CHANGING PATTERNS AND DETERMINANTS OF INTERNAL MIGRATION IN GUJARAT, 1971 AND 1981

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

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CERTIFICATE

Certified that the dissertation entitled " CHANGING PATTERNS AND DETERMINANTS OF INTERNAL MIGRATION IN GUJARAT, 1971 AND 1981" submitted by NARESH KUMAR is for the award of the Degree of MASTER OF PHILOSOPHY of this University.

This dissertation has not been previously submitted for any other degree of this University or any other University, and is his own work.

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

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C O N T E N T S

		PAGE NO.
ACKNOWLEDGEMENT		
LIST OF TEXT TABLES		iv-v
LIST OF MAPS		vi
CHAPTER I		
INTRODUCTION		1
1.1.	Theories of Migration	2
1.2	Push and Pull Factor in Migration	7
1.3	Approaches in Migration Studies	9
1.4	Causes and Consequences of Migration An Overview	11
1.5	Migration and Regional Development	22
1.6	Migration and National Development	24
1.7	Objectives of the Study	26
CHAPTER - II		
AREA;DATA AND METHODOLOGY		
2.1	Selection of the Study Area	27
2.2	General Introduction	30
2.2.1	Location	30

2.2.2	Physiography	30
2.2.3	Climate	32
2.2.4	Soils	35
2.2.5	Vegitation	36
2.2.6	Mineral Resources	37
2.2.7	Socio Economic Attributes	37
2.2.7.1	Population	37
2.2.7.2	Urbanisation	39
2.3	Data & Its Sources	41
2.3.1	Variables on Migration	43
2.3.2	Variables on Developmental Indicators	48
2.4	Methodology	51

CHAPTER III

PATTERN OF INTERNAL MIGRATION IN GUJARAT IN 1971 AND 1981

3.1	Internal Migration Patterns in Rural Areas	55
3.1.1	Rural in Migration	55
3.1.2	Rural Out Migration	60
3.1.3	Rural Net Migration	64
3.2	Migration Patterns in Urban Area	74
3.2.1	Urban in Migration	75
3.2.2	Urban out Migration	80
3.2.3	Urban Net Migration	84

CHAPTER IV

RURAL AND URBAN DEVELOPMENT IN GUJARAT A SPATIO - TEMPORAL ANALYSIS 94

4.1 Rural Development Indicators 97

4.2 Urban Development Indicators 107

CHAPTER V

DETERMINANTS OF RURAL AND URBAN MIGRATION IN GUJARAT IN 1971 AND 1981 114

5.1 Determinants of Migration in Rural area 1971 and 1981 115

5.1.1 Determinants of Rural in Migration 1971 and 1981 115

5.1.2 Determinants of Rural out Migration 1971 and 1981 134

5.1.3 Determinants of Rural Net Migration 1971 and 1981 143

5.2 Determinants of Migration in Urban Area 1971 and 1981 147

5.2.1 Determinants of Urban in Migration 1971 and 1981 147

5.2.2 Determinants of Urban out Migration 1971 and 1981 163

5.2.3 Determinant of Urban Net Migration 1971 and 1981 173

CHAPTER VI

SUMMARY AND CONCLUSION 176

BIBLIOGRAPHY 185

LIST OF TAXT TABLES

S.NO.	TITLE	PAGE NO
2.1	Internal Migration in India 1981	28
3.1	Districtwise Rural in Migration rates Gujarat - 1971	56
3.2	Districtwise Rural in Migration rate Gujarat 1981	59
3.3	Rural out Migration rates in Gujarat 1971	61
3.4	Rural out Migration rates in Gujarat 1981	63
3.5	Districtwise Rural Net Migration rates in Gujarat 1971	65
3.6	Districtwise Rural Net Migration rates in Gujarat 1981	67
3.7	Districtwise Urban in Migration rates in Gujarat 1971	76
3.8	Districtwise Urban in Migration rates in Gujarat 1981	78
3.9	Districtwise Urban out Migration rate Gujarat 1971	81
3.10	Districtwise Urban out Migration rate Gujarat 1981	83
3.11	Districtwise Urban net Migration rates in Gujarat 1971	85
3.12	Districtwise Urban net Migration rates in Gujarat 1981	89
4.1	Rural Development indicators in Gujarat 1971	96
4.2	Rural Development indicators in Gujarat 1981	98

4.3	Urban Development Indicators in Gujarat 1971	106
4.4	Urban Development Indicators in Gujarat 1981	108
5.1	Correlation co-efficient between rural in migration and rural development indicators Gujarat 1971	117
5.2	Correlation co-efficient between rural in migration and rural development indicators Gujarat 1981	119
5.3	Correlation co-efficient between rural out migration and rural development indicators Gujarat 1971	135
5.4	Correlation co-efficient between rural out migration and rural development indicators Gujarat 1981	137
5.5	Correlation co-efficient between rural net migration and rural development indicators Gujarat 1971	144
5.6	Correlation co-efficient between rural net migration and rural development indicators Gujarat 1981	146
5.7	Correlation co-efficient between urban in migration and urban development indicators Gujarat 1971	149
5.8	Correlation co-efficient between urban in migration and urban development indicators Gujarat 1981	151
5.9	Correlation co-efficient between urban out migration and urban development indicators Gujarat 1971	165
5.10	Correlation co-efficient between urban out migration and urban development indicators Gujarat 1981	
5.11	Correlation co-efficient between urban net migration and urban development indicators Gujarat 1971	172
5.12	Correlation co-efficient between urban net migration and urban development indicators Gujarat 1981	174

LIST OF MAPS

S.NO.	TITLE	PAGE NO
2-A	Location of Gujarat District Boundaries	29
2-B	Relief and Drainage	31
2-C	Soils	34
3-A	Rural Net Migration Rural to Rural 1971	69
3-B	Rural Net Migration Rural to Rural 1981	70
3-C	Rural Net Migration Urban to Rural 1971	72
3-D	Rural Net Migration Urban to Rural 1981	73
3-E	Urban Net Migration Rural to Urban 1971	86
3-F	Urban Net Migration Rural to Urban 1981	87
3-G	Urban Net Migration Urban to Urban 1971	90
3-H	Urban Net Migration Urban to Urban 1981	91

CHAPTER - I

INTRODUCTION

The importance of migration in affecting the growth and decline of population and in modifying the demographic characteristics of the areas of origin and destination has long been recognized. The selectivity of in and out-migration with particular demographic, social and economic characteristics will affect not only the size but also the composition of population. Thus, the movement from one place to another is a component not only of population growth but also the change in the composition.

Internal migration is an important process, that has contributed significantly to the other processes, like urbanisation, industrialization, population redistribution, economic development, cultural diffusion and social integration.

Keeping in view the above, in the present study an attempt has been made to study the migration in relation to some of the variables which affect it.

Before understanding the migration and its determinants it will be extremely useful to look into various theoretical aspects related to the causes and consequences of internal migration.

1.1 Theories of Migration:

The social scientists have been trying to enquire into the basic causes that lead to the movement of population from one place to another and they have put forward a number of theories, models and explanations in this connection. Following an extensive empirical enquiry on internal migration first in Britain and later in twenty other countries, Ravenstein published two seminal papers in 1880s in which he postulated his 'laws of migration' (Revenstein, 1885, 1889) which still stand the test of time. The statements, he has made, are summarised in the following paragraph.

Firstly, the rate of migration between two points will be inversely related to the distance. Secondly, the inhabitants tend to move first towards nearby towns and eventually gravitate towards the most rapidly growing cities. Thirdly, there are streams and counter streams of migration. Fourthly, in internal migration streams will normally have a rural to urban predominence. Fifthly, technology, communication and migration have a close associations. Finally, the economic motives in migration is dominated.

Stoujjer[1] has pointed out that the obstacles intervening between origin and destination influence the flow of migration.

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1. Stouffor S.A. (1940), "Intervening Opportunities", a theory relating mobility and distance", American Sociological Review, Vol. 5, pp. 845-57.

Zipf[2] theorized that migration between two places was directly proportional to the product of the population of these two places and inversely proportional to the distance between them.

Against the gravity model several researchers have pointed out that migration to a place varies accordingly to its socio-economic cultural and other factors rather than its absolute size.

The first comprehensive model of development to the process of rural-urban labour transfer was the one developed by Lewis[3] and later extended by the Ranis and Fie.[4] The combined structure is known as the L.F.R. model. The model considers migration as equilibrating mechanism which through transfer of labour from the labour-surplus sector to the labour deficit sector, bring about equality between two sectors. The model is based on a concept of dual economy comprising a subsistence, agricultural sector (rural) characterized of unemployment and under-employment and a modern industrial sector (urban) characterized by full employment.

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2. Zipf George K. (1946b) "The P_1P_2/D Hypothesis on the inter-city movement of persons", American Sociological Review, Vol. 11, Dec. PP 677-686.

3. Lewis, W.A. (1954), "Economic development with unlimited supplies of labour", The Manchester School, Vol. 22, pp. 139-192.

4. Ranis, G. and Fei J.C.M. (1961), "A theory of economic development". American Economic Review. Vol. 51. No-4.Sep..

Despite the simplicity of Lewis's model (Lewis, 1954), several observers have found it unsatisfactory from the view point of analysing the causes and consequences of migration in developing countries.[5] In the first place, migration is not induced solely by unemployment or under employment in the rural areas although there is no doubt that this is an important factor in the decision to migrate. Secondly, the rate of growth of modern industrial sector has been lately too low in many developing countries to permit such development as formulated by Lewis.

Lee[6] has returned to the same theme as stated by Ravenstein in his law's of migration. On the basis of migration's laws Lee has developed a series of hypothesis about the volume of migration under varying conditions the development of streams and counter streams and the characteristics of migrants. A sample of most important of these is summarized below.

The volume of migration within a given territory varies directly with the degree of diversity of areas, with the diversity of people and inversely related to the difficulty surmounting the intervening obstacles. The magnitude of the "net" stream (i.e. stream minus counter stream) will be

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5. Das Gupta B. (1979), "Migration and rural development", Land Reforms, Land Settlement and Co-operatives, No. 1 (Rome F.A.O.), Pp. 23-34.

6. Lee E.S. (1966), "A theory of migration", Demography, Vol. 3, No.1, Pp. 47-57.

directly related to the preponderance of minus factors. He divides the forces exerting influence on migrants perception into "pluses" and "minuses". The former pull individual towards them, the latter tend to drive them away. There are "zeros" also in which competing forces are, more or less evenly balanced.

Lee's general theory of migration is of limited help for policy analysis in developing countries because of its high degree of generality and the interdependence of many of its hypothesis. More important, the apparent validity of many of the hypothesis does not lead us to determine which plus factors and which minus factors at both origin and destination are quantitatively most important to different groups and classes of people. In short, by not specifying the interrelationships between dependent and independent variables within the context of a rigorous theoretical framework, Lee's theory of migration and indeed most other non-economic social science migration models offer little practical policy guidance for decision makers in developing nations.[7]

Todars's model of rural-urban migration suggests that the decision to migrate includes perception by the potential migrant of an "expected" stream of income that is a function of both the prevailing urban wage structure and subjective

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7. Todaro Micheul P. (1976) "Internal migration in developing countries, a review of theory, evidence, methodology and research priorities", Internation Labour Organisation (L.L.O.) Geneva, Pp. 19.

probability of obtaining employment in the urban modern sector.[8] The probability of obtaining an urban job is inversely related to the urban un-employment rate. Migration rates in excess of urban job opportunity, causing a high rates of urban unemployment are inevitable outcomes of the serious imbalances of economic opportunities between urban and rural areas of most underdeveloped countries.[9]

Todaro's formulation assumes that all potential migrants have equal information about the urban labour market as well as equal excess to urban jobs, which is not true, in all times.

Another weakness of Todaro's model is its assumption that potential migrants are homogeneous in respect of skill and attitudes and that they have complete information for working out the probability of finding a job in urban modern sector.

Lastly, the major short coming of income differential models in general is that they are partial, since they do not emphasize the role of non-economic factors in the mobility decision.

Amongst theoretical frameworks, consider internal migration in terms of costs and returns on investment in the

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8. Todaro (1976), Op. cit., p. 35.

9. Ibid; p. 36.

human capital.[10] The costs of investment, such as moving costs, earning foregone, while searching and training for a new job and psychic costs such as homesickness must be compared with the returns such as expected better earnings, better living conditions etc. These favouring the human capital approach to migration argue that individual will migrate if the net present value of discontinued net benefits i.e. earning minus migration costs is positive and that the migrant will move to the location where the net return from the migration is highest.

1.2 Push and pull factors in migration:

The causes of rural to urban migration differ from country to country and from region to region, depending on both the characteristics of both the population of rural origin and urban destination. The causes of migration are usually classified into two sets : "push" and "pull" factors. Bogue[11] has considered these push and pull attributes of communities of origin and destination as independent migration variables which account for selectivities of certain groups. Lee[12] has discussed a pull and push factor in relation to

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10. Sjaastad L.A. (1962), "Costs and returns of human migration", Journal of Political Economy, Vol. 70, Part-2, Pp. 80-93.

11. Bogue D.J. (1959), "Internal migration" in Houser P.M. and Duncon O.P., The Study of Population : An Inventory and Appraisal, Chicago, Pp. 486-509.

12. Lee E.S. (1966), Op. cit; Pp. 53-57.

distance and intervening opportunities. According to Bogue three groups of variables can be identified i.e. socio-economic conditions affecting migration (major capital investment, technological change, migration regulations social provisions etc.) migration stimulating situations (such as graduation) marriage, employment offer, natural disaster) and factors instrumental in choosing a destination (e.g. cost of moving, presence of relatives and/or friends, special employment opportunities, hearsay information).[13]

In relating to push and pull factors Hassan[14] pointed that those who migrate due to 'pull' factors find it relatively easy to adjust to urban life compared these who migrate due to 'push' factors.

The push and pull hypothesis has proved to be useful device for listing all the factor affecting a given migratory movement and has produced lucid and convencing expositions of the underlying factors in migration. The approach by itself, however, does not lead to any theory, and some have questioned the adequacy of its basic concepts. The forces of accumulated push and pull factors can be so overwhelming that it neglects to make a clear reply some people migrate and some do not. The use of Lee's conceptual framework which incorporates push and pull factors both at the place of origin and destination would overcome this limitations.[15]

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13. Bogue D.J. (1959), Op. cit; Pp. 499-500.

14. Hassan, Riaz (1971), "Rural-urban migration and

Another difficulty with push and pull analysis emerges when an attempt is made to characterize the combined effect of all the factors as predominantly either push or pull. Some scholars have avoided this kind of difficulty by observing that many push and pull factors can be noted into pairs, each pair representing two different values of one single variable. Thus Harrick (1965) unifies the push and pull hypothesis of lower rural and higher urban income into one in which urban migration is a function of expected rural-urban income differences.

Similarly Kuznets and Thomas (1967) speak of differential economic opportunities to explain push and pull hypothesis.

1.3 Approaches in Migration Studies

There are two basic approaches to migration studies - migration stream and migration differential. Migration stream attempts to explain the volume and pattern of movement from one place to another. It is based on an assumption that a group of migrants will have a common origin and destination in a given period. The term "stream" is used to refer to the movement between two geographical areas, but it may also be used to describe the movement between two types of residence areas, such as between rural and urban areas. The migration stream can be studied by a range of theoretical models which may be classified under following three sets:-

(i) The studies mainly concerned, with explaining where people move in terms of spatial distance. The

important studies related to this type of model are (Revenstein 1885 and 1889), (Zipf 1946b), (Bogue and Thompson 1949), (Nelson 1959) etc. All these models have some theoretical justification and practical utility.

(ii) The studies based on the assumption that migrants move to take advantage of better facilities. This process is termed as optimation and usually expressed in terms of either greater opportunities or place utility. Important studies related to this type of model are (Stouffer 1940), (Bright M and Thomas D.S. 1941), (Speare 1971) etc.

(iii) In the study of migration stream the individual information field defined as measures of the tendency to communicate over distance are valuable for stimulating the movement of people and ideas. In the Indian context based on such model, the important study was made by Mukherji (1979).

No single model whether a gravity model, opportunity model or that of any other type is by itself sufficient to explain migration from one place to another. There are the factors like socio-economic demographic and cultural, circumstances of community - over time and space always determine the norms, and influencing the pattern and volume of migrants and caused variations in them.[16]

16. Pryor R.J. (1975), "Conceptualizing migration behaviour; a problem of macro-demographic analysis", In Kosinski L.A. and Webb, J.W., Population at Micro Scale,

The second approach to the study of migration is the study of migration differential. It relates to certain persons or groups characterized by such factors as age sex, class, marital status, caste and social status. Migration differentials by socio-economic, demographic and cultural factor vary from country to country and even within a country or place of study (e.g. rural or urban). According to scale of investigation (micro or macro) the type of data used (census, registration, and sample surgery and definition and measurement of variables by which differential are studied. The important studies concerned to differential migration are (Zachariah 1968), (Coldwell 1968), (Bogue 1969), (Rels J.R. 1969), (Narah 1972), (Chapman 1975), (Premi 1986).

1.4 Causes and Consequences of Migration : An Overview

"Migration consists of a variety of movement that can be described in the aggregate as an evolutionary and development jostering process, operating in time and space to correct rural-urban, inter-rural, inter-urban and inter-regional imbalances. It also may spread information when migrants are more skilled than those living in the regions of destination, and it may break the cake of custom enveloping migrants and make the latter a dynamic force."[17]

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17. Plummer A. (1932), "The theory of population, some questions of quantity and quality", Journal of Political Economy, Vol. 40; Pp. 617-637.

The migration is an equalibrating process serving to improve relations between man and his physical environment or to reduce disparities between communities or regions in different stages of development or to give rise to an increase in the overall development of a region or a country.

Migration is voluntary movement. Socio-cultural and factors like geographical, economical and social are crucial in making the migrant's decision to move.

When the migrants move from a region, they also have a preconceived idea. They estimate the various costs and determine prospective returns over costs. The migrants also influenced by development of transportational infrastructure. Higher the transportational infrastructure higher will be the internal migration level.

Internal migration in a country can be studied in terms of rural to rural, rural to urban, urban to urban and urban to rural.

One of the direct consequences of rural to urban migration is rapid growth of urbanisation.

Most of the literature on internal migration is related to rural to urban migration stream i.e. the determinents of migration in the areas of origin (rural) and areas of destination (urban). However there are a limited number of studies so far related to rural to rural, urban to rural and urban to urban migration streams.

Davis[18], based on 1931 census data, for the first time made a brief analysis of internal migration in India and noted the general immobility of India's population. The major analysis in the fields of internal migration in India have been done at the state level from the birth place statistics.

The study of internal migration in the Indian sub-continent during 1901-31 and 1941-51 in order to measure and describe its magnitude, assess its contribution and indicate areas of population gain and loss (Zachariah, 1960, 1964).

Another study based on census data by use of extensive cross-tabulation of migrants by socio-economic characteristics and analysis of factors associated with migration by methods of migration differentials is the study of Greater Bombay.[19] The distinguishing feature of the study is the detailed tabulation of migrants by education attainment employment status, occupation and state of birth for rural and urban areas separately. The analysis through a considerable light on the consequences of migration in terms of its effects on supply of labour and skills on the occupational composition

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18. Davis K. (1951), "The population of India and Pakistan", pp. 107-23, Princeton.

19. Zachariah K.C. (1968), "Migration in Greater Bombay", Asian Publishing House, Bombay.

of labour force and on the demographic factors of city population. Similarly, the other aspects of migrants have been studied like the length of time a migrant has been in the city. The effects of his earning capacity, educational attainment and type of job and so on.

Using the census data Eldridge and Thomas (1964) have analysed the factor associated with migration with the help of temporal correlation. The estimates of migration were obtained from together with the age-sex characteristics, were used in analysis of the interrelationship between migration and economic change. A general hypothesis underlying the study was that migration responds positively to variations in economic activity and that variations in economic activity are identifiable with the variations in economic opportunities. Supporting the evidence of close interrelationship between migration and economic change was given on the basis of age-sex differential the rate of displacement due to migration in prosperous and depressed decade and cohert analysis.

Other studies on internal migration based on census data, analysing the factor associated with migration are (Sjaastad 1961), (Beals 1967) and (Sahota 1968) on the United States, Ghana and Brazil respectively. These above three studies used migration data from single census on the basis of most widely used questions. The models used in these three studies are formulated in the framework of economic costs and returns from migration. The explanatory variables

ncluded, education, urbanisation, density, distance, wages, ncome etc. The studies found that distance is a strong eterrent to migration, and hypothesized that distance roxies to a significant extent for the costs of migration. igration is found to be highly responsive to earning or ncome differentials between the origin and destination areas.

Education is found to be an important factor promoting igration by influencing other variables conducive to migratio ut in Ghana study[20] negative correlation between migration nd education was obtained. This is a very important finding rom the point of view of research in the case of other eveloping countries.

The data on rural urban origin of migrants and the uration of residence at the place of enumeration was collecte or the first time in 1961. Based on these data Mittra (1967) ade a detailed analysis of the internal migration in India. osal (1962) studied the internal migration based on 1961 ensus data. He gave a geographical perspective to the roblems of migration in India. He derived his analysis on ie basis of emerged migration pattern from the district wise ap which he has prepared on all India level. He found out ie causes of in and out migration. In the same analysis

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). Beals R.F., Levy M.B. and Mosses L.N. (1967), "Rationality and migration in Ghana", Review of

he made the further improvement based on 1961 census.[21] In this study he pointed out the magnitude of migration in different streams of migration i.e. Rural to Rural, Rural to urban, urban to urban, urban to rural and depicted the areas of in and out migration.

There are several micro level village studies among these Eames (1954), rural to urban migration from a village Madhopur in North India Yashwant (1962) rural out migration on the basis of survey of 4 villages in the district of Ram Nath Puram, T. Nadu. Podki (1964) concentrated on out migration pattern from the Konkon village of Maharashtra. All these studies have concluded that the landlessness, small size of holding, impoverishment of rural artisans due to cheap urban product,lower wages in rural areas and education are responsible for out migration from rural areas. Gupta (1961) his study of out migration from the villages of Punjab analysed the relationship between the socio-economic status of family and out migration from rural to urban areas. The result of his study shows that higher the status of particular family lower is the tendency among its members to out-migrate. Through the above conclusion he supports his hypothesis which says that propensity to out migrate is inversely related with the status of family.

Das Gupta and Laishley (1974) studied the rural out-migration by considering 40 villages from the seven states

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21. Gosal G.S. and Krishan C. (1975) "Pattern of internal migration in India", In Kosinski A. (eds), "People on Move, studies on internal migration, Metheun and Co. London, Pp. 193-205.

of India, the main factors which have been considered in the study are social, economic and demographic and the status of the migrants. In the study they derived the conclusion that it is the unequal distribution of resources in the village, which is the key factor in inducing migration. They further concluded that it is not necessarily the land less or poorest who migrate from the village, the migrants are also large size farmers.

Greenwood's[22] regression analysis of migration in urban areas, concluded that migration occurs on the both sides of scale, poor and rich both migrate from rural areas. In terms of causes of migration he says that economic factors such as transportation costs, income and job opportunities are very important in migrants decision to migrate to the city. Rural migrants were found to be migrated to rapidly growing cities.

There are number of other factors which determine rural-urban migration. Essang and Mabawonku (1974) have found that age of rural family, educational level of the migrant, distance between the migrant's village and urban centre, rural-urban earning differentials and availability of relatives in urban centres as significant explanatory variables in the migration process of the village level

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22. Greenwood M.J. (1971), "Regression analysis of migration to urban areas of less development countries : The case study of India", Journal of Regional Science, U.S., Vol. 11, August, Pp. 253-62.

studies. According to Oberai (1975) studying the characteristics and determinents of in migrants in the city of Greater Khartoum, Sudan, populatic on pressure, lack of job opportunities and low incomes were the dominant "push" and higher average annual earnings, job availability, better education, low cost of migration, presence of friends and relatives etc were the dominants among the "pull" factors.

Brigg (1971) suggests that educated migrants are primarily attracted by the "pull" factor at the place of destination, whereas the illiterate migrants are primarily forced out by the 'push' factor at the place of origin. Similar results were found by Lipton (1980) who concluded that most of the migrants in Third World Countries originate because the very poor landless and illiterate are predominently 'pushed' from villages, relatively well-off better educated are likely to be "pulled" by urban centres providing attractive economic opportunities.

Empirical studies dealing with rural-urban migration particularly in most developing countries support the hypothesis that the most migrants are economically motivated. But the non-economic reasons have also been reported. Kosinski (1975) in his study of interregional migration in East Central Europe, observed the reasons for moving as reported by individual themselves indicate that non-economic factors like maladjustment in the present community, lack of an offer of marriage and the presence of friends and relatives

at another location plays an important role in motivating people to migrate.

Several development activities like construction of roads connecting many villages to nearby towns, advent of wide spread use of mass media like T.V., radio and mobile cinema etc sometime also operate as push factors, because the rural folks become aware of their economic and social drawbacks. (Yadava, 1986).

Differences with the head or member of household have also been reported as a cause of migration in some of the Indian studies on rural urban migration. Xaxa (1986), in his study on the plantation labourers in North East Indian states has reported, conflict in the family as one of the major reason for migration.

ılsara (1964) R.P.C. surveys related to the cities of Sikandrabad, Hydrabad, Hubli, Baroda, Jamshedpur, Kanpur, Poona, Gorakhpur, Lucknow and Surat, and made a comparative analysis in terms of causes characteristics and pattern of migration. He draws a conclusion that unsatisfactory economic conditions in their places of origin make the largest single push factor, towards cities. The other important factor is dependent and transfer of employees in public and private sector. The other conclusion which he has derived that certain caste communities and linguistic group migrate with their common folk more than other. In his study, he further indicates that industrial cities attract a large proportion of in migrants total

population than non industrial cities. In terms of educational level of migrants he indicates that majority of them are illiterate.

In terms of out migration from urban areas Premi[23] analysed the nature, causes and characteristics of migrants along with the channels and sources of information about potential job opportunities. In this study he pointed out that the sources of information i.e. friends and relations, previously out-migrated from these towns were instrumental both in providing information and in helping in their initial adjustment. So it is clear that urban out migrants follow the same pattern as of rural out migrants. The study also shows that a major portion of movers arrived at their present place of destination directly in one move instead of steps.

In urban to urban migration stream migrants generally move from small towns to metropolitan cities or toward other class one cities. In the small towns, their economic base does not give the job opportunities and here the conditions develop as a push factor, therefore, migrants start thinking to shift towards large metropolitan areas of the country, because job prospects are better than in the smaller towns.

There are the three variables namely, employment, income and rapid population growth, determine the extent and

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23. Premi M.K. (1976), "Urban out-migration its pattern and characteristics of the out-migrants" Occasional Paper, C.S.R.D., J.N.U., New Delhi.

the pattern of migration flows. Migrants flow from areas where employment opportunities are stagnant, low income and rate of population growth is high. Conversely, they are attracted to areas of new industrial development, regions of high per capita income, and areas where the disparity between birth and death rates is less.[24] Whereas in the areas of out migration, the age distribution of population undergoes a shift showing a depression in the working age groups and through this there will be a lower birth rate of the community and since, there are move of young children and aged people the death rate is comparatively high in the migration origin areas. (Beale 1969).

Rural to urban migration in India has had a profound impact on the nature of urbanization and economic development (Davis 1975). It provides a great source of cheap labourers for the industries in cities and changes in the occupational structure of the household in villages (Singh, 1982). Several Indian studies have found that absence of males in the villages who are of working age group affect the agricultural production system.[25] Due to male out migration caused a higher sex-ratio[26] in rural areas (out-migration) and low sex ratio in urban

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24. Bogue Donald, J. (1966) "Internal Migration with special reference to rural-urban movement", Medirators Statement, World Population Conference, 1965, Vol. 1, Summary report, United Nations, Department of Economic & Social Affairs, P. 164.

25. Mishra B.D. (1982) "An Introduction to the study of population", South Asian Publishers, New Delhi, pp. 224-53.

26. Sex-ratio has been computed in the present study number of females per 1000 of males.

areas (in migration). Migration also influences fertility through changes in the level and distribution of income, education and occupation and by altering the age structure of rural and urban population.[27]

There have been a number of migration studies in India conducted at different parts of country, finding of studies vary from north to south and east to west depending on the place of study (rural or urban) scale of investigation (macro micro) type of data used (census or sample survey) and definition and measurement of variables by which differential studies. For India, a large country with a complex heterogeneity in every aspects of socio-economic and environs life, any regional study of characteristics of migrants has its own importance at least for local or state level developmental policies.

1.5 Migration and Regional Development :

Internal migration and regional development are not in the direct one to one correspondence, instead, the stage of societal development acts as an intervening variable. It is only in the early stage of development that internal migration is likely to be related to rising regional

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27. Pathak K.B. (1986), "Migration and fertility some emerging issues", paper presented at the national seminar on migration research in context of development, 9-11 August, B.H.U. India.

disparities. According to Williamson[28] whether, migration related to regional disparity is largely determined by the stage of development of the society as a whole. Rising regional inequality is typical of early stages of development while regional convergence is found at the more mature stage of development.

There is a relationship among migration, urbanisation and economic development. Such type of relationship is only applicable on developed countries, and equally not applicable in the case of developing countries due to their low performance in the economic activities. Therefore, in most of the cases migration seems to be a problem rather than economic stimuli and migration of unskilled labourers from rural areas is generally associated with growing urban unemployment and under employment. Due to slow pace of industrialization in developing countries, rural urban migration seems to be not very encouraging unlike the developed countries. The contribution of migrants, therefore, in the process of economic development is also limited in developing countries. Migration widen the regional inequality based on age-selectivity and handicap, the over all economic development[29]. A realistic policy and proper implimentation is necessary for reducing the regional disparities.

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28. Williamson J.C. (1965), "Regional inequalities and the process of national development", Economic Development and Cultural Change, Vol. 13, Pp. 3-45.

29. Myrdal G. (1957), "Economic theory and under developed regions". Duckworth. London. P. 153.

1.6 Migration and National Development :

In a free society migration is a voluntary activity, and may be beneficial to the migrants and his family. But for the economy as a whole its net effects may be positive or negative.

By considering the positive side, it is argued that rural out migrants generally constitute a comparatively more resourceful and selective segment of human capital. When they go in the urban environment which is more dynamic will improve the resource base of the national economy. Migrants also lead to higher levels of national out put, because the opportunity cost in the origin area is likely to be lower than their urban wage, their migration in urban areas will enhance the overall labour productivity.

It is also commonly, believed that migrants have on an average, higher propensity to save than non-migrants, therefore, it can be expected that migration will raise the economy's overall rate of capital formation.

Mainly in developing countries, the levels of fertility is higher in rural areas than in urban areas. Rural-urban migration is, therefore, likely to reduce fertility and hence, lower the overall rate of population growth in the developing economy.

Due to rural to urban migration the negative aspect emerged in the overall economy of the country (mainly developing countries), the deterioration in the quality of

urban life has been widely considered. Shanty towns, slums and squatter settlements have become permanent feature.

Rural-urban migration can also be viewed as a factor causing uneven development. It may affect the regions of innovative human resource by diverting cheap productive labourers in the growth and service centres of large cities, which have initial advantage of capital investment, causing wide-rural urban and inter urban differential in wages and employment opportunities are altered. This can only be accomplished within the framework of national migration policy which is an integral component of nation's overall development strategy linked and harmonised with its policies on industrialisation, agricultural development and social welfare.

The survey of the above literature on migration shows that the common understanding emerging from the large number of studies is that the causes of internal migration are not universally same in the time and space. The literature survey also shows that there is paucity of work on the out migration.

In the present study therefore, an attempt has been made to identify the determinants of internal migration (in migration as well as out migration) in Gujarat at two time points 1971 as well as at 1981 and to observe the change (if any) among the determinants of internal migration during 1971-81, for urban and rural areas separately.

The state of Gujarat has been choosen because it has shown considerable amount of internal migration in 1981 census.

The present study therefore sets the following objectives.

1.7 Objectives of the study

1. To identify and compare the district-wise spatial patterns of internal migration in the State of Gujarat for 1971 and 1981.

2. To identify and compare the district-wise pattern in the levels of various developmental variables.

3. To identify the determinants of internal migration in Gujarat for 1971 and for 1981 and to bring out significant variation in them over time.

CHAPTER - 2

AREA, DATA AND METHODOLOGY

2.1 Selection of the Study Area:

The state of Gujarat has been chosen for the district wise analysis in the present study. The choice was guided mainly by two factors : (1) the inter-district migration (within the state) and (2) the numbers of districts. Gujarat state has shown considerable amount of inter-district migration (within the state) in 1981 census as compared to other states of India, Table 2.1. As the study also analyses the out-migration, for which the available secondary data confined to inter-district migration (within the state) only, the state which gives sufficiently higher value of this is to be chosen.

From the table it is clear that Gujarat has fourth highest inter-district migration (within the state). The other three states showing higher values than Gujarat are Bihar, Uttar Pradesh and Tamil Nadu. The boundaries of the districts of the first two states have undergone a considerable change during 1971-81. The numbers of districts in Tamil Nadu are only 16 districts whereas in Gujarat are 19 districts. Hence the Gujarat state is selected for the present study.

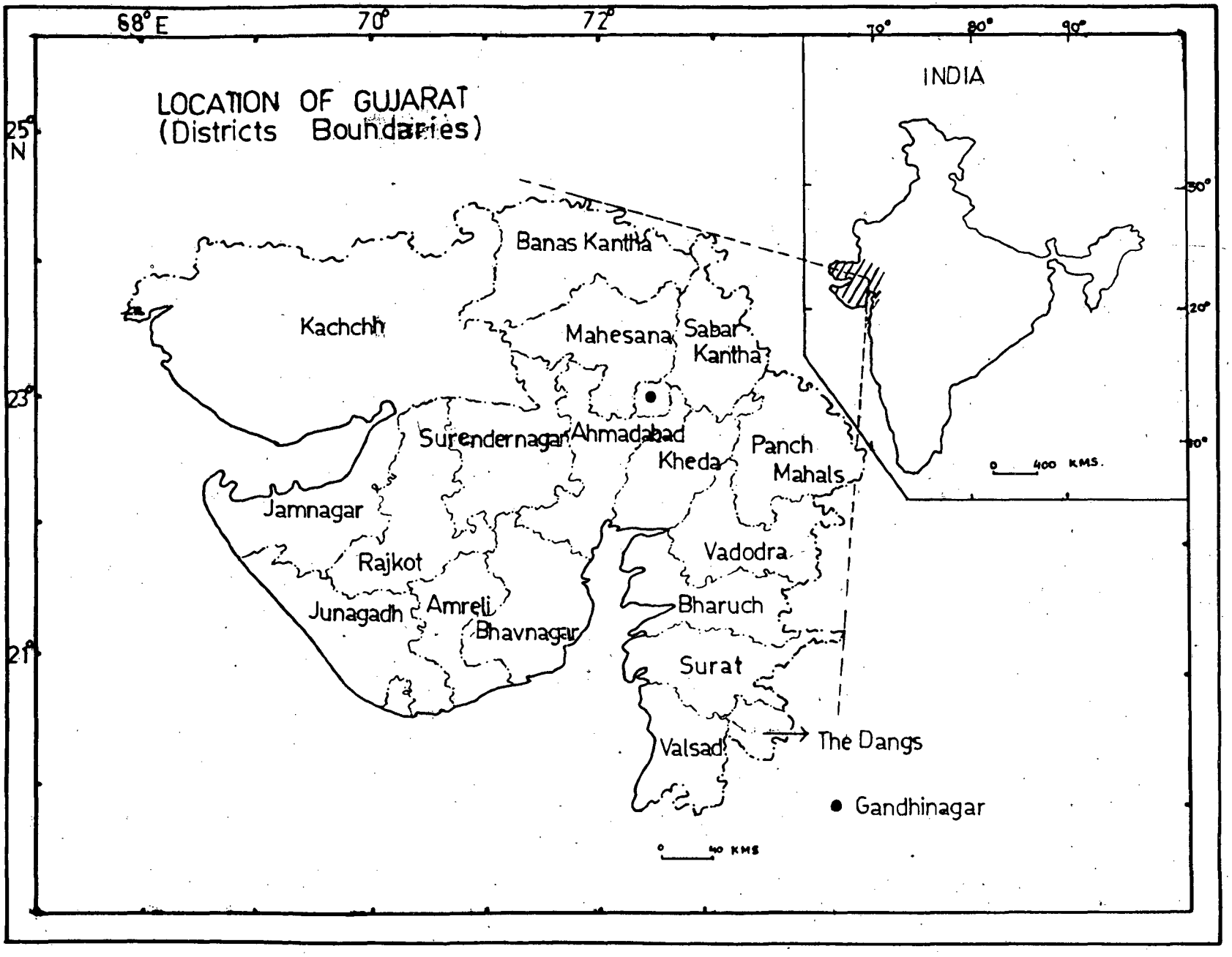
Table - 2.1

Internal Migration in India

Male - 1981

Name of States	Intra-district	Inter-district	Inter-state	Total
	Born elsewhere within the district	Born in other district of state	Born in beyond the state of enumeration	
Andhra Pradesh	64.17	29.50	6.33	100
Bihar	43.57	43.59	12.84	100
Gujarat	47.45	35.49	17.06	100
Haryana	32.46	24.29	43.25	100
Karnatka	54.59	27.85	17.55	100
Kerala	59.55	34.05	6.40	100
Madhya Pradesh	55.15	27.33	17.53	100
Maharashtra	43.34	33.24	23.41	100
Orissa	59.35	26.05	14.58	100
Punjab	45.60	31.30	23.08	100
Rajasthan	46.90	27.74	28.34	100
T. Nadu	54.51	37.36	8.12	100
Uttar Pradesh	45.99	43.94	10.06	100
West Bengal	40.08	25.96	33.96	100

Source : Census of India - 1981, Migration Tables, D-1.


LOCATION OF GUJARAT
(Districts Boundaries)
68° E
70°
72°
25° N
23°
21°
INDIA
70°
80°
90°
30°
20°
10°
0 400 KMS.
Banas Kantha
Kachchh
Mahesana
Sabar Kantha
Surendernagar
Ahmadabad
Kheda
Panch Mahals
Jamnagar
Rajkot
Vadodra
Junagadh
Amreli
Bharuch
Bhavnagar
Surat
Valsad
The Dangs
Gandhinagar
0 40 KMS

Map-2A

2.2 General introduction of Gujarat

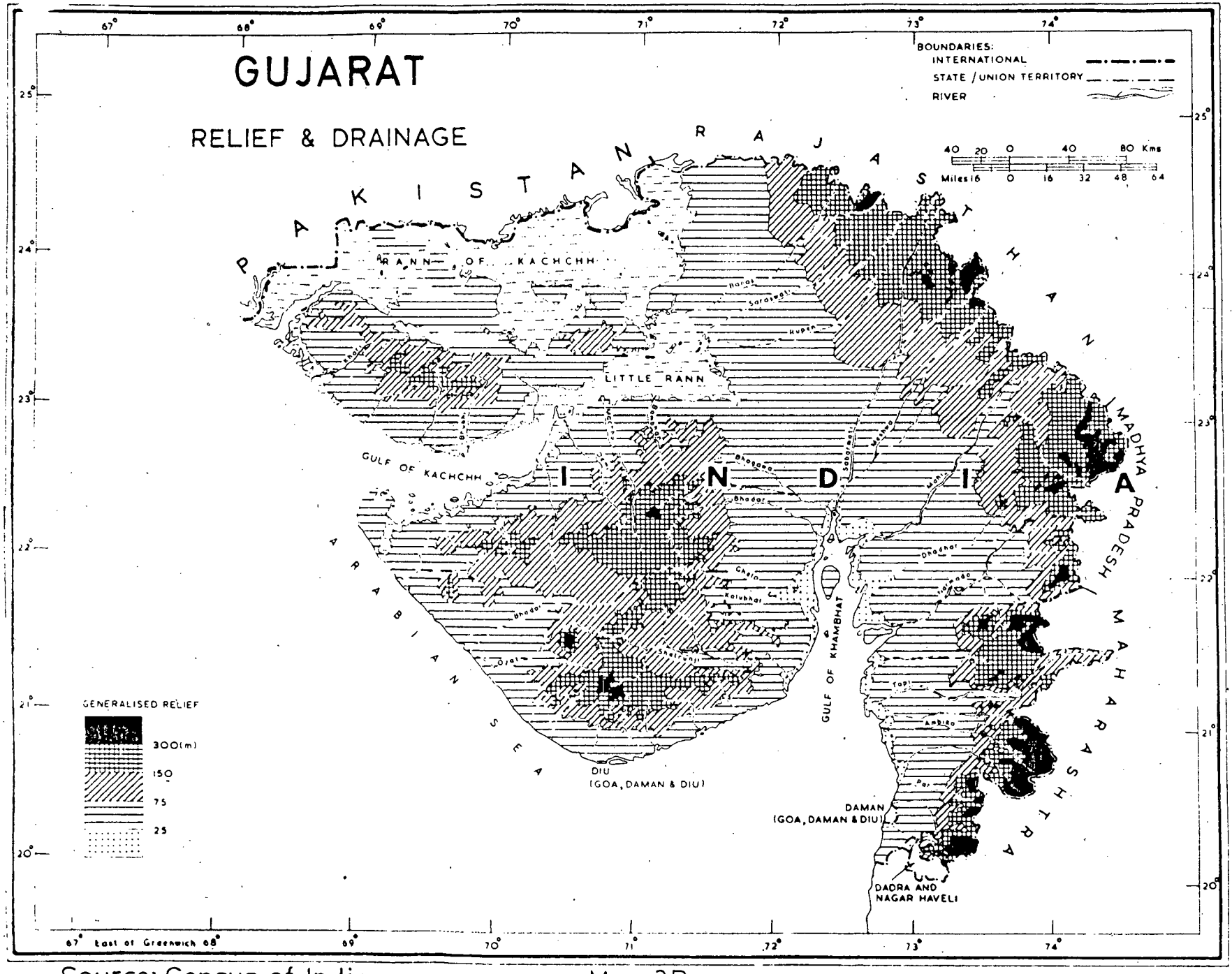
Gujarat, originally formed a part of the former bilingual Bombay state out of which it was carved out as a separate state on 1st May 1960, under the State Reorganisation Act 1960. It accounts for 5.97% of the total area of the country and 4.99% (1981) for its population. The state ranks 7th in land area and 10th in population size among the states of the country.

2.2.1 Location

The state of Gujarat extends between latitudes 20^{o}.07' - 24^{o} .43' North and longitudes 68^{o}.07' - 74^{o}.29' East covering an area of about 195984 sq. km. It is bounded by Rajasthan on the north and north east, Madhya Pradesh on the east, Maharashtra on the south-east and south, the Arabian Sea on the south and west and Pakistan on the north west. (see map 2-A).

2.2.2 Physiography

In the view of the physiography, Gujarat shows a composition of Rann, peninsulas and alluvial plains. The relief is characterized by rising height towards the eastern and north eastern margins of state (upto 300 mts and above). Whereas in central part of Kathiwar and Kachchh peninsular it remained between (150-300 mts). The southern part of state is drained by the rivers i.e. Sabarmati, Mahi, Narmada, Tapti and other, which culminate into Gulf of Kachchh. (Map 2-B).



Source: Census of India

Map-2.R

Geographically the state of Gujarat is a composition of plain, which is mostly alluvial. The eastern part of the state is influenced by the flanks of the Aravalle, which greatly influence the socio-cultural aspects of the general system of land scape development.

The Kachchh area, a part of peninsular Gujarat, is characterized by a unique terrain known as Rann, which is composed of extensive tidal mud plots and creaks and has relevance to its geological history, in the evolution of land scape in the region.

2.2.3 **Climate** :

Climate is one of the most important factor that governs the natural resources of a region and also the mode of human activity. It has a decisive effect on the nature of cropping pattern and agricultural practices, livestocks, and forest resources.

The maximum temperature in the year occurs in May, which the temp. recorded is as high as 45°C in some parts of the state. The temperatures are the lowest along the west cost of Kachchh and Saurashtra, showing the maritime influences which modify the distribution of summer temperature.

January is the coldest month of the year in all parts of state. The maximum temperature in January does not exceed 30°C.

The entire state lies in the monsoon area and the climate is acknowledged as 'monsoon climate', which may be sub-divided into two climatic zones:

(i) Arid

(ii) Semi-Arid tropical

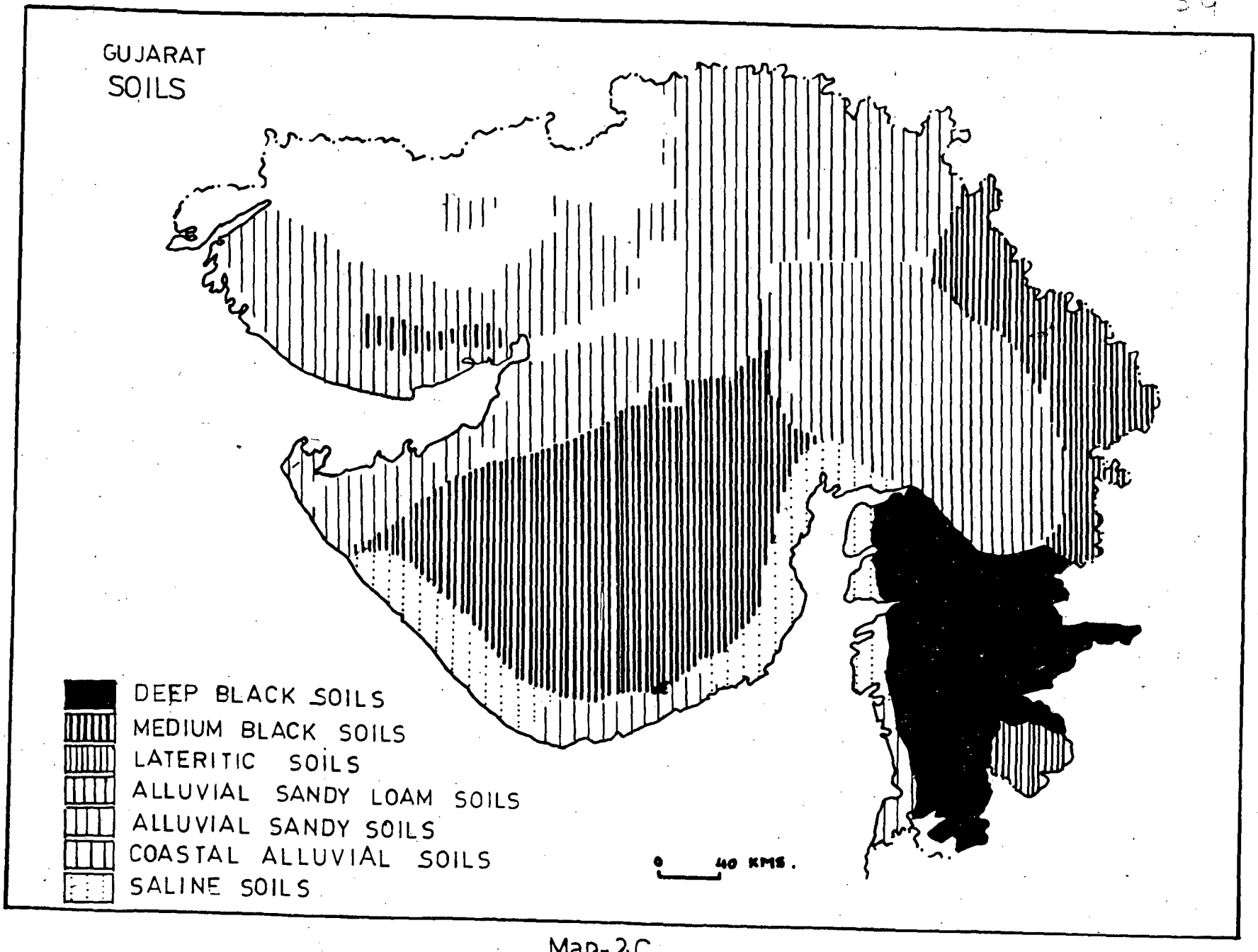
Arid conditions are found in Kachchh peninsula and north-western part of Banaskenth district.

Semi-Arid tropical climate prevails over the remaining part of the state and maximum temperature varies from 36.7°C (summer) and minimum 2°C to 18.3°C (winter). Spatially, temperature is higher in the northern part than the southern part of the state. The north-eastern part is dry and receives the average annual rainfall of 50 cm, while the southern and south-western parts are mostly moist with an average annual rainfall of 150 cm. The Dargs district gets the highest average annual rainfall, and followed by Valsad and Surat districts.

From the point of view of annual rainfall, the state can be divided into the following four major zones:

(i) Areas with more than 1000 mm rainfall including the districts of Valsad, Dangs, Surat and eastern parts of Bharuch district.

(ii) Areas receiving rainfall between 800-1000 mm including Vadodara, Panch Mahals, Kheda and parts of Ahmedabad districts.


GUJARAT
SOILS
DEEP BLACK SOILS
MEDIUM BLACK SOILS
LATERITIC SOILS
ALLUVIAL SANDY LOAM SOILS
ALLUVIAL SANDY SOILS
COASTAL ALLUVIAL SOