Bhilwara	1.97	1.93	1.67	-2.03	-13.47
20.	Udaipur	1.43	1.53	1.26	6.99	-17.65
21.	Chittaurgarh	3.20	1.65	1.05	-48.44	-36.36
22.	Dungarpur	8.49	1.32	1.12	-84.45	-15.15
23.	Banswara	1.05	2.02	1.58	92.38	-21.78
24.	Bundi	4.33	1.85	1.63	-60.89	-11.89
25.	Kota	2.13	2.10	1.55	-1.41	-26.19
26.	Jhalawar	2.65	1.55	1.82	-41.51	17.42

Note: While calculating the number of hospitals, a hospital was assigned weight =1 and a dispensary weight = 1/3.

Source: Directorate of Economics and Statistics, Government of Rajasthan, Statistical Abstract of Rajasthan for years 1961, 1971, 1981.

with the levels of migration. The results in Appendix IV.1 show that there is a weak negative correlation of these two indicators with migration levels, except for a weak positive correlation with migration in urban areas (X_3), especially with the short-distance migration levels in urban areas (X_9). It seems that these factors in themselves are not any determining factors as far as migration is concerned.

CHAPTER V

CONCLUSION

The study identifies certain important trends and permits generalisations which have major policy implications.

Contrary to the general notion that with development, the level of interaction increases, the percentage of lifetime migrants of long-distance as well as short-distance in India's rural as well as urban male population, declined throughout the sixties and the seventies. This is corroborated by several other findings. The growth of male migrants was less than the growth of male population. The growth of rural to rural and urban to rural streams of male migrants was less than the growth of rural male population. Similarly, the growth of rural to urban and urban to urban streams of male migrants was less than the growth of urban male population. Furthermore, if we consider the percentage of current and inter-censal migrants in these streams separately, we get confirmation of the declining tendency of male migration.

For all types of male migrants in India, migrant ratio in rural areas is less than the same in urban areas. The difference is greater for backward states and lower for the developed states. The inter-state

migrant ratio is lower than the intra-district migrant ratio in the male population of India. Similar is the case with its rural male population. This is true for almost all the states.

However, in the urban areas the long-distance migration levels were higher than the short-distance migration levels in 1961 and 1971. But in 1981, the urban areas also recorded levels of long-distance migration which were lower than the short-distance migration levels. The higher percentage of long-distance than short-distance migrants in the urban areas is observed in the developed and the developing states. The share of long-distance as well as short-distance migrants in the total internal migrants residing in rural areas of India and most of the states, has been declining. It implies that inter-district movements have become more usual.

The rate of decline in the levels of migration in the male population of India has been more drastic in urban areas during the sixties and in rural areas during the seventies. This rural-urban dichotomy holds even when we consider long-distance and short-distance migrations separately. During 1971-81, the decline in long-distance male migration levels in rural as well as urban areas, has been greater than during the earlier decade.

There is a clear-cut difference in the migration situation of developed and backward states. The developed states generally have the highest migrant ratios and particularly high inter-state migrant ratios in rural as well as urban areas, whereas the backward states record the lowest values of these ratios. States in the latter group experience steeper rates of decline in their already low levels of male migration than developed states. In backward states the declines in male migration levels have been steeper in rural areas, during 1961-71 as well as 1971-81. This means they violate the urban specificness of decline in male migration levels which is observed for all India and for the developed states during 1961-71. In the relatively backward states the share of rural areas in the total internal male migrants declined during the study period, whereas for a few developed states it has increased. The backward states have recorded distinctly high levels of rural as well as urban out-migration, zero or negative growth of rural to rural outmigration and negative net inter-state migration and a negative decadal rate of inter-state migration in their internal male population.

Our study of the class I cities for 1961 and 1971 and of all metropolises for 1961, 1971 and 1981, after carrying out necessary adjustments for the changes in the

concepts of 'urban area' and 'migrant', discovered a few important trends.

There is a great disparity among the cities regarding the levels of migration as well as the levels of long-distance migration in the male population. In most of the cities, these levels are lower than the corresponding figures for the all India urban male migration in 1961 as well as 1971. Moreover, the levels of migration and long-distance migration in them in 1971 were lower than the corresponding levels in 1961. The cities with the highest and lowest levels of migration have considerable rank-consistency for 1961 and 1971. One significant fact about the spatial pattern of migration in cities is that those with the highest levels w.r.t. both the indicators are either in the developed states or they are the industrial centres of the otherwise backward states.

The majority of cities experienced declines in the migrant ratio as well as in the inter-state migrant ratio. A few, which registered increase is both of these ratios, had consistently higher levels of migration in 1961 and 1971.

The majority of cities experienced growth of male population higher than the growth of urban male population of India as a whole. However, for all except six cities, the growth of male migrants was lower than the growth of

the male population in them. In fact, in one-fifth of the total cities, the growth of male-migrants and inter-state male migrants was negative. Most of these cities, with a falling number of migrants belong to the relatively backward states.

Migration level in almost all metropolises declined in the sixties as well as the seventies. For most of the metropolitan cities the decline in migration levels in the sixties was steeper than the decline during the seventies. In 1981, the inter-state ratio in almost all metropolises was lower than the corresponding figure of 1961. Most of the metropolises during the sixties experienced growth rate of male migrants and male population lower than the corresponding figures for urban areas of India. However, during the seventies the opposite was true. The metropolises with high levels of migration and high growth of male population belong to the relatively advanced states whereas those with low and fast declining levels of male migration and experiencing low growth of male migrants in them belong to a relatively backward state.

The states with the lowest levels of per capita income (P.C.I.) the highest shares of the primary sector and the lowest shares of the secondary sector in their net state domestic product (N.S.D.P.), observe

the lowest levels of male migration and exhibit steeper declines in them, have high rural as well as urban male outmigration and observe negative net inter-state decadal migration. On the other hand, the states having high levels of P.C.I., the lowest share of primary sector and the highest share of secondary and tertiary sectors experience the diametrically opposite migration scene consistently in 1961, 1971 and 1981. However, it must be mentioned that the states with the highest levels of P.C.I. also have a continuous decline in migration ratios. The states with low P.C.I., bigger primary sector and smaller secondary sector but proportionately high tertiary sector exhibit a dichotomy of having the lowest migration levels in rural areas and higher migration levels in urban areas.

The correlation results elaborately confirm these relationships. Migration ratio (X_1) has positive relation with P.C.I. The migration level in urban areas (X_3) has higher positive relation with P.C.I. than does the migration level in rural areas (X_2). At higher level of P.C.I., the level of long-distance migration in male population is generally high and opposite is the case with short-distance migration. The levels of inter-state migration in rural areas (X_5) are more positively related with P.C.I. than are the levels of inter-state migration in urban areas (X_6).

The share of the primary sector in N.S.D.P. has high negative correlation with male migration in total male population and in rural as well as urban male population. The share of the tertiary sector has higher positive correlation with migration levels in male population than does the share of the secondary sector. However, if we consider rural and urban areas separately the reverse would be the case. Correlation of the share of the secondary sector is NSDP with long-distance migration, especially in urban areas and the correlation of the share of the tertiary sector in N.S.D.P., especially in rural areas are high and significant.

The increase in the share of the secondary sector and decline in the share of the primary sector in N.S.D.P. Of the most backward states during the sixties are associated with higher rural than urban outmigration and the lack of urban specificity of male migration levels during the decade. Similarly the states which did not exhibit the urban specificity of decline in long-distance migration levels during the sixties are associated with decline in the share of their primary sector in N.S.D.P. The lack of urban specificity is true for the states with high shares of primary sector. During 1971-81, the rural specificity of decline in male migration is associated with the general trend of decline in the share of the primary sector, and improvement in the share of the secondary sector in the N.S.D.P.

Disparities in the levels of agricultural development have increased significantly throughout the study period. There is high inequality in the distribution of land. The concentration of agricultural development in a few pockets, the unegalitarian patterns of ownership, cultivation and tenancy and the most dismal record of land reforms are some of the salient features of the political economy of agriculture in India.

The agriculturally less developed states have net negative migration in 1971 as well as 1981 and a negative rate of migrants for 1971-81. Declines in migration levels are more prominent in the states which report lower area under agriculture per worker, irrespective of the fact whether they are agriculturally developed or backward. Those with highest area under agriculture per worker continuously increase long-distance migration levels especially in the rural areas. The states with the lowest area under agriculture per worker have negative net inter-state migration and a negative decadal rate thereof. The decline in area per worker during 1971-81 is significantly related with the rural-specificity of decline in migration levels during the decade. Correlation results also tell that land-pressure is the most important factor deciding migration levels especially in rural areas.

The percentage of male workforce in non-house-hold manufacturing is positively related with the male migration levels. The relation is stronger in rural areas than in

urban areas and is all the more valid for long-distance migration whereas short-distance migration is negatively related with the non-household manufacturing occupations. It can generally be said that the states with highest unemployment rates have lower percentage of long-distance migrants as compared with those recording lowest male unemployment rates. The highest increases in unemployment rates are almost certainly associated with declines in migration, specially long-distance migration levels. With any decline in unemployment rates, local response in the form of intra-district migration is more likely than any all India effect through long-distance migration.

Road development is associated with increase in, or stability at higher levels of migration, especially long-distance migration. Availability of roads and hospitals can be included in the set of variables of socio-economic development the combination of which influences the migration levels.

For all the states the per capita expenditure on education in rural areas was significantly lower than the corresponding figure for the state as a whole. High per capita expenditure on education and high increase in it are associated with high and stable or increasing levels of migration.

The growth of population during the present century has been higher for Rajasthan than for all India. During

the last two decades, the growth of the urban population in Rajasthan has been significantly higher than the growth of population in it. This is true for most of its districts also. This urban growth was significantly higher than the corresponding all India growth rates which in turn were highest in the century. The urban ratio in Rajasthan, and most of its districts as well, has experienced accelerated increase. The 1951-61 urban growth seems to be related positively with the level of urbanisation. However, higher growth of urban population in the post-1961 period is taking place in the districts hitherto less urbanised.

In Rajasthan, all the male migration ratios, except the inter-state migration ratio in rural areas (X_5), were significantly below the corresponding all India levels in 1961, 1971 and 1981. It recorded high rural as well as urban out-migration both in 1971 and 1981, although it had a positive decadal rate of net migrants. As opposed to the all India trend of continuous decline in all migration ratios, Rajasthan had continuous decline in its migration ratios in urban areas only. All other ratios, particularly those of rural areas registered an overall increase during the study period, except that long-distance migration level in rural areas show a marginal decline. The long-distance migration levels suffered decline during the study period in Rajasthan's total male population as also the male population in rural and urban areas separately.

Migration levels in rural areas, specially the long-distance migration levels vary much more across the districts of Rajasthan or compared to the variation of their urban counterparts and also as compared to the variability across states in this regard.

The majority of districts of Rajasthan observe the urban specificness of decline during the sixties, and rural specificness of it during the next decade which we noted for all India and majority of these states. These tendencies are also perceptible when we consider the long-distance migration alone.

The very low and declining levels of P.C.I. of Rajasthan, very high share of primary sector in its NSDP and its backwardness in terms of other socio-economic indicators have been accompanied by the decline in the already low levels of migration in and high estimates of net outmigration from, its rural and urban areas.

The share of Rajasthan in the country's production of main crops is very low as compared to its share in the area under main crops. The agricultural production is highly unstable. There is no secular trend in area and production of crops in Rajasthan. Glaring regional disparities exist in its agricultural production. The levels of inter-district inequality for Rajasthan in

the agricultural output per worker and the yield per hectare were higher than the levels of inter-state inequality for India in these indicators in 1961, 1971 and 1981.

The lop-sidedness of the policy of larger concentration of output and modern input use in a few pockets of high productivity is all the more accentuated in the drought-prone and famine-hit conditions of the geographically vast Rajasthan. According to the latest agricultural census, the structure of land-holdings in Rajasthan is highly unequitable. The fact that high production of crops is usually accompanied by fall in prices means that even the minimum guarantee against price fluctuations and a minimum of price support for agricultural produce ~~in it~~ are missing in Rajasthan.

In Rajasthan, the sixties are associated with agricultural development. Since the mid-seventies there is a stagnation in its agricultural production. This fact seems to have some relation with the increase in migration levels in rural areas (X_2) and particularly in the short-distance migration levels in rural areas (X_8) during the sixties and a decline in them during the seventies.

The agriculturally most developed districts have the highest levels, and the agriculturally most backward

ones record the lowest levels of male migration, short-distance as well as long-distance, both in rural and urban areas. Increase in migration levels is seen for the districts experiencing expansion in the area under agriculture per worker, whether they belong to the group of agriculturally developed and progressing or to the group of agriculturally backward and stagnating districts. On the other hand, the decline in the area under agriculture per worker for individual districts is accompanied by decline in migration levels. This relationship is similar to the one noted in the state-level analysis for India. However, most of the districts of Rajasthan are backward, cover a large geographical area and have a very high area available for, and coming under agriculture. In Rajasthan, due to large-scale area expansion during the sixties, the inter-district disparity in agricultural area per worker has gone down and its distribution has become more uniform. On the other hand, labour productivity and productivity in agriculture increased differentially over space and their distributions became more skewed.

The stable high and significantly positive correlation of the agricultural output per worker with male migration levels in 1961, 1971 and 1981 and the decline in the coefficient of correlation of area under agriculture with migration levels from 1961 to 1971 and from 1971 to 1981 can be taken to mean that the opportunities of

productive employment in agriculture or a lack of these is, in general, the most important factor effecting mobility in the districts of Rajasthan whereas the land-pressure is not as oppressive and constraining a factor as it would seem to be in the state-level analysis for India as a whole. It should be seen in relation to the special situation of erratic rainfall, uncertain and unstable agricultural production in the peculiar geo-physical setting of Rajasthan. Nevertheless, the generalisation that, ceteris paribus, higher the area under agriculture per worker, higher will be the male migration levels and lower the decline in these migration levels is too well established by our overall analysis to be rejected merely by the correlation results of district-level analysis for Rajasthan.

It can be observed that the agriculturally backward districts, generally, have low proportion of their urban male workforce and high proportion of rural male workforce in non-agricultural occupations, although the position is not very clear-cut specially w.r.t. rural male work-force. Statistically, both these indicators have a weak positive relation with the indicators of agricultural development. The general trend of decline in the proportion of non-agricultural workforce, in rural as well as urban areas, during the sixties in most of the districts of Rajasthan indicates that non-agricultural sector during

this decade stagnated more as compared to the agricultural sector. But the fact of decline in the percentage of non-agricultural workforce in urban areas in many districts during the seventies also points that the stagnation of sixties did not show any significant improvement. These two indicators of non-agricultural workforce are not at all positively related with the migration levels.

In Rajasthan, the employment in non-household manufacturing occupations as percentage of rural male workforce and as percentage of urban male workforce, is more strongly positively related with worker productivity in agriculture than any other indicator of agricultural development. These indicators have positive relation with the levels of migration in population. These results are in conformity with the state-level analysis for India. Availability of roads and hospitals does not seem to have any positive or significant relation with the migration levels in the districts of Rajasthan.

APPENDIX — 3·1

Inter-Temporal 113 X 113 correlation matrix of the indicators of migration, urbanisation and Economic Development (State-Level Analysis)

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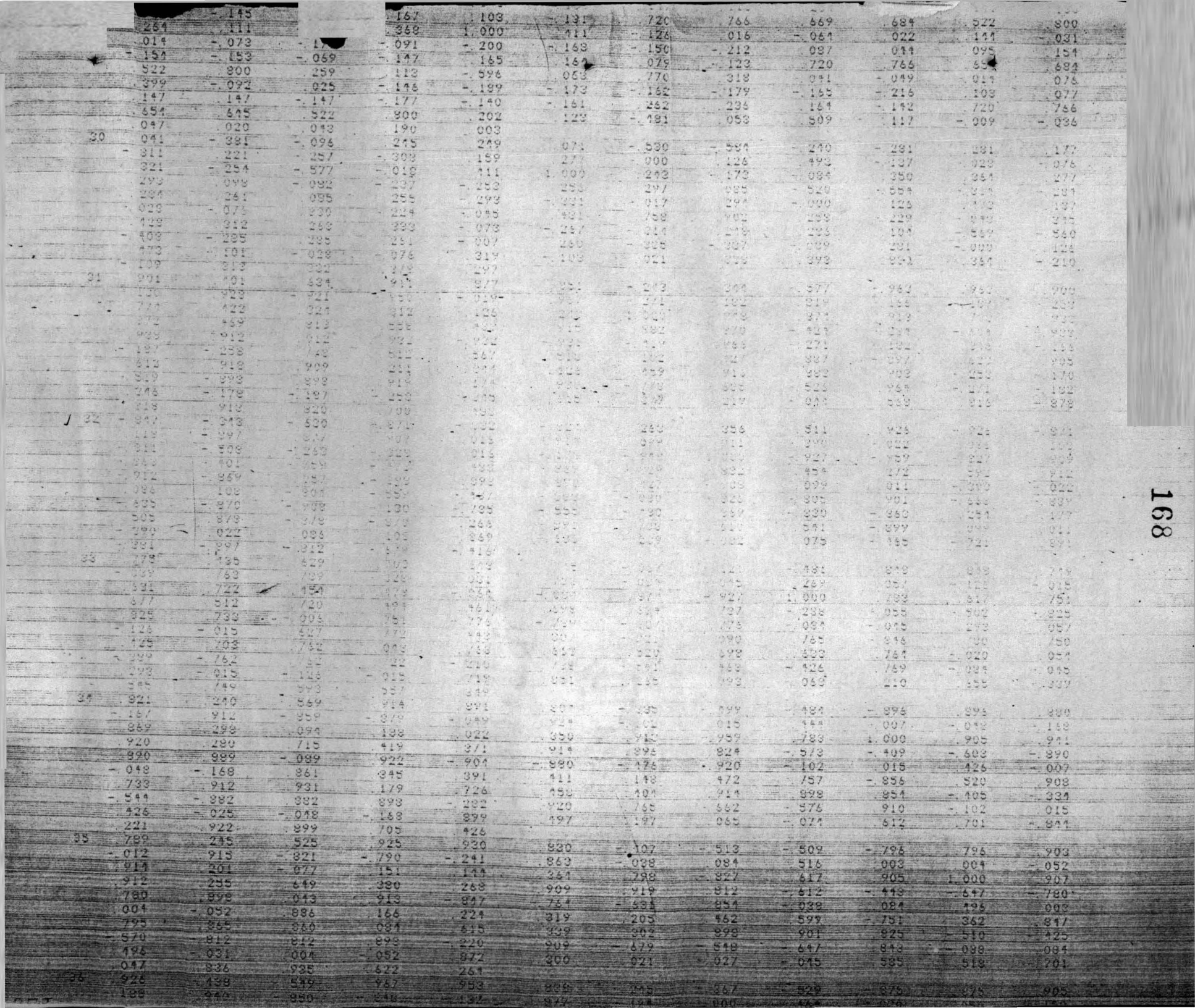
** CORRELATION MATRIX **

(2)

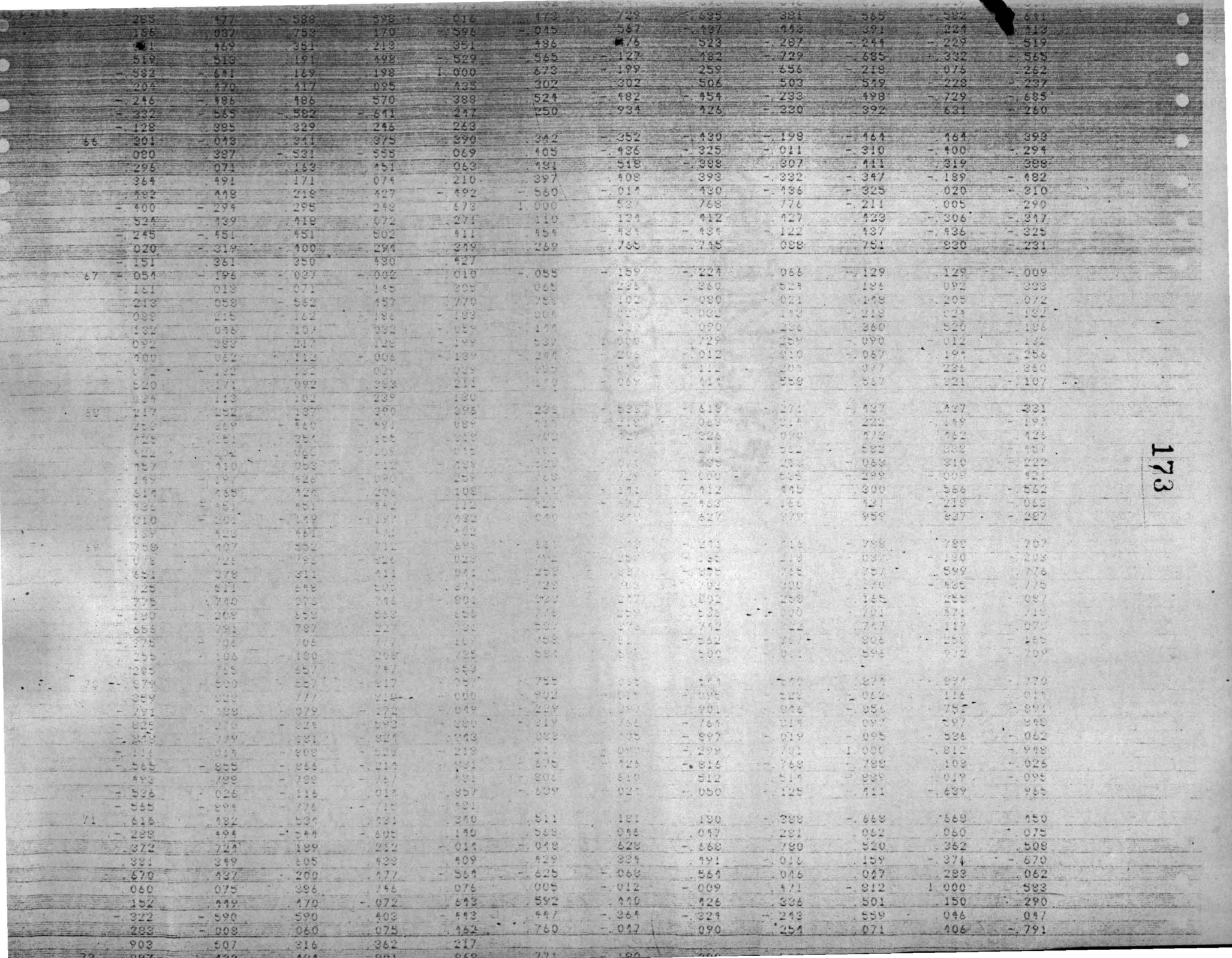
	.391	-.291	.891	.984	-.170	.934	-.795	-.654	-.714	.931	-.275	-.211
	.314	.251	-.235	.304	.819	.450	.250	.027	.197	.540	.616	-.189
	.137	.861	.892	.609	.325							
15	-.791	-.222	-.666	-.890	-.861	-.902	.465	.508	.710	.920	-.920	-.938
	-.097	-.935	1.000	-.967	.263	-.872	.393	.325	-.177	.326	.398	.382
	-.703	-.452	-.307	-.263	.184	-.257	-.921	.877	-.789	-.859	-.821	-.850
	-.786	-.601	-.624	-.307	-.364	-.883	-.854	-.889	.639	.460	.762	.916
	-.916	-.950	-.232	-.939	.967	.923	.566	-.863	.393	.325	.185	.326
	.398	.382	-.670	-.440	-.588	-.531	-.071	-.460	-.796	.777	-.544	.784
	-.579	-.833	-.788	-.088	-.661	-.392	-.316	-.876	-.840	-.901	.512	.399
	.720	.886	-.886	-.941	-.004	-.933	.790	.655	.692	-.859	.393	.325
	-.185	.368	.398	.382	-.726	-.565	-.439	-.251	.138	-.607	-.731	.712
	-.204	-.769	-.759	-.573	-.341							
16	-.778	-.191	-.608	-.860	-.829	-.824	.430	.504	.667	.974	-.974	-.389
	.012	-.900	.967	1.000	.009	-.902	.404	.292	-.212	.308	.358	.313
	-.687	-.454	-.347	-.316	.167	-.308	-.950	.907	-.828	-.879	-.790	-.848
	-.777	-.564	-.643	-.319	-.347	-.857	-.827	-.819	.583	.427	.685	.969
	-.969	-.900	-.114	-.904	.918	.966	.364	-.900	.404	.292	-.223	.308
	.358	.343	-.669	-.478	-.598	-.555	-.145	-.491	-.826	.810	-.605	-.796
	-.546	-.828	-.809	-.099	-.682	-.405	-.338	-.853	-.819	.846	.452	.375
	.860	.938	-.938	-.890	.106	-.900	.905	.724	.511	-.896	.404	.292
	-.223	.339	.358	.343	-.742	-.614	-.432	-.293	.002	-.642	-.750	.796
	-.322	-.811	-.738	-.555	-.881							
17	-.172	-.155	.309	.251	.254	[illegible]	.190	[illegible]	.388	-.069	.069	-.327
	-.421	-.273	.263	.009	1.000	.019	.001	[illegible]	.094	.105	.196	.192
	-.169	-.063	.103	.102	.102	.155	.019	.010	.081	-.049	-.241	-.132
	-.154	-.209	-.031	.000	.119	-.293	.281	-.292	.266	.101	.409	-.069
	.069	-.330	-.467	-.279	.216	-.029	.250	.011	-.001	.161	.106	.105
	.196	.192	-.105	.090	-.016	.069	.305	[illegible]	.028	-.000	.140	-.076
	-.189	-.139	-.028	.025	-.028	.010	-.085	-.219	-.205	-.340	.200	.148
	.332	-.066	.066	.204	.300	-.282	[illegible]	[illegible]	.791	.015	.001	.161
	.106	.157	.196	.192	[illegible]	.192	[illegible]	.179	[illegible]	.075	.005	.204
	.405	.042	.193	-.199	[illegible]							
18	.924	.410	.560	.959	[illegible]	.938	.248	[illegible]	.551	-.938	.938	.908
	-.199	.946	-.372	-.902	.019	.000	.240	-.116	.294	-.157	-.067	-.240
	.838	.271	.223	.157	-.131	.277	.967	.914	.788	.921	.860	.977
	.939	.299	.856	.607	.291	[illegible]	-.937	.180	[illegible]	.251	-.801	.910
	.910	.916	.880	.959	-.921	-.901	.182	[illegible]	.240	.116	.110	.157
	-.017	-.240	.949	[illegible]	[illegible]	[illegible]	.155	[illegible]	.791	.902	.560	.916
	.382	.966	.967	.254	.858	.127	.227	.916	.942	.899	-.291	-.207
	[illegible]	-.999	.929	.927	.277	[illegible]	.255	.812	.571	.999	-.240	.116
	.413	-.165	.067	.240	.891	.455	.237	.095	.008	.575	.714	.891
	.271	.954	.908	.707	.470							
19	-.130	.229	.292	-.261	.260	-.277	.480	.427	.279	.860	-.860	-.284
	-.090	-.275	.292	.404	.101	-.271	.300	.911	.688	.914	.776	.860
	.176	.029	-.824	.051	.720	-.000	.271	.099	-.084	.102	-.038	-.124
	.067	-.225	-.104	.284	.291	[illegible]	.170	-.227	.222	.284	.150	.405
	-.405	-.298	-.072	-.298	.251	.251	.002	.299	1.000	.931	.659	.914
	.776	.880	.188	.078	-.729	-.437	-.298	.219	.299	-.019	.016	-.001
	.160	.179	-.093	.093	-.172	-.080	.162	.297	-.280	-.322	.107	.442
	.299	.427	-.427	-.388	-.144	-.016	.190	[illegible]	.112	-.249	1.000	.931
	.658	.878	.776	.880	.119	-.020	.687	[illegible]	.157	-.399	.272	-.009
	.107	-.044	.078	.219	.075							
20	-.080	.180	-.384	.170	-.152	.288	.313	.271	.224	.256	-.256	-.225
	-.194	-.211	.325	.292	.161	-.114	.931	1.000	.776	.916	.255	.896
	.332	-.003	-.657	-.082	.761	.108	.182	.011	-.045	.015	.094	.000
	.084	-.831	-.077	.069	-.400	-.105	.158	-.022	.169	.163	.056	.298
	-.298	-.241	-.179	.221	.229	-.248	.059	-.117	.931	1.000	.745	.916
	.855	.896	.246	.030	-.685	-.325	.240	-.060	-.165	-.095	.047	.106
	.327	-.046	.070	.155	-.125	-.010	-.278	.189	-.161	.302	.293	.296
	.156	.307	.307	-.257	-.207	-.233	.474	.470	.146	-.139	.931	1.000
	.745	.846	.855	.896	.284	-.006	-.667	-.356	.264	-.223	-.197	-.149
	.153	.104	.073	.223	.161							
21	.327	.213	-.117	.338	.246	.188	-.008	-.077	-.203	.254	.253	.277
	-.207	.308	-.177	-.212	.094	.396	.688	.776	1.000	.576	.598	.626
	.670	.054	-.585	.014	.669	.493	.319	-.390	.269	.444	.516	.464
	.514	.023	.282	.261	-.247	.328	.356	.158	-.161	-.069	-.336	-.190
	.190	.297	.016	.301	-.250	-.211	-.229	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]



	[illegible]	.225	.113	.104	-.031	.277	[illegible]	.907	.751	.751	.797	1.000
	.992	.224	.841	.614	.369	.970	.958	.869	-.476	-.277	-.615	-.849
	.849	.911	-.099	.947	-.917	-.866	-.562	.973	-.121	.000	.174	-.030
	.050	-.150	.926	.288	.413	.388	.072	.426	.776	-.891	.508	.963
	.773	.987	.978	.253	.935	.621	.108	.972	.264	.898	-.296	-.198
	-.515	-.830	.830	.929	-.246	.947	-.694	-.572	-.619	.970	-.124	.000
	.474	-.053	.050	-.150	.947	.412	.199	.066	-.063	.567	.707	-.869
	.189	.969	.964	.779	.514							
37	.872	.390	.443	.947	.950	.784	-.279	-.410	-.500	-.797	.797	.871
	-.170	.904	-.786	-.777	-.154	.939	-.067	.084	.514	.031	.109	-.098
	.949	.144	.045	.066	.014	.293	.872	-.863	.677	.920	.912	.982
	1.000	.140	.783	.573	.273	.950	.956	.818	-.513	-.830	-.613	-.767
	.767	.982	-.078	.914	-.871	-.303	-.597	.935	-.067	.034	.519	.031
	.109	-.098	.964	.193	.361	.364	.088	.122	.725	-.925	.391	.939
	.812	.973	.979	.327	.762	.549	.324	.961	.961	.850	-.330	.253
	-.509	-.759	.759	.905	-.209	.919	-.621	-.490	-.680	.929	-.067	.084
	.519	.000	.109	-.098	.963	.324	.146	-.018	-.129	.553	.655	-.913
	.078	.953	.982	.304	.510							
38	.270	.050	.428	.303	.282	.521	-.261	-.199	-.539	-.162	.162	.500
	.577	.427	-.601	-.364	-.209	.299	.225	-.321	.023	-.295	-.615	-.101
	.108	.541	.381	-.190	-.073	.098	.469	-.401	.512	.280	.255	.224
	-.140	1.000	.125	-.015	.159	.282	.257	.139	-.229	.143	.437	-.134
	.197	.505	.729	.711	.409	-.391	.236	.293	-.225	.331	.054	-.295
	.115	-.181	.062	.514	.949	.391	.215	.202	.511	-.270	-.319	.105
	.060	.209	.151	-.044	.207	.091	.157	.264	.211	.437	-.234	-.157
	-.357	-.376	.376	.455	.666	.402	-.345	-.230	-.321	.295	-.225	.391
	.054	-.247	-.315	.181	.175	.509	.164	.250	.205	.195	.152	-.191
	.133	.156	.981	.177	.921							
39	.952	.735	.611	.812	.282	.752	.212	.094	-.229	-.719	.719	.742
	-.165	.786	-.624	-.643	-.031	.956	-.106	-.077	.292	-.013	.124	-.117
	.873	.282	.294	.155	.171	-.092	.813	-.759	.720	.715	.649	.841
	.782	.125	.000	.906	.647	.321	.780	.607	.034	.244	-.291	-.717
	.217	.718	-.200	.776	.279	.355	.379	.555	-.104	-.077	.314	.013
	.124	-.117	.707	.402	.351	.171	-.162	.050	.618	-.324	.605	.317
	.479	.914	.309	.082	.932	.907	.717	.829	.796	.927	.165	.252
	-.097	-.393	.698	.735	-.421	.774	-.585	-.521	-.390	.365	-.104	-.077
	.214	.011	.124	.117	.781	.407	.105	.022	-.047	.216	.568	-.804
	.346	.808	.757	.664	[illegible]							
40	.803	.991	.422	.550	[illegible]	.507	.542	.416	.046	-.433	.433	.162
	-.213	.500	-.307	-.319	-.068	.207	.081	.949	.281	.177	.312	.072
	.502	.114	.215	.091	-.091	-.237	.558	.479	.494	.419	.380	.614
	.573	-.016	.906	1.000	.563	.563	.582	.561	.372	.560	.045	-.387
	.387	.430	.332	.488	-.270	-.347	-.234	.110	.084	.069	.309	.177
	.342	.072	-.552	.339	.213	.074	-.186	-.109	.505	-.598	.438	.598
	.377	.598	.594	.030	.892	.964	.664	.577	.558	.591	.499	.565
	.222	-.358	.358	.461	-.315	.391	-.283	-.255	-.175	.627	.084	.089
	.309	.217	.342	.072	.550	.220	.029	-.050	-.029	-.028	.437	-.597
	.255	.601	.545	.407	.384							
41	.559	.420	.893	.429	.376	.553	.196	.129	.203	-.454	.454	.431
	-.128	.453	-.364	-.347	-.114	.391	-.291	-.400	-.247	.225	-.230	-.282
	.131	.290	.368	.377	-.200	-.253	.433	-.433	.461	.371	.258	.369
	.273	.149	.647	.568	1.000	.441	.366	.642	.219	.332	.217	-.493
	.493	.390	-.353	.450	-.337	-.334	-.159	.396	-.291	-.400	-.241	-.225
	-.230	-.232	.146	.387	-.351	.210	-.183	-.045	.371	-.380	.409	.305
	.130	.334	.340	-.460	.680	.612	.977	.455	.393	.618	.197	.228
	.247	-.521	.521	.418	-.339	.451	-.501	-.485	-.199	.413	-.291	-.400
	-.241	-.185	-.230	-.282	.175	.355	.254	.190	-.049	.089	.385	-.307
	.232	.258	.304	.019	-.056							
42	.907	.358	.616	.998	.989	.905	-.346	-.456	-.554	-.379	.879	.957
	-.087	.979	-.883	-.857	-.233	.964	-.279	-.185	.328	-.222	-.136	-.321
	.840	.183	.189	.097	-.168	.256	.916	-.869	.698	.914	.909	.970
	.950	.282	.821	.563	.441	1.000	.992	.934	-.528	-.329	-.618	-.859
	.959	.962	-.007	.985	-.922	-.848	-.635	.958	-.279	.185	.331	-.222
	-.136	-.321	.836	.216	.486	.397	-.004	.408	.728	-.819	.429	.906
	.688	.966	.925	.213	.809	.561	.463	.999	.990	.958	-.406	-.310
	-.536	-.862	.862	.976	-.192	.988	-.769	-.634	-.688	.957	-.279	-.185
	.334	-.232	-.136	-.821	.856	.335	.258	.041	-.179	.582	.665	-.769
	.083	.901	.947	.671	.419							
43	.870	.312	.541	.991	.996	.871	-.385	-.504	-.546	-.840	.840	.914
	-.051	.962	-.854	-.827	-.231	.947	-.270	-.158	.356	-.218	.121	-.308
	.851	.100	.152	.066	-.150	.297	.882	-.929	.634	.896	.919	.958

(?)

	[illegible]	[illegible]	[illegible]	[illegible]	.178	.103	.027	.436	.703	-.766	.334	.884
	.712	.961	.184	.257	.758	.505	.392	.990	.996	.921	-.418	-.366
	-.537	-.828	.82[illegible]	.969	-.145	.976	-.741	-.608	-.673	.940	-.270	-.158
	.362	-.227	-.121	-.309	.857	.251	.216	.016	-.197	.603	.636	-.725
	-.006	.892	.959	.675	.418							
44	.891	.412	.816	.936	.909	.983	-.266	-.335	-.519	-.840	.840	.953
	.054	.957	-.889	-.819	-.392	.865	-.327	-.323	.158	-.293	-.300	-.365
	.692	.357	.296	.232	-.212	.085	.870	-.832	.737	.824	.812	.869
	.818	.439	.807	.561	.642	.934	.899	1.000	-.416	-.204	-.548	-.883
	.833	.947	.084	.956	-.876	-.778	-.686	.858	-.327	-.323	.167	-.293
	-.300	-.365	.676	.381	.523	.393	.082	.276	.702	-.764	.491	.795
	.558	.852	.807	.008	.817	.594	.650	.931	.893	.996	-.325	-.210
	-.459	-.831	.831	.949	-.125	.954	-.753	-.599	-.749	.858	-.327	-.323
	.167	-.315	-.300	-.365	.706	.455	.324	.059	-.229	.448	.649	-.666
	.125	.753	.813	.537	.296							
45	-.189	.454	-.068	-.535	-.544	-.427	.908	.894	.720	.470	-.478	-.550
	-.102	-.573	.639	.539	.299	-.447	.322	.169	-.161	.238	.351	.372
	-.490	-.084	.079	.135	.087	-.520	-.424	.454	-.238	-.573	-.612	-.475
	-.513	-.228	.024	.372	.219	-.528	-.557	-.416	1.000	.964	.805	.494
	-.494	-.597	-.308	-.567	.361	.539	.513	-.436	.322	-.169	-.119	.333
	.251	.372	-.489	-.460	-.237	.332	.143	-.562	.300	.314	-.016	.428
	-.460	-.503	-.455	-.285	.024	.335	.290	-.516	-.508	.424	.939	.377
	-.339	.509	-.508	-.592	-.154	-.537	.459	.313	.637	-.318	.222	.169
	-.119	.412	.351	.372	.454	-.090	-.238	-.090	.178	-.557	-.302	.272
	.172	-.422	-.521	-.862	.226							
46	.041	.640	.097	-.332	-.355	-.210	.938	.921	.571	.304	-.304	-.348
	-.115	-.337	.460	.427	.121	-.251	.835	.163	-.069	.337	.367	.351
	-.320	.080	.123	.137	.044	-.354	-.280	.272	-.055	-.409	-.463	-.277
	-.330	-.148	.244	.560	.332	-.329	-.372	-.204	.964	1.000	.655	.338
	.339	-.399	-.289	-.337	.479	.442	.327	-.246	.306	.163	-.021	.397
	.267	.351	-.270	.280	-.244	-.097	-.218	.592	.170	.027	.159	-.228
	.361	-.312	-.280	-.239	.288	.525	.422	-.820	.356	-.219	.945	.931
	.797	.365	-.365	-.402	.225	.375	.103	.225	.545	-.328	.336	.153
	-.021	.408	.267	.351	-.282	.032	-.251	-.146	.117	.645	-.195	-.088
	.252	-.282	.358	-.214	.131							
47	-.162	-.009	-.164	-.634	-.518	.504	.568	.526	.961	.591	-.591	-.680
	-.131	-.670	.762	.685	.409	.601	.151	.055	-.336	.183	.224	.209
	-.615	.365	-.011	.094	.095	-.314	-.634	-.592	-.502	-.603	-.647	-.615
	-.613	-.437	-.281	.035	.214	-.642	[illegible]	-.555	.305	.555	1.000	.548
	-.568	-.719	-.439	-.672	.772	[illegible]	.560	.520	.151	.056	-.329	.183
	.224	.209	-.569	.292	-.229	-.129	-.014	-.338	-.135	.597	-.376	.625
	-.429	-.617	-.560	-.394	.241	-.021	.222	-.597	-.581	-.556	.548	.491
	.960	.513	-.512	-.674	-.130	-.656	.417	.228	.775	.561	.151	.056
	-.329	.282	.224	.209	-.599	-.959	.125	.049	.221	-.421	-.372	.523
	-.105	-.572	-.566	-.553	.373							
48	-.808	-.226	-.691	-.858	-.813	-.829	.347	.440	.534	.992	-.992	-.858
	.178	-.892	.916	.969	-.069	-.910	.405	.293	-.190	.308	.309	.345
	-.658	-.462	-.316	-.332	.154	-.284	-.938	.912	-.825	-.890	-.780	-.849
	-.767	-.434	-.717	-.387	-.493	-.859	-.816	-.833	.194	.338	.568	1.000
	-1.000	-.863	-.084	-.895	.920	.957	.297	-.911	.405	.293	-.193	.308
	.309	.345	-.652	-.479	-.519	-.482	-.132	-.457	-.775	.848	-.670	-.813
	-.504	-.817	-.815	-.006	-.745	-.467	-.479	-.858	-.815	-.854	.380	.314
	.556	.985	-.985	-.863	.315	-.890	.849	.789	.450	-.910	.405	.293
	-.193	.319	.309	.345	-.724	-.624	-.334	-.273	-.080	-.630	-.714	.834
	-.418	-.809	-.740	-.487	-.272							
49	.808	.226	.691	.858	.813	.829	-.347	-.440	-.534	-.992	.992	.858
	-.178	.892	-.916	-.969	.069	.910	-.405	-.293	.190	-.308	-.309	-.345
	.658	.462	.316	.332	-.154	.284	.938	-.912	.825	.890	.780	.849
	.767	.434	.717	.387	.493	.859	.816	.833	-.194	-.338	-.568	-1.000
	1.000	.863	-.084	.895	-.920	-.957	-.297	.911	-.405	-.293	.193	-.308
	-.309	-.345	.652	.479	.519	.482	.132	.457	.775	-.848	.670	.813
	.504	.817	.815	.006	.745	.467	.479	.858	.815	.854	-.380	-.314
	-.556	-.985	.985	.863	-.315	.890	-.849	-.789	-.450	.910	-.405	-.293
	.193	-.319	-.309	-.345	.724	.624	.334	.273	.080	.630	.714	-.834
	.418	.809	.740	.487	.272							
50	.952	.285	.649	.970	.957	.953	-.431	-.503	-.678	-.885	.885	.992
	.102	.989	-.950	-.900	-.330	.916	-.298	-.241	.297	-.274	-.307	-.338
	.784	.320	.226	.202	-.153	.261	.912	-.869	.733	.889	.898	.911
	.882	.506	.716	.430	.390	.962	.951	.947	-.597	-.399	-.719	-.863
	.863	1.000	.230	.990	-.933	-.943	-.689	.906	-.298	-.241	.303	-.274
	-.307	-.338	.759	.327	.513	.448	.046	.410	.740	-.778	.437	.845



94	.421	.418	.561	.950	.931	.323	-.227	-.358	-.517	-.925	.935	.892
	-.219	.931	-.859	-.896	.015	.998	-.769	-.139	.372	-.178	-.068	.255
	.820	.247	.237	.163	-.142	.281	.951	-.899	.769	.910	.843	.970
	.929	.285	.865	.627	.413	.957	.940	.858	-.418	-.228	-.561	-.910
	.910	.900	-.109	.937	-.910	-.905	-.122	.999	-.269	-.139	.393	-.178
	-.068	-.255	.836	.333	.498	.437	.077	.431	.806	-.889	.559	.932
	.651	.963	.943	.247	.965	.611	.444	.960	.946	.892	-.268	-.191
	-.483	-.889	.889	.918	-.277	.939	-.757	-.674	-.504	1.000	-.269	-.139
	.393	-.180	-.068	-.255	.879	.441	.268	.137	-.008	.593	.732	-.886
	.270	.948	.900	.699	.476							
95	-.130	.229	-.292	-.261	-.260	-.277	.410	.424	.279	.360	-.360	-.284
	-.090	-.275	.393	.404	-.001	-.240	1.000	.931	.683	.914	.776	.860
	.176	.029	-.624	-.051	.720	-.000	-.271	.099	-.084	-.102	-.038	-.124
	-.067	-.225	-.104	.084	-.291	-.279	.270	-.327	.322	.336	.151	.405
	-.405	-.298	-.072	-.295	.351	.406	-.009	-.249	1.000	.931	.658	.914
	.776	.860	.183	.078	-.729	-.436	.236	-.218	-.258	-.019	.046	.001
	.160	-.179	-.093	.093	-.142	.030	-.162	-.287	-.280	-.322	.407	.442
	.282	.427	-.427	-.333	-.144	-.315	.498	.507	.112	-.269	1.000	.931
	.658	.873	.776	.860	.119	-.020	-.687	-.419	.157	-.399	-.272	-.009
	.107	-.044	-.073	.218	.075							
96	-.080	.180	-.384	-.170	-.152	.288	.313	.279	.224	.256	-.256	-.235
	-.196	.211	.125	.292	.151	.126	.931	1.000	.776	.916	.855	.896
	.332	-.003	-.857	-.087	.766	.126	-.182	.011	-.075	.015	.084	.000
	.064	-.331	-.077	.069	.400	-.136	-.158	-.323	.169	.102	.056	.292
	-.293	-.271	-.179	-.221	.229	.243	.059	-.117	.931	1.000	.745	.916
	.855	.906	.846	.030	.835	.820	.360	.063	-.165	-.095	.047	.106
	.327	-.046	.070	.155	.125	.010	-.278	.189	-.161	-.302	.293	.296
	.156	.807	-.807	-.257	-.267	-.238	.474	.470	.116	-.139	.931	1.000
	.745	.876	.855	.895	.284	-.006	-.657	-.256	.264	-.223	-.197	-.149
	.153	.104	.073	.323	.141							
97	.350	.262	-.119	.342	.351	.192	.021	-.095	.219	.267	.267	.293
	-.209	.314	-.135	-.223	.106	.416	.245	.795	.061	.559	.586	.626
	.657	.062	-.527	.061	.154	.273	.094	-.090	.298	.426	.496	.474
	.619	.054	.314	.304	.211	.324	.022	.164	-.129	.021	.024	-.193
	.193	.303	.031	.306	-.252	-.215	.224	.015	.658	.745	1.000	.559
	.586	.626	.654	.142	.331	.020	.520	.016	.255	.536	.288	.591
	.564	.452	.494	.415	.259	.260	-.125	.222	.351	.298	.005	.069
	.170	-.155	.155	.273	.175	.294	.029	.091	.170	.392	.653	.745
	1.000	.497	-.533	.526	.352	.151	-.425	-.221	.268	.212	.210	-.536
	.194	.559	.510	.669	.376							
98	-.025	.350	-.207	-.219	.214	-.207	.309	.491	.435	.201	.281	.276
	-.211	-.251	.362	.309	.157	-.145	.878	.856	.509	.957	.785	.768
	.222	.002	-.479	.058	.145	[illegible]	-.178	.022	.015	-.025	-.031	-.052
	.000	-.347	-.071	.217	.142	-.132	.227	-.017	.412	.408	.289	.319
	-.319	-.301	-.297	-.265	.315	.017	.127	-.121	.873	.945	.492	.951
	.785	.768	.290	.118	-.365	-.219	.471	-.201	-.106	-.026	-.005	.011
	.227	-.126	.009	-.010	-.013	.162	-.059	-.230	-.218	-.299	.548	.516
	-.425	.335	-.335	-.211	.270	-.279	.222	.270	.272	-.130	.873	.945
	.597	1.000	.785	.769	.178	.052	-.520	-.209	.191	-.375	-.132	.078
	.051	.063	-.021	.197	[illegible]							
99	.036	.390	-.353	-.141	.125	-.025	.518	.455	.349	.279	-.279	-.288
	-.412	-.225	.319	.353	.176	.067	.776	.855	.598	.817	1.000	.744
	.301	-.227	-.543	-.306	.522	.028	-.187	.086	-.126	-.048	.005	.050
	.109	-.515	.124	.312	-.230	-.136	-.121	-.300	.351	.367	.224	.309
	-.309	-.307	-.517	-.210	.240	.235	.119	-.065	.776	.855	.586	.817
	1.000	.744	.545	.155	-.582	-.400	.092	-.149	-.180	-.116	.060	.129
	.312	.025	.105	.140	.070	.257	-.131	-.125	-.090	-.276	.487	.518
	-.317	.022	-.322	-.288	-.340	.245	.467	.442	.020	-.059	.776	.855
	.586	.785	1.000	.744	.267	-.190	-.590	-.255	.355	-.258	-.195	-.190
	.172	.144	.127	.309	.227							
100	-.148	.223	-.293	-.299	-.283	-.308	.451	.436	.316	.305	-.305	-.306
	-.038	-.309	.382	.343	.192	-.240	.860	.896	.626	.867	.744	1.000
	.162	.162	-.482	.212	.800	-.026	-.258	.109	-.015	-.168	-.052	-.150
	-.098	-.181	-.117	.072	-.282	-.321	-.308	-.365	.372	.351	.209	.346
	-.345	-.338	-.119	-.329	.318	.340	.179	-.239	.860	.896	.626	.867
	.744	1.000	.173	.181	-.641	-.294	.382	-.197	-.208	.014	.075	-.061
	.188	-.214	-.077	-.106	-.157	-.006	.171	-.327	-.316	-.358	.450	.430
	.322	.356	-.356	-.360	-.131	-.343	.600	.564	.295	-.255	.860	.896
	.626	.768	.744	1.000	.120	.108	-.602	-.241	.276	-.377	-.267	[illegible]

	-.813	-.191	-.304	-.597	-.307	-.769	.725	-.666	.272	.098	.529	.834
	-.831	-.702	.275	-.759	.799	.841	.280	-.893	-.009	-.149	-.536	-.111
	-.190	-.035	-.809	-.522	-.260	-.231	.107	-.287	.709	.965	-.791	-.911
	-.563	-.835	-.877	.221	-.912	-.665	-.366	-.772	-.735	-.706	.045	-.047
	.434	.775	-.775	-.702	.460	-.745	.554	.497	.353	-.836	-.009	-.149
	-.536	-.073	-.190	-.035	-.865	-.636	-.059	-.055	-.170	-.101	-.629	1.000
	-.610	.913	-.752	-.702	-.477							
109	.304	.343	.259	.092	-.004	.179	.221	.331	-.154	-.109	.109	.093
	-.390	.137	.204	.322	.405	.271	.107	.152	.201	.100	.172	.219
	.093	.564	.114	.132	.047	-.107	.310	-.331	.545	.221	.047	.109
	.078	.122	.346	.265	.232	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	.419	.069	.241	.120	-.251	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	.172	.119	.122	.660	.128	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	.292
	-.093	.133	.195	.139	[illegible]	.095	.250	[illegible]	[illegible]	.135	.304	[illegible]
	[illegible]	-.344	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	.194	.052	.172	.219	[illegible]	.862	-.200	.058	.607	-.099	-.252	-.610
	1.000	.225	.005	[illegible]	[illegible]							
110	[illegible]	[illegible]	.410	[illegible]	.991	.717	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	.271	[illegible]	-.759	[illegible]	.042	.954	[illegible]	[illegible]	[illegible]	.070	[illegible]	[illegible]
	.910	.194	.395	[illegible]	.020	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	.953	.166	.009	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	.809	.926	.142	[illegible]	[illegible]	[illegible]	[illegible]	.951	[illegible]	[illegible]	[illegible]	[illegible]
	.141	.079	.222	.297	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	.740	.956	.975	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	.462	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	.557	.938	.144	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	.285	.000	.920	[illegible]	[illegible]							
111	[illegible]	.335	.155	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-.750	.763	.859
	.147	.892	.759	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	.914	[illegible]	.023	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	.852	[illegible]	.757	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	.742	.885	.121	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-.566	[illegible]
	.127	.109	.945	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	.501	[illegible]
	.293	.259	.948	.252	.727	.500	.230	[illegible]	.956	.930	-.385	-.208
	-.479	.759	.753	[illegible]	.121	[illegible]	.214	[illegible]	[illegible]	.900	.073	.073
	.501	.071	.127	[illegible]	[illegible]	.214	.120	[illegible]	.071	.592	.600	-.751
	.005	.920	.000	[illegible]	[illegible]							
112	.661	.111	.179	.582	[illegible]	.189	.131	-.206	[illegible]	.329	.329	.579
	-.219	.109	-.573	-.855	-.132	.737	.113	.323	.351	.274	.309	.111
	.828	.124	-.149	-.020	.190	.379	.700	-.679	.557	.705	.422	.779
	.904	.677	.564	.497	.019	.671	.675	.537	-.363	.211	.553	-.487
	.487	.624	.045	.382	.474	.521	.460	.709	.219	.223	.660	.272
	.309	.111	.346	.265	.215	.130	.290	.491	[illegible]	-.715	.362	[illegible]
	.790	.919	.302	.504	.590	.526	.076	.382	.344	.537	.121	[illegible]
	-.445	-.404	.404	.350	.089	.341	-.275	-.145	.381	.399	.219	[illegible]
	.660	.197	.309	.111	.266	.295	.198	.191	-.959	.464	.210	-.702
	.115	.302	.751	1.000	[illegible]							
113	.428	.320	-.092	.381	.389	.299	.047	-.089	-.338	-.299	.298	.272
	-.367	.325	-.341	-.231	-.064	.470	.075	.151	.366	.142	.227	-.054
	.504	.038	-.070	-.104	.003	.297	.489	-.416	.349	.128	.264	.514
	.543	.034	.374	.384	-.056	.419	.418	.296	-.226	-.131	-.373	-.272
	.272	.353	-.011	.369	-.472	-.452	.269	.477	.075	.161	.396	.142
	.227	-.054	.545	.171	.263	.427	.130	.402	.653	-.481	.217	.551
	.529	.604	.562	.747	.128	.444	.041	.441	.455	.353	.002	.075
	-.323	-.167	.167	.405	.195	.381	.126	-.032	-.368	.476	.075	.161
	.396	.090	.227	-.054	.592	.165	.495	.278	-.073	.377	.705	-.477
	.070	.549	.466	.876	1.000							

APPENDIX—4·1

Inter-Temporal 84 x 84 correlation matrix of direct level analysis

	1	2	3	4	5	6	7	8	9	10	
1	1.000	.951	.858	.905	.840	.900	.866	.845	.027	-.123	.12
2	.951	1.000	.773	.913	.908	.855	.810	.867	-.057	.159	-.15
3	.858	.773	1.000	.770	.693	.877	.815	.730	.452	-.115	.11
4	.905	.913	.770	1.000	.980	.949	.617	.628	-.039	-.001	.00
5	.840	.900	.693	.980	1.000	.892	.543	.599	-.081	.168	-.16
6	.900	.855	.877	.949	.892	1.000	.680	.641	.113	-.097	.09
7	.866	.810	.815	.617	.543	.680	1.000	.960	.215	-.043	.04
8	.845	.867	.730	.628	.599	.641	.960	1.000	.062	.164	-.14
9	.027	-.057	.452	-.039	-.081	.113	.215	.062	1.000	-.067	.06
10	-.123	.159	-.115	-.001	.168	-.097	-.043	.161	-.067	1.000	-1.00
11	.123	-.159	.115	.001	-.168	.097	.043	-.165	.067	-1.000	1.00
12	.726	.696	.652	.871	.830	.889	.432	.401	.001	-.126	.12
13	.631	.738	.537	.836	.802	.780	.362	.433	-.051	.308	-.30
14	.427	.162	.442	.367	.191	.512	.280	.083	.105	-.854	.85
15	-.809	-.692	-.610	-.742	-.648	-.744	-.553	-.495	.164	.451	-.45
16	-.540	-.329	-.398	-.470	-.331	-.502	-.301	-.153	.053	.812	-.81
17	-.195	-.429	-.166	-.228	-.349	-.169	-.268	-.469	.150	-.897	.89
18	.266	.032	.064	.098	-.055	.115	.165	.031	-.189	-.903	.90
19	.561	.504	.630	.436	.387	.480	.599	.515	.428	-.072	.07
20	.270	.280	.285	.194	.178	.176	.282	.178	.159	-.111	.11
21	.216	.125	.324	-.014	-.081	.113	.406	.341	.148	-.176	.17
22	.164	.035	.458	.125	.042	.313	.170	.071	.324	-.201	.20
23	.266	.309	.144	.240	.255	.159	.174	.264	-.273	.082	-.08
24	.669	.730	.652	.656	.665	.700	.592	.643	-.016	.294	-.29
25	.137	.182	.305	.158	.173	.283	.202	.216	.169	.314	-.31
26	.214	.175	.339	.213	.190	.273	.229	.141	.371	.009	-.00
27	-.073	-.128	.151	-.063	-.096	.069	.046	-.047	.398	.040	-.03
28	-.039	-.047	.063	-.095	-.097	-.089	.024	.041	.035	.054	-.05
29	.853	.828	.836	.748	.703	.758	.775	.783	.091	-.006	.00
30	.765	.821	.695	.725	.735	.669	.657	.733	-.010	.193	-.19
31	.609	.611	.827	.524	.501	.635	.677	.667	.421	.240	-.240
32	.942	.928	.829	.979	.939	.971	.707	.702	.007	-.050	.050
33	.847	.919	.709	.967	.988	.895	.580	.634	-.052	.188	-.188
34	.823	.783	.837	.843	.783	.914	.665	.639	.102	-.055	.056
35	.487	.515	.596	.444	.447	.445	.487	.524	.199	-.200	-.200
36	.498	.536	.550	.453	.460	.435	.481	.541	.109	.184	-.185
37	.093	.174	.436	.109	.160	.170	.237	.242	.687	.511	-.511
38	-.187	.084	-.202	-.032	.118	-.153	-.155	.040	-.070	.884	-.884
39	.186	-.087	.199	.027	-.145	.161	.150	-.049	.078	-.894	.894
40	.650	.600	.577	.739	.684	.797	.429	.375	.023	-.182	.182
41	.508	.615	.420	.696	.745	.660	.295	.356	-.012	.309	-.309
42	.418	.183	.412	.334	.167	.493	.305	.137	.051	-.750	.750
43	-.582	-.447	-.362	-.423	-.317	-.451	-.465	-.391	.239	.502	-.502
44	-.417	-.221	-.268	-.267	-.136	-.327	-.308	-.174	.118	.690	-.690
45	-.107	-.342	-.042	-.172	-.301	-.072	-.150	-.360	.220	-.802	.803
46	.312	.068	.142	.125	-.036	.168	.224	.081	-.151	-.910	.910
47	.320	.240	.446	.128	.076	.206	.553	.413	.539	-.084	.085
48	.325	.263	.388	.161	.120	.208	.450	.360	.386	-.094	.095
49	.048	-.057	.176	-.165	-.223	-.074	.271	.136	.330	-.182	.183
50	.180	.031	.360	.057	-.038	.171	.241	.135	.339	-.352	.352
51	.309	.349	.192	.277	.290	.190	.215	.284	-.118	.073	-.074
52	.483	.529	.460	.495	.508	.498	.372	.401	.038	.224	-.223
53	.190	.215	.259	.218	.225	.278	.164	.160	.106	.191	-.190
54	.437	.423	.540	.410	.393	.483	.413	.365	.301	.079	-.078
55	-.110	-.140	-.159	-.094	-.100	-.109	-.118	-.172	-.030	-.164	.165
56	.034	-.019	.102	-.176	-.229	-.050	.217	.240	-.065	-.093	.092
57	.893	.876	.837	.775	.734	.787	.838	.841	.073	.023	-.023
58	.846	.895	.701	.795	.794	.739	.723	.801	-.127	.150	-.151
59	.460	.510	.696	.414	.429	.498	.559	.571	.453	.410	-.410
60	.930	.922	.831	.949	.914	.952	.731	.728	.033	-.018	.018
61	.826	.904	.692	.924	.947	.860	.586	.652	-.059	.224	-.224
62	.735	.771	.778	.749	.862	.618	.617	.106	.095	-.094	
63	.785	.823	.785	.746	.745	.729	.740	.772	.163	.217	-.217
64	.816	.857	.738	.783	.781	.740	.728	.785	.009	.168	-.168
65	-.041	.078	.244	.007	.085	.028	.079	.114	.593	.584	-.583
66	-.183	-.073	-.063	-.019	.032	-.059	-.155	-.105	.138	.380	-.379
67	-.085	-.137	.072	-.070	-.088	-.007	-.024	-.114	.368	-.153	.154
68	.112	.131	.272	.218	.214	.283	.132	.071	.341	-.028	.029
69	.170	.234	.239	.309	.347	.323	.103	.118	.209	.181	-.181
70	.072	-.016	.247	.098	.049	.210	.096	-.025	.395	-.253	.254
71	-.149	-.137	-.003	-.096	-.074	-.072	-.085	-.118	.315	.040	-.040
72	-.151	-.124	-.013	-.091	-.061	-.074	-.083	-.103	.296	.089	-.088
73	-.143	-.167	.004	-.106	-.106	-.064	-.086	-.154	.356	-.081	.082
74	.370	.112	.234	.166	-.003	.227	.313	.139	-.035	-.910	.910
75	.255	.089	.374	.066	-.038	.205	.392	.210	.404	-.393	.394
76	.182	.083	.356	.097	.039	.179	.210	.088	.528	-.174	.175
77	.015	-.107	.160	-.186	-.260	-.060	.212	.094	.221	-.251	.251
78	.107	-.052	.296	.006	-.101	.178	.144	.051	.227	-.395	.395
79	.168	.210	.037	.192	.214	.092	.007	.086	-.268	.013	-.014
80	.490	.541	.458	.487	.509	.473	.368	.404	.006	.173	-.173
81	.181	.220	.274	.168	.193	.209	.176	.187	.152	.185	-.185
82	.336	.304	.460	.303	.281	.385	.345	.265	.357	.035	-.034
83	-.177	-.255	.072	-.124	-.159	-.035	-.112	-.222	.404	-.071	.072
84	-.077	-.131	-.043	-.248	-.281	-.177	.092	.061	-.102	-.081	.081

	12	13	14	15	16	17	18	19	20	21	22
1	.726	.681	.427	-.809	-.540	-.125	.266	561	.270	.216	.161
2	.696	738	.162	-.692	-.329	-.42	.032	504	.200	.125	035
3	.652	537	.442	- 610	-.398	- 166	.064	630	.285	.321	.158
4	.871	.836	.367	-.742	- 470	-.220	.098	.136	.194	-.014	.125
5	.830	.882	.191	-.643	.831	-.309	-.055	.387	.178	-.081	.042
6	.889	.780	.512	-.744	-.502	- 169	.115	.480	.176	.113	.313
7	.432	362	.280	-.553	-.301	- 268	.165	599	.232	.106	.170
8	.404	433	083	-.495	-.158	-.469	.081	.515	.178	.341	.071
9	.001	-.051	.105	.164	.053	.150	- 189	.128	.159	148	.324
10	-.126	.308	-.854	.451	.012	.807	-.903	-.072	-.111	-.176	-.201
11	.126	-.308	.854	-.450	-.011	-.807	.903	.072	.111	.176	.202
12	1.000	894	.546	-.750	- 561	- 063	.148	.320	.120	-.078	.160
13	.894	1.000	.113	.531	.209	-.116	-.225	.265	086	-.182	.016
14	.546	.113	1.000	-.668	-.852	.635	.744	.215	.107	.166	.329
15	-.750	- 531	- 668	1.000	865	.146	- 578	-.361	-.291	-.175	-.133
16	-.561	- 209	-.852	.865	1.000	-.623	-.836	-.268	-.246	-.139	-.116
17	-.063	.116	.635	.146	- 623	1.000	.747	-.039	.031	.002	.023
18	.148	-.225	.744	-.578	-.836	.747	1.000	.092	.066	.141	-.007
19	.320	.265	.215	-.361	-.268	-.039	.092	1.000	.573	.197	.057
20	.120	.086	.107	-.291	-.246	.031	.066	573	1.000	138	.130
21	-.078	-.182	.166	-.175	.139	002	.141	.197	138	1.000	.240
22	.160	.016	.329	- 133	- 116	.023	- 007	.057	.130	.240	1.000
23	.012	.050	.067	-.201	-.039	-.211	.058	-.232	-.108	.228	.008
24	.568	.687	.070	-.496	- 121	-.585	- 236	.408	.311	.172	.230
25	.257	.335	- 052	-.011	193	-.395	-.397	.243	.173	.049	.336
26	.178	141	.134	-.088	-.055	-.020	- 126	.457	.493	.181	.149
27	.177	.152	.112	.118	102	-.016	-.171	.239	.158	-.083	.392
28	-.066	- 031	-.087	.059	.116	.197	- 068	.067	.126	-.060	.210
29	.529	492	.251	-.605	-.319	.221	.035	.494	.319	.267	.318
30	.494	.566	.035	-.492	- 161	.113	.058	.437	.291	.078	.159
31	.359	388	.073	- 269	.037	.491	-.291	.389	.143	.167	.110
32	.884	819	.430	-.797	- 522	-.212	.142	.466	.204	.096	.180
33	.853	.911	.187	-.661	-.334	.371	- 075	.417	.201	-.054	.036
34	.852	.776	.194	- 697	-.138	-.228	067	.381	068	.240	.376
35	.219	.318	.042	-.174	062	- 393	.179	.355	.211	.089	.311
36	.256	.321	- 041	-.203	.035	.361	- 121	.315	.173	.030	.257
37	.010	.196	-.342	.253	.454	.302	-.670	.352	.175	.155	.207
38	- 101	.304	-.799	.468	.735	.718	-.805	.044	-.091	- 416	-.290
39	.126	- 288	.820	-.477	-.719	.732	.812	.047	.097	.391	.274
40	.949	.813	.584	-.748	.596	.410	.202	.284	.087	.033	119
41	.816	.952	.095	-.468	-.185	-.360	-.242	.238	.075	-.181	-.082
42	.539	.193	.927	-.671	-.799	.528	.686	.145	.050	.282	.292
43	-.138	-.197	-.601	.819	.731	.211	-.619	-.170	-.191	-.414	-.020
44	-.333	-.017	-.709	.726	.826	.191	-.731	-.148	-.200	-.420	-.054
45	-.021	-.363	.682	-.219	.600	.810	.664	.071	.112	.196	.081
46	.160	- 227	.776	-.610	-.849	.722	.985	.063	.101	.229	.081
47	.061	.009	.142	.121	.126	.055	-.016	.679	.107	.506	.052
48	.072	.020	.121	-.100	.156	.026	.050	.616	.019	.019	.157
49	-.176	-.289	.103	.016	.099	.182	.040	.502	.184	.657	.059
50	.039	-.135	.336	.135	.211	.210	.221	.209	.181	.272	.758
51	.059	.091	-.010	-.259	.101	- 192	.005	- 111	- 109	- 023	-.125
52	.482	.536	.070	- 124	- 168	-.379	-.198	.424	.515	-.096	.103
53	.352	.387	.057	-.186	-.012	.266	-.216	.346	.173	-.097	.186
54	.362	.348	.151	-.305	-.141	.191	- 161	.564	.615	.183	.228
55	.034	.010	.060	-.028	- 156	.085	.216	-.101	-.099	- 274	-.188
56	-.165	.245	.089	-.050	.026	.428	.136	.158	- 091	.690	.303
57	.542	.812	.245	-.620	-.320	-.235	.075	.162	.280	.362	.276
58	.530	.571	.105	-.575	-.228	-.446	.017	.366	.229	.205	.153
59	.269	.378	.110	.084	.231	.589	.105	.310	.070	.262	.385
60	.858	.805	.396	-.758	-.476	-.242	.697	.470	.218	.082	.201
61	.768	.837	.137	-.599	-.263	.111	-.105	.127	.267	-.041	.034
62	.800	.767	.311	-.549	-.260	-.312	-.095	.331	.027	.141	.372
63	.166	.522	.057	-.385	-.072	-.157	-.349	.108	.152	.181	.258
64	.502	.545	.092	-.456	-.139	-.435	-.043	.349	.097	.138	.222
65	-.106	.118	-.154	.353	.531	.127	-.690	.133	-.010	-.015	.016
66	-.114	.059	-.361	.404	.436	-.230	- 476	-.057	- 126	-.231	.168
67	-.057	- 120	.099	.172	.002	.264	-.008	.113	-.002	-.011	.211
68	.309	.276	.157	-.038	.069	.985	.103	.203	.014	- 094	.252
69	.350	.111	.083	.021	.052	.135	-.258	.191	.095	-.226	.153
70	.196	.062	.321	-.020	-.167	.279	.063	.179	.008	-.007	.330
71	-.117	-.085	-.100	.302	.184	.107	-.161	.049	-.079	-.124	.175
72	-.124	-.070	-.143	.325	.228	.056	- 202	.052	- 100	-.137	.176
73	-.099	-.121	.010	.238	.071	.200	-.065	.089	-.026	-.089	.169
74	.197	-.201	.809	-.620	-.858	.924	.945	.183	.202	.221	.112
75	.111	-.038	.412	-.259	- 375	.337	.210	.550	.474	.572	.254
76	.061	-.040	.213	.151	.191	.111	.995	.068	.679	-.022	.397
77	-.213	-.348	.179	-.013	-.106	.188	.113	.264	.271	.865	.228
78	.085	-.125	.422	.150	.241	.229	.262	.020	-.110	.293	.825
79	- 004	026	- 058	-.122	.116	.081	.115	- 317	-.281	.037	-.123
80	.915	.482	.020	-.424	-.180	.305	- 144	172	.579	-.046	.143
81	.198	.271	- 065	-.136	.012	-.227	-.216	.384	.559	-.039	.241
82	.301	.272	.163	-.243	-.142	.098	-.165	.564	.583	.227	.168
83	.013	- 019	.196	.205	.100	.122	- 131	.178	.175	-.182	.364
84	-.267	-.300	-.031	.029	.028	- 001	.097	-.022	.052	.710	.130

1	.266	.669	.137	.21		128	-.047	.828	.821		
2	.309	.730	.182	.175		182	.151	.063	.836	.695	.827
3	.144	.652	.305	.339			-.063	-.095	.748	.725	.524
4	.240	.656	.158	.213		-.063	-.096	-.097	.703	.735	.501
5	.255	.665	.173	.190		-.096	.069	-.089	.758	.669	.635
6	.159	.700	.283	.273		.069	.046	.024	.775	.657	.677
7	.174	.592	.202	.229		.046	-.047	.041	.783	.733	.667
8	.264	.643	.216	.144		-.047	.398	.035	.091	-.010	.421
9	-.273	-.016	.169	.371		.398	.010	.054	-.006	.193	.240
10	.082	.294	.314	.009		.010	-.039	-.055	.006	-.194	-.240
11	-.083	-.294	-.313	-.008		-.039	.177	-.066	.529	.494	.359
12	.012	.568	.257	.178		.177	.152	-.031	.492	.566	.388
13	.050	.637	.335	.141		.152	.112	-.087	.251	.035	.073
14	-.067	.070	-.053	.134		.112	.118	.059	-.605	-.492	-.269
15	-.204	-.496	-.011	-.088		.118	.102	.116	-.319	-.161	.037
16	-.039	-.121	.193	-.055		.102	-.016	-.137	-.314	-.449	-.191
17	-.241	-.535	-.395	-.029		-.016	-.191	-.068	.095	-.058	-.291
18	.058	-.236	-.397	-.126		-.191	.239	.067	.494	.437	.389
19	-.232	.408	.248	.457		.239	.158	.126	.319	.291	.113
20	-.108	.311	.173	.143		.158	.181	-.083	-.060	.267	.078
21	.328	.172	.049	.181		-.083	.392	.210	.318	.159	.140
22	.008	.230	.336	.149		.392	-.663	-.309	.213	.168	.342
23	1.000	.035	-.584	-.435		-.663	.234	.148	.680	.701	.534
24	.035	1.000	.671	.285		.234	.651	.426	.319	.367	.270
25	-.584	.671	1.000	.481		.651	.375	.007	.229	.179	.281
26	-.435	.285	.481	1.000		.375	1.000	.479	.046	.049	.001
27	-.663	.234	.651	.375		1.000	.179	1.000	.396	.476	.025
28	-.309	.148	.426	.007		.179	.046	.396	1.000	.947	.699
29	.213	.680	.319	.229		.046	.049	.476	.947	1.000	.568
30	.168	.701	.367	.179		.049	.001	.025	.699	.568	1.000
31	.342	.534	.270	.281		.001	-.032	-.081	.786	.729	.583
32	.219	.691	.198	.206		-.032	-.037	-.062	.712	.749	.508
33	.203	.718	.238	.208		-.037	.076	-.122	.699	.578	.691
34	.181	.681	.323	.186		.076	.265	.711	.843	.872	.566
35	-.001	.506	.152	.190		.265	.218	.717	.841	.898	.490
36	.013	.498	.122	.122		.218	.202	.064	.230	.217	.703
37	.050	.208	.248	.347		.202	.185	.276	-.023	.256	-.030
38	-.151	.269	.384	-.009		.185	-.161	-.279	.012	-.264	.011
39	.126	-.260	-.369	.021		-.161	.178	-.180	.391	.319	.306
40	-.021	.501	.212	.124		.178	.135	.221	-.089	.318	.403
41	-.054	.585	.336	.135		.221	.012	.016	-.206	.216	-.021
42	.020	.084	-.071	.012		.016	.347	.370	-.291	-.118	-.174
43	-.342	-.240	.250	-.018		.347	.317	.139	-.111	.111	-.064
44	-.271	-.012	.370	-.041		.317	.093	-.077	-.384	-.323	-.541
45	-.062	-.465	-.435	.093		-.077	-.083	-.212	-.095	.153	-.035
46	.098	-.200	-.378	-.083		-.212	.197	.278	-.045	.237	.122
47	-.310	.243	.224	.197		.278	.432	.275	.069	.324	.261
48	-.210	.274	.200	.432		.275	.345	.112	-.067	.039	-.113
49	-.162	.003	-.003	.345		.112	.012	.251	.113	.235	.101
50	.029	.002	.032	.012		.251	-.160	-.637	-.357	.167	.155
51	.850	.085	-.576	-.160		-.637	.322	.279	.138	.462	.521
52	-.003	.784	.474	.322		.279	.558	.595	.309	.263	.322
53	-.422	.604	.723	.558		.595	.870	.373	.144	.500	.470
54	-.350	.629	.645	.870		.373	.070	.242	.209	-.115	-.092
55	-.351	-.082	.119	.070		.242	-.185	-.019	.138	-.001	.387
56	.318	-.036	-.011	-.070		-.185	.310	-.135	.056	.897	.808
57	.287	.651	.238	.310		-.135	-.235	-.233	.086	.868	.864
58	.364	.633	.190	.235		-.233	.381	.085	.123	.600	.544
59	.098	.513	.452	.381		.085	.215	-.001	-.023	.808	.761
60	.140	.723	.292	.215		-.001	.339	-.061	-.020	.748	.788
61	.131	.716	.321	.339		-.061	.239	.150	.030	.680	.656
62	-.000	.688	.507	.239		.150	.345	-.104	.089	.842	.809
63	.252	.578	.263	.345		-.104	.238	-.152	.121	.862	.851
64	.295	.585	.227	.238		-.152	.302	-.011	-.110	.053	.074
65	.109	.058	.101	.302		-.011	.312	.027	-.083	.020	.023
66	-.192	.012	.246	.110		.312	.338	-.115	-.100	-.142	-.024
67	-.287	-.173	.065	.531		.338	.456	-.074	.085	.077	.111
68	-.323	.119	.275	.558		.456	.632	.395	-.025	.148	.216
69	-.311	.209	.354	.632		.395	.552	.418	-.111	.018	-.066
70	-.331	-.030	.175	.552		.418	.482	.325	-.070	-.124	-.101
71	-.261	-.169	.090	.482		.325	.468	.328	-.043	-.109	-.072
72	-.252	-.150	.113	.468		.328	.508	.312	-.137	-.159	-.172
73	-.276	-.213	.031	.508		.312	.001	-.152	-.122	.191	-.021
74	.036	-.159	-.344	-.001		-.152	.449	.299	-.022	.198	.013
75	-.380	.149	.201	.449		.299	.337	.247	-.073	.169	.065
76	-.097	.201	.123	.337		.247	.266	.055	-.026	.086	-.096
77	-.024	.013	.033	.266		.055	-.041	.256	.158	.188	.042
78	-.062	.020	.182	-.041		.256	.310	.234	.224	.533	.605
79	.904	-.090	-.673	-.545		-.752	.234	.504	.379	.333	.410
80	-.065	.749	.171	.310		.234	.504	.783	.381	.078	.313
81	-.371	.567	.648	.501		.504	.783	.376	.840	.575	.032
82	-.431	.551	.582	.783		.381	.376	.840	.575	.032	.050
83	-.606	.081	.484	.376		.840	.575	.032	.050	-.076	-.202
84	.205	-.083	-.107	-.081		-.064	-.110	-.058	-.202	.177	

	34	35	36	37	38	39	40	41	42	43	44
1	.823	.487	.498	.093	-.182	.186	.650	.508	.418	-.582	-.417
2	.783	.515	.536	.174	.084	-.087	.600	.615	.183	-.447	-.224
3	.837	.596	.550	.436	-.202	.199	.577	.420	.412	-.362	-.268
4	.843	.444	.453	.109	-.022	.027	.739	.696	.334	-.423	-.267
5	.783	.447	.460	.160	.148	-.115	.684	.715	.167	-.317	-.136
6	.944	.445	.485	.170	-.153	.161	.797	.660	.193	-.451	-.327
7	.665	.487	.481	.237	-.155	.150	.423	.295	.305	-.165	-.308
8	.639	.524	.541	.242	.040	-.049	.375	.336	.187	-.391	-.174
9	.102	.199	.109	.687	-.070	.078	.023	-.012	.051	.239	.118
10	-.055	.200	.184	.511	.884	-.894	-.182	.309	-.750	.502	.690
11	.056	-.200	-.185	-.511	-.884	.891	.182	-.309	.750	-.502	-.690
12	.852	.249	.256	.010	-.104	.128	.949	.846	.539	-.438	-.333
13	.746	.318	.321	.196	.304	-.280	.813	.952	.143	-.197	-.017
[redacted]	.491	-.042	-.041	.342	-.799	.820	.584	.095	.927	-.601	-.705
15	-.697	-.171	-.203	.253	.468	-.477	-.718	.168	.671	.819	.726
16	-.438	.062	.035	.454	.785	-.749	-.596	.105	-.720	.771	.826
17	-.223	-.393	-.384	-.502	-.718	.732	.008	.365	.528	-.244	-.497
18	.067	-.179	-.124	-.640	-.805	.812	.202	-.242	.686	-.619	-.731
19	.381	.355	.315	.352	-.044	.047	.284	.238	.145	-.170	-.148
20	.088	.211	.173	.175	-.091	.097	.089	.075	.050	-.194	-.200
21	.240	.089	.030	.155	-.416	.391	.033	-.181	.282	-.414	-.420
22	.376	.311	.257	.207	-.290	.274	.119	-.082	.292	-.020	-.054
23	.181	-.001	.013	.050	-.151	.126	-.024	-.054	.020	-.342	-.271
24	.681	.506	.498	.208	.269	-.260	.501	.585	.084	-.240	-.012
25	.323	.152	.122	.248	.384	.387	.212	.386	-.071	.250	.370
26	.186	.100	.122	.347	-.009	.021	.121	.185	.042	-.018	-.041
27	.076	.265	.213	.202	.185	-.161	.178	.221	.046	.347	.317
28	-.122	.111	.117	.064	.276	-.273	.180	-.039	-.206	.370	.439
29	.699	.843	.841	.230	-.023	.012	.391	.318	.216	-.291	-.111
30	.578	.872	.898	.217	.256	-.264	.819	.403	-.024	-.118	.111
31	.691	.566	.490	.703	-.030	.011	.306	.268	.141	-.171	-.064
32	.909	.444	.451	.102	-.098	.103	.801	.704	.432	-.518	-.355
33	.797	.443	.457	.172	.182	-.176	.732	.809	.167	-.347	-.147
34	1.000	.388	.368	.166	-.198	.206	.829	.647	.581	-.482	-.356
35	.386	1.000	.986	.376	.269	-.279	.051	.129	-.114	.236	.374
36	.368	.986	1.000	.272	.289	-.298	.057	.138	-.120	.213	.374
37	.166	.376	.272	1.000	.331	-.342	-.050	.166	-.339	.366	.372
38	-.198	.269	.289	.331	1.000	-.998	-.207	.329	-.815	.640	.829
39	.206	-.279	-.298	-.342	-.998	1.000	.233	-.305	.836	-.640	-.831
40	.829	.051	.057	-.050	-.207	.233	1.000	.838	.619	-.564	-.475
41	.647	.129	.138	.166	.329	-.305	.838	1.000	.136	-.227	-.055
42	.581	-.114	-.120	-.339	-.815	.836	.619	.136	1.000	-.681	-.765
43	-.482	.236	.213	.366	.640	-.640	-.564	.227	-.681	1.000	.940
44	-.356	.374	.374	.372	.829	-.831	-.475	.055	-.765	.940	1.000
45	-.078	-.199	-.544	-.229	-.850	.859	.090	-.317	.607	-.383	-.671
46	.144	-.143	-.099	-.584	-.872	.876	.229	.262	.713	-.667	-.780
47	.175	.135	.068	.333	-.137	.137	.121	.057	.105	-.178	-.191
48	.133	.246	.210	.267	-.098	.106	.055	.014	.074	-.092	-.108
49	-.038	-.086	-.168	.175	-.292	.279	-.051	.193	.111	-.290	-.342
50	.193	.171	.172	.039	-.358	.345	.022	-.203	.283	-.117	-.149
51	.147	-.067	-.032	.081	.073	-.060	.036	.041	-.009	-.356	-.261
52	.429	.283	.279	.171	.291	-.271	.111	.574	.032	-.248	-.057
53	.267	.213	.221	.134	.306	-.275	.387	.156	.021	-.016	.103
54	.414	.386	.385	.339	.083	-.069	.309	.340	.090	-.154	-.074
55	-.110	-.040	-.054	-.195	-.028	.013	.057	.064	-.007	.064	-.023
56	.159	.006	.001	.051	-.347	.321	-.040	-.241	.246	-.328	-.291
57	.766	.596	.583	.223	-.071	.080	.165	.371	.265	-.179	-.285
58	.679	.681	.681	.157	.078	-.093	.400	.418	.088	-.393	-.158
59	.516	.572	.507	.716	.227	-.242	.201	.286	-.070	.029	.183
60	.900	.484	.494	.107	-.043	.049	.776	.699	.394	-.484	-.299
61	.758	.501	.516	.211	.208	-.209	.638	.723	.106	-.301	-.091
62	.915	.463	.451	.208	.017	.012	.750	.678	.390	-.302	-.133
63	.673	.606	.673	.393	.119	-.135	.314	.347	.029	-.171	.014
64	.670	.687	.705	.211	.112	-.128	.335	.360	.017	-.214	-.007
65	.039	.181	.098	.872	.106	-.115	-.141	.110	-.111	.352	.387
66	-.117	.074	.073	.225	.121	-.128	-.209	.046	-.141	.441	.455
67	-.049	.055	-.060	.071	-.111	.113	-.071	.113	.031	.141	.030
68	.255	.065	.041	.124	.032	-.019	.284	.296	.112	.055	.032
69	.247	.149	.117	.213	.242	-.231	.272	.417	-.085	.126	.168
70	.201	-.012	-.048	.044	-.215	.227	.202	.073	.275	-.003	-.100
71	-.121	-.006	-.027	.133	.096	-.098	-.161	-.086	-.168	.299	.223
72	-.124	.026	.008	.146	.148	-.151	-.178	-.077	-.213	.335	.273
73	-.110	-.086	-.115	.097	-.034	.037	-.114	.106	-.052	.204	.092
74	.198	-.124	-.095	-.509	-.883	.890	.263	-.230	.776	-.683	-.798
75	.229	.029	-.035	.049	-.426	.426	.241	-.020	.428	-.358	-.423
76	.132	.106	.042	.310	-.207	.221	.065	-.047	.182	-.066	-.140
77	.038	-.019	-.089	.065	.386	-.376	-.081	-.300	.247	-.291	-.348
78	.266	.145	.151	-.089	-.404	.391	.108	-.182	.406	-.122	-.154
79	.102	-.134	-.108	-.066	-.158	.137	-.020	-.055	.021	-.342	-.294
80	.384	.367	.373	.112	.296	-.277	.366	.499	-.040	-.229	-.044
81	.156	.331	.317	.173	.334	-.322	.169	.329	-.142	.024	.145
82	.317	.217	.162	.315	.059	-.041	.311	.334	.096	-.188	-.125
83	-.096	.313	.272	.154	.151	-.128	-.011	.023	-.025	.418	.361
84	-.035	-.153	-.211	.019	-.332	.298	-.132	-.272	.101	-.264	-.314

	45	46	47	48	49	50	51	52	53	
1	-.107	.312	.320	.325	.040	180	.309	483	190	.437
2	-.342	.068	.240	.263	-.057	031	.319	.529	.215	.423
3	-.042	.142	.446	.388	.176	.360	.192	.460	.259	.540
4	-.172	.125	.128	.161	-.165	.057	.277	.495	.218	.410
5	-.301	-.086	.076	.120	-.223	-.038	.299	.508	.225	.393
6	-.072	.168	.206	.208	-.071	.171	.190	.498	.278	.483
7	-.150	.224	.553	.450	.271	.241	.215	.372	.164	.413
8	-.360	.081	.113	.360	.136	.135	.284	.401	.160	.365
9	.220	-.151	.539	.386	.330	.339	-.118	.038	.106	.304
10	-.802	-.910	-.084	-.094	-.182	-.352	.073	.224	.191	.079
11	.803	.910	.085	.095	.183	.352	-.074	-.223	-.190	-.078
12	-.021	.160	.064	.072	-.196	.039	.059	.482	.352	.362
13	-.363	-.227	.009	.020	-.289	-.135	.091	.536	.387	.348
14	.632	.776	.127	.124	.108	.338	-.010	.070	.059	.154
15	-.219	-.610	-.124	-.180	-.016	.135	-.259	-.424	-.186	-.305
16	-.600	-.849	-.126	-.156	-.099	-.214	-.104	-.143	-.012	-.144
17	.840	.722	.055	.028	.169	.213	-.199	-.379	-.266	-.191
18	.664	.985	-.016	.050	.040	.221	.055	-.198	-.246	-.161
19	.071	.063	.679	.616	.502	.209	-.112	.424	.346	.564
20	.142	.101	.107	.819	.484	.181	-.139	.515	.473	.615
21	.196	.229	.596	.019	.657	.272	.023	-.096	-.097	.183
22	.081	.081	.052	.157	.059	.758	-.125	.103	.186	.228
23	-.062	.098	-.310	-.210	-.162	.029	.850	-.093	-.422	-.350
24	-.165	-.200	.218	.271	.003	.002	.085	.784	.601	.629
25	-.135	.378	.224	.200	-.003	.032	-.576	.474	.723	.645
26	.093	-.083	.197	.182	.315	.012	-.460	.322	.558	.870
27	-.077	-.212	.278	.275	.112	.251	-.637	.279	.595	.373
28	-.384	-.095	.045	.069	.067	.113	-.357	.138	.309	.141
29	-.328	.158	.297	.328	.037	.285	.167	.162	.263	.500
30	-.541	-.035	.122	.261	-.113	.101	.155	.521	.322	.470
31	-.230	-.178	.329	.282	.196	.210	.275	.301	.131	.431
32	-.142	.184	.198	.200	-.071	.105	.254	.513	.248	.442
33	-.332	-.061	.123	.149	-.175	-.051	.256	.580	.309	.445
34	-.078	.144	.175	.138	-.038	.193	.147	.129	.267	.414
35	-.499	-.148	.135	.216	-.086	.174	-.067	.283	.243	.386
36	-.544	-.089	.068	.210	-.163	.172	-.032	.279	.221	.335
37	-.229	-.584	.033	.267	-.175	.039	.084	.171	.134	.339
38	-.850	-.872	-.137	-.093	.292	-.356	-.073	.291	.306	.083
39	.859	.876	.137	.100	.279	.345	.069	-.271	-.275	-.069
40	.090	.220	.121	.035	.054	.022	.036	.441	.337	.309
41	-.317	-.262	.065	.011	-.193	-.203	.091	.574	.458	.340
42	.607	.713	.105	.077	.141	.283	-.009	.032	.021	.090
43	-.083	-.667	.178	.092	-.270	.117	.056	.248	-.016	-.154
44	-.671	-.780	-.191	-.108	-.342	-.147	-.261	.057	.103	-.071
45	1.000	.686	.160	.133	.291	.116	-.079	-.350	-.285	-.103
46	.686	1.000	.032	.029	.100	.278	.077	-.208	-.262	-.109
47	.160	.032	1.000	.550	.768	.261	.221	.115	.144	.460
48	.133	.029	.550	1.000	.432	.242	-.116	.405	.368	.570
49	.291	.100	.768	.432	1.000	.226	-.189	.049	.085	.328
50	.116	.278	.251	.242	.226	1.000	-.017	-.013	.002	.044
51	-.079	.077	-.221	-.116	-.189	-.017	1.000	.130	-.395	-.328
52	-.350	-.208	.115	.405	.049	-.013	.130	1.000	.829	.667
53	-.285	-.262	.144	.368	.085	.002	-.395	.829	1.000	.765
54	-.103	-.109	.460	.570	.328	.044	-.328	.667	.765	1.000
55	.224	.147	-.093	.025	-.245	-.108	.312	-.098	.148	.029
56	.018	.217	-.032	-.171	.217	.307	.069	.179	-.122	-.052
57	-.264	.118	.318	.296	.136	.212	.221	.414	.238	.533
58	-.123	.067	.120	.192	-.059	.122	.301	.145	.203	.458
59	-.146	-.396	.318	.177	-.111	.166	.102	.329	.280	.495
60	-.212	.133	.221	.284	-.066	.115	.181	.548	.327	.503
61	-.376	-.077	.125	.234	-.141	-.077	.171	.567	.344	.568
62	-.287	-.089	.178	.061	-.113	.167	-.030	.131	.380	.455
63	-.408	.083	.275	.210	.027	.160	.216	.325	.151	.478
64	-.139	.006	.167	.153	-.113	.171	.252	.315	.115	.394
65	.300	-.648	.168	.114	.074	.114	.200	.105	.060	.237
66	-.290	-.182	-.103	-.070	-.157	-.045	-.250	.077	.288	.286
67	.225	.008	.131	.103	.087	.180	-.321	-.053	.207	.304
68	.013	-.074	.138	.097	-.015	.118	-.337	.205	.133	.148
69	-.165	-.242	.047	.160	-.127	.003	-.289	.289	.475	.555
70	.270	.091	.176	.124	.088	.213	-.361	.057	.319	.390
71	.042	.165	.042	.017	-.028	.106	-.309	-.063	.195	.249
72	-.018	-.206	.022	-.005	-.061	.101	-.306	-.058	.199	.241
73	.191	-.059	.093	.071	.051	.116	-.309	.074	.182	.264
74	.707	.974	.180	.262	.218	.325	.062	-.139	-.200	-.011
75	.392	.301	.789	.487	.837	.343	-.392	.082	.180	.465
76	.275	.098	.381	.304	.301	.368	.028	.392	.247	.437
77	.282	.187	.615	.155	.873	.308	-.218	.126	-.050	.218
78	.113	.317	.036	.091	.029	.049	-.158	-.128	-.009	-.018
79	.013	.135	-.127	-.954	-.260	-.099	.892	.086	-.524	-.469
80	-.319	-.151	.112	.111	.111	.027	.031	.920	.766	.683
81	-.317	-.359	.141	.418	.168	.075	-.836	.786	.894	.753
82	-.032	-.227	.567	.509	.195	.078	-.325	.648	.721	.919
83	-.045	-.175	.239	.228	.115	.295	-.516	.216	.490	.338
84	.222	.154	.228	-.069	.319	.089	-.012	-.293	-.271	-.143

1	.031	.893	.870	.780							
2	-.019	.876	.895	.510	.922	.901					
3	.102	.837	.701	.696	.831	.692	.771	.785			
4	-.176	.775	.795	.114	.949		.778	.746	.783	.007	
5	-.229	.784	.794	.129	.914		.742	.745	.781	.085	.032
6	-.050	.787	.789	.498	.952	.860	.862	.729	.740	.028	-.059
7	.217	.838	.723	.559	.731	.586	.618	.710	.728	.079	-.155
8	.240	.841	.801	.571	.728	.652	.617	.772	.785	.114	-.105
9	-.065	.073	-.127	.153	.033	-.059	.106	.163	.009	.593	.138
10	-.093	.023	.150	.410	-.018	.224	.095	.217	.168	.584	.380
11	.092	-.023	-.151	-.410	.018	-.224	-.091	-.217	-.168	-.583	-.379
12	-.165	.542	.530	.269	.858	.768	.800	.966	.502	-.106	-.114
13	-.215	.512	.571	.370	.805	.837	.767	.522	.545	.118	.059
14	.089	.245	.105	-.110	.396	.137	.311	.057	.092	-.454	-.361
15	-.050	-.620	-.575	-.084	-.758	-.529	-.519	.385	-.156	.353	.101
16	.026	-.320	-.228	.231	-.476	-.263	-.260	-.072	-.139	.531	.436
17	-.128	-.335	-.446	-.586	-.242	-.114	-.342	-.157	-.135	-.497	-.230
18	.136	.075	.017	-.485	.097	-.105	-.095	-.149	-.043	-.698	-.476
19	-.158	.162	.366	.310	.470	.127	.331	.108	.319	.133	-.057
20	-.091	.280	.229	.070	.218	.267	.027	.152	.097	-.018	-.126
21	.690	.362	.205	.262	.082	-.041	.111	.181	.138	-.015	-.231
22	.303	.276	.153	.385	.201	.034	.372	.258	.222	.046	.168
23	.318	.287	.361	.098	.140	.131	-.000	.252	.295	.109	-.192
24	-.036	.651	.633	.513	.728	.716	.688	.578	.585	.058	.012
25	-.011	.238	.190	.152	.292	.321	.307	.263	.227	.101	.246
26	-.070	.310	.235	.381	.245	.389	.287	.345	.238	.302	.440
27	-.185	-.135	-.238	.085	.001	.061	.130	-.101	-.152	-.011	.312
28	-.019	.056	.086	.128	-.023	-.029	.039	.089	.124	-.110	.027
29	.138	.097	.868	.600	.805	.788	.680	.812	.862	.053	-.083
30	-.001	.808	.864	.541	.761	.788	.618	.809	.854	.074	.020
31	.387	.756	.617	.886	.592	.511	.656	.771	.679	.566	.023
32	-.061	.880	.808	.468	.982	.906	.835	.749	.778	-.009	-.109
33	-.208	.718	.799	.150	.935	.958	.779	.734	.766	.091	.028
34	.159	.766	.679	.576	.900	.758	.815	.673	.670	.039	-.117
35	.006	.596	.601	.572	.784	.801	.763	.686	.687	.181	.094
36	.001	.588	.631	.507	.691	.516	.451	.673	.705	.098	.073
37	.051	.223	.157	.716	.107	.211	.208	.393	.241	.872	.225
38	-.347	-.021	.078	.227	-.013	.208	.017	.119	.112	.406	.421
39	.321	.080	-.093	-.242	.019	-.205	-.012	-.135	-.128	-.115	-.428
40	-.040	.465	.400	.201	.776	.633	.780	.819	.835	-.141	-.209
41	-.241	.374	.418	.286	.699	.723	.678	.847	.860	.110	.046
42	.246	.265	.088	-.070	.391	.106	.350	.029	.047	-.414	-.491
43	-.328	-.179	-.373	.022	-.181	-.301	-.302	-.171	-.214	.352	.441
44	-.291	.285	-.158	.183	-.292	-.091	-.183	.011	-.007	.387	.455
45	.018	-.261	-.128	-.416	-.212	-.376	-.287	-.108	-.439	-.300	-.290
46	.217	.148	.087	-.396	.139	-.077	-.039	-.083	.006	-.648	-.482
47	-.032	.318	.124	.318	.221	.125	.176	.275	.167	.168	-.103
48	-.171	.296	.152	.177	.234	.284	.061	.249	.158	.114	-.070
49	.247	.136	-.052	.111	.066	.114	-.113	-.027	-.143	.071	-.157
50	.307	.212	.122	.166	.115	-.077	.167	.160	.171	-.114	-.045
51	.069	.224	.301	.102	.181	.171	-.030	.216	.252	.200	-.250
52	-.179	.144	.145	.329	.548	.587	.481	.325	.315	.105	.077
53	-.122	.230	.200	.280	.327	.314	.380	.151	.115	.060	.284
54	-.052	.533	.158	.195	.503	.568	.155	.478	.394	.237	.284
55	-.286	-.165	-.191	-.241	-.063	-.085	-.061	-.153	-.141	-.248	.111
56	1.000	.260	.221	.268	.050	.180	.134	.122	.128	.002	-.171
57	.260	1.000	.936	.701	.871	.795	.775	.919	.909	.147	-.041
58	.221	.936	1.000	.603	.835	.868	.704	.909	.919	.104	.021
59	.268	.701	.603	1.000	.533	.518	.680	.796	.682	.698	.191
60	-.050	.871	.835	.533	1.000	.912	.887	.791	.815	.016	-.071
61	-.130	.795	.868	.518	.912	1.000	.766	.797	.816	.146	.041
62	.132	.775	.704	.680	.887	.766	1.000	.715	.739	.109	-.041
63	.122	.919	.909	.796	.791	.797	.715	1.000	.971	.345	.111
64	.128	.909	.919	.682	.815	.816	.739	.971	1.000	.178	.041
65	.002	.147	.104	.698	.016	.146	.109	.345	.178	1.000	.311
66	-.178	-.041	.021	.191	-.071	.041	-.041	.111	.041	.311	1.000
67	-.098	-.082	.105	.059	-.058	-.098	-.010	.041	-.026	.165	.111
68	-.145	.160	.077	.214	.257	.206	.291	.214	.157	.175	.111
69	-.158	.198	.201	.267	.307	.120	.308	.316	.279	.262	.111
70	-.076	.097	-.021	.140	.118	.032	.109	.122	.052	.099	.111
71	-.128	-.071	-.088	.082	-.104	-.081	-.072	.063	.001	.241	.111
72	-.126	-.062	-.066	.103	-.100	-.066	-.059	.086	.032	.252	.111
73	-.132	-.092	-.142	.026	-.111	-.117	-.102	.001	-.066	.208	.111
74	.152	.207	.082	-.318	.202	-.034	.014	-.023	.032	-.577	.111
75	.113	.268	.020	.116	.203	.035	.165	.077	-.013	-.101	.111
76	-.174	.155	.007	.179	.133	.088	.022	.121	.015	.226	.111
77	.489	.166	-.019	.111	-.089	-.198	-.049	.003	-.077	-.046	.111
78	.421	.175	.067	.173	.115	-.128	.293	.102	.137	-.199	.111
79	.170	.151	.233	-.012	.083	.077	-.072	.128	.172	.100	.111
80	-.156	.495	.504	.287	.552	.592	.403	.356	.361	.015	.111
81	-.088	.278	.260	.271	.287	.334	.263	.182	.150	.084	.111
82	-.091	.403	.287	.410	.410	.136	.367	.306	.217	.195	.111
83	-.274	-.186	-.240	.056	-.100	-.130	.011	-.082	-.123	-.016	.111
84	.647	.013	-.062	-.038	-.230	-.258	-.155	-.115	-.148	-.120	.111

	67	68	69	70	71	72	73	74	75	76	77
1	-.085	.182	.170	.072	-.149	-.151	-.143	.370	.255	.182	.015
2	-.137	.131	.234	-.016	-.137	-.124	-.167	.112	.089	.083	-.107
3	.072	.272	.239	.247	-.008	-.013	.004	.234	.374	.356	.160
4	-.070	.218	.309	.098	-.096	-.091	-.106	.166	.066	.097	-.186
5	-.088	.214	.347	.049	-.074	-.061	-.106	-.003	-.038	.039	-.260
6	-.007	.283	.323	.210	-.072	-.071	-.064	.227	.205	.179	-.060
7	-.024	.132	.103	.096	-.085	-.083	-.086	.318	.392	.210	.212
8	-.114	.071	.118	-.025	-.118	-.103	-.154	.139	.210	.088	.094
9	.368	.341	.209	.395	.315	.296	.356	-.035	.404	.528	.221
10	-.153	-.028	.181	-.253	.010	.089	-.081	-.910	-.393	-.174	-.251
11	.154	.029	-.181	.254	-.040	-.088	.082	.910	.394	.175	.251
12	-.057	.303	.350	.196	-.117	-.124	-.099	.197	.111	.061	-.213
13	-.120	.276	.414	.062	-.085	-.070	-.121	-.201	-.088	-.040	-.348
14	.099	.157	.003	.321	-.100	.113	.010	.309	.412	.213	.179
15	.172	-.038	-.021	-.020	.302	.025	.238	-.620	-.259	-.151	-.013
16	.002	-.069	.052	-.167	.184	.228	.071	-.858	-.375	-.191	-.106
17	.264	-.085	-.185	.292	.107	.056	.230	.724	.337	.141	.188
18	-.008	-.103	-.253	.063	-.164	.202	-.065	.915	.240	.036	.113
19	.113	.203	.191	.179	.049	.032	.089	.183	.550	.368	.264
20	-.002	.011	.099	.008	-.079	-.100	-.026	.202	.171	.679	.271
21	-.049	-.094	-.226	-.007	.121	.137	.089	-.221	.572	-.022	.865
22	.211	.252	.153	.330	.175	.176	.169	.112	.251	.397	.228
23	-.287	-.323	-.311	-.331	-.261	.252	-.276	.036	-.380	-.097	-.024
24	-.173	.119	.209	-.030	-.169	-.150	-.218	-.159	.149	.201	.013
25	.065	.275	.351	.175	.090	.113	.051	-.344	.201	.123	.033
26	.534	.558	.632	.552	.182	.160	.508	-.001	.442	.337	.266
27	.388	.456	.395	.418	.325	.320	.312	-.158	.299	.247	.055
28	-.115	-.071	-.025	-.114	-.070	-.078	-.137	-.122	-.022	-.073	-.026
29	.100	.085	.118	.018	-.224	.109	.159	.191	.198	.169	.086
30	-.143	.077	.216	-.066	-.101	-.070	-.172	-.021	.010	.065	-.096
31	-.024	.111	.152	.079	-.043	-.031	-.067	-.106	.187	.223	.239
32	-.079	.224	.281	.119	-.129	-.128	-.127	.235	.178	.126	-.087
33	-.098	.237	.370	.055	-.086	.073	-.116	-.022	.013	.047	-.231
34	-.019	.255	.247	.201	-.121	.124	-.110	.198	.229	.132	.038
35	-.055	.065	.149	-.012	-.006	.026	-.086	-.124	.029	.106	-.019
36	-.086	.041	.147	-.018	-.027	.000	-.115	-.095	-.035	.049	-.089
37	.074	.124	.213	.044	.133	.116	.097	-.509	.049	.310	.065
38	-.111	.082	.212	.215	.096	.148	-.031	-.883	.126	-.207	-.396
39	.113	-.041	.231	.227	-.090	.151	.037	.890	.426	.221	.376
40	-.071	.201	.222	.202	-.161	.170	.111	.260	.241	.065	-.081
41	-.113	.296	.417	.073	-.086	-.077	-.104	.230	.020	-.047	-.300
42	.031	.112	-.085	.275	-.168	.213	.052	.776	.128	.182	.241
43	.141	.055	.126	-.003	.299	.335	.204	-.683	-.358	-.066	-.291
44	.030	.032	.168	-.109	.223	.273	.092	-.798	-.423	-.110	-.311
45	-.225	.048	-.165	.279	.042	-.018	.191	.707	.392	.275	.282
46	.008	.071	-.212	.091	.165	-.206	-.059	.971	.301	.098	.181
47	.134	.138	.047	.176	.042	.022	.093	.180	.789	.381	.615
48	.103	.097	.160	.121	.017	-.005	.071	.262	.187	.804	.151
49	.087	-.015	-.127	.093	.028	.061	.051	.218	.887	.301	.871
50	.180	.118	.003	.213	.104	.101	.116	.325	.343	.368	.301
51	-.321	-.337	-.289	-.361	-.309	-.306	-.309	.062	-.392	.028	-.211
52	-.053	.205	.282	.057	-.063	-.058	-.074	-.139	.082	.332	-.121
53	.207	.438	.475	.319	.195	.199	.182	-.209	.180	.247	-.051
54	.301	.446	.555	.390	.249	.241	.261	-.011	.465	.437	.211
55	.153	.182	.120	.177	.136	.129	.150	.127	-.145	-.144	-.301
56	-.098	-.115	.108	.076	.108	.126	-.132	.152	.113	-.174	.481
57	-.032	.160	.198	.097	-.071	-.062	-.092	.207	.268	.155	.161
58	-.105	.099	.264	-.024	-.088	-.066	-.112	.082	.020	.007	-.011
59	.059	.214	.267	.140	.082	.103	.026	-.313	.116	.179	.111
60	-.058	.257	.307	.118	.101	.100	-.111	.202	.203	.133	-.081
61	-.098	.206	.420	.032	-.081	-.066	-.117	-.034	.035	.088	-.191
62	-.043	.294	.308	.199	-.072	.059	-.102	.011	.165	.022	-.011
63	.044	.214	.316	.122	.063	.086	.004	-.023	.077	.121	.001
64	-.028	.157	.279	.052	.001	.032	-.066	.032	-.013	.015	-.071
65	.165	.175	.262	.099	.241	.252	.208	-.577	-.104	.226	-.041
66	.791	.776	.809	.680	.891	.910	.824	-.188	-.190	-.123	-.181
67	1.000	.907	.747	.948	.971	.955	.992	.089	.171	.086	.041
68	.907	1.000	.882	.951	.890	.881	.899	.055	.159	.041	-.071
69	.747	.882	1.000	.759	.779	.782	.758	-.213	-.007	.030	-.221
70	.948	.951	.759	1.000	.879	.856	.917	.144	.270	.114	.041
71	.971	.890	.779	.879	1.000	.998	.985	-.157	.017	-.015	-.051
72	.955	.881	.782	.856	.998	1.000	.971	-.203	-.021	-.042	-.081
73	.992	.894	.758	.917	.985	.971	1.000	-.038	.110	.058	.001
74	.089	-.055	-.213	.144	-.157	-.203	-.038	1.000	.423	.238	.231
75	.171	.159	-.007	.270	.017	.021	.110	.423	1.000	.442	.781
76	.086	.041	.030	.114	-.015	-.042	.058	.238	.442	1.000	.151
77	.046	-.071	-.221	.041	-.058	-.081	.008	.234	.780	.154	1.000
78	.194	.172	-.002	.276	.123	.123	.122	.299	.289	.151	.241
79	-.266	-.318	-.324	-.314	-.247	-.246	-.245	.070	-.471	-.184	-.151
80	.036	.264	.343	.111	.031	.010	.016	-.102	.170	.283	-.001
81	.292	.457	.506	.381	.298	.305	.275	-.212	.229	.273	.001
82	.230	.360	.317	.320	.158	.144	.189	-.008	.607	.415	.311
83	.303	.329	.307	.346	.283	.286	.269	-.104	.231	.271	.001
84	-.116	-.225	-.283	-.150	-.159	-.169	-.131	.118	.323	-.124	.611

	78	79	80	81	82	83	84
1	.107	.168	.190	.181	.336	-.177	-.077
2	-.052	.210	.541	.220	.304	-.255	-.131
3	.296	.037	.458	.274	.160	.072	-.043
4	.006	.192	.487	.168	.303	-.124	-.248
5	-.101	.214	.509	.193	.281	-.159	-.281
6	.178	.092	.473	.209	.385	-.035	-.177
7	.144	.007	.368	.176	.345	-.112	.092
8	.051	.086	.404	.187	.265	-.222	.061
9	.227	-.268	.006	.152	.357	.404	-.102
10	-.395	.013	.173	.185	.035	-.071	-.081
11	.395	-.014	-.173	-.185	-.034	.072	.081
12	.085	-.004	.415	.198	.301	.048	-.267
13	-.125	.026	.482	.271	.272	-.019	-.300
14	.422	-.058	.020	-.065	.163	.146	-.031
15	-.158	-.199	-.424	-.136	-.243	.205	.029
16	-.241	-.116	-.180	.012	-.142	.100	.023
17	.229	-.081	-.305	-.237	-.098	.122	-.001
18	.262	.115	-.144	-.246	-.165	-.151	.097
19	-.020	-.317	.472	.384	.564	.178	-.022
20	-.110	-.281	.579	.559	.583	.175	.052
21	.293	.037	-.046	-.039	.227	-.182	.740
22	.825	-.123	.143	.241	.168	.364	.130
23	-.062	.904	-.065	-.371	-.431	-.606	.205
24	.020	-.090	.749	.567	.551	.081	-.083
25	.182	-.673	.471	.648	.582	.484	-.107
26	-.041	-.545	.310	.501	.783	.376	-.081
27	.256	-.752	.234	.504	.381	.840	-.064
28	.158	-.376	.224	.379	.078	.575	-.110
29	.188	.074	.533	.333	.343	.032	-.058
30	.042	.049	.605	.410	.304	.050	-.202
31	.193	.180	.262	.144	.334	-.076	.177
32	.085	.164	.511	.203	.348	-.137	-.175
33	-.103	.159	.582	.280	.349	-.128	-.272
34	.266	.102	.384	.156	.317	-.096	-.035
35	.145	-.134	.367	.331	.217	.313	-.153
36	.151	-.108	.373	.317	.162	.272	-.211
37	-.089	-.066	.112	.173	.315	.154	.019
38	-.404	-.158	.286	.334	.059	.151	-.332
39	.391	.137	-.277	-.322	-.044	-.128	.298
40	.108	-.020	.366	.169	.311	-.014	-.132
41	-.182	-.055	.499	.329	.334	.023	-.272
42	.406	.024	-.040	-.142	.096	-.025	.101
43	-.122	-.342	-.229	.024	-.188	.418	-.264
44	-.154	-.294	-.044	.145	-.125	.361	-.314
45	.143	.013	-.349	-.317	-.032	-.045	.222
46	.317	.135	-.154	-.259	-.127	-.175	.154
47	.036	-.427	.112	.141	.567	.239	.228
48	-.084	-.354	.414	.418	.509	.228	-.069
49	.029	-.260	.111	.168	.495	.116	.549
50	.849	-.099	.027	.075	.078	.295	.089
51	-.158	.892	.034	-.336	-.325	-.516	-.042
52	-.128	-.086	.920	.786	.648	.216	-.293
53	-.009	-.524	.766	.894	.721	.490	-.271
54	-.018	-.469	.683	.753	.919	.338	-.143
55	-.281	-.186	.014	.107	-.030	.211	-.055
56	.421	.170	-.156	-.088	-.091	-.274	.647
57	.175	.154	.495	.278	.403	-.186	.018
58	.067	.233	.504	.260	.287	-.240	-.062
59	.173	-.012	.287	.274	.410	.056	-.038
60	.115	.083	.559	.287	.410	-.100	-.230
61	-.128	.077	.592	.334	.436	-.130	-.258
62	.293	-.079	.403	.263	.367	.011	-.155
63	.102	.128	.356	.182	.306	-.082	-.115
64	.137	.172	.361	.150	.217	-.123	-.148
65	-.199	.100	.015	.084	.195	-.016	-.120
66	-.016	-.192	.164	.394	.169	.280	-.180
67	.194	-.266	.036	.292	.230	.303	-.116
68	.172	-.318	.264	.457	.363	.329	-.225
69	-.002	-.324	.343	.506	.417	.307	-.283
70	.276	-.314	.111	.331	.320	.346	-.153
71	.123	-.247	.034	.298	.158	.283	-.159
72	.123	-.246	.040	.305	.144	.286	-.149
73	.122	-.245	.016	.275	.189	.269	-.131
74	.299	.070	-.102	-.212	-.008	-.104	.118
75	.289	-.471	.170	.229	.607	.231	.323
76	.151	-.184	.283	.273	.415	.271	-.124
77	.264	-.167	-.058	.016	.330	.064	.693
78	1.000	-.143	-.061	.043	.006	.238	.082
79	-.143	1.000	-.114	-.446	-.510	-.652	.111
80	-.061	-.114	1.000	.878	.669	.166	-.209
81	.043	-.446	.878	1.000	.727	.410	-.183
82	.006	-.510	.669	.727	1.000	.388	-.116
83	.238	-.652	.166	.410	.388	1.000	-.224
84	.082	.111	-.209	-.183	-.116	-.224	1.000

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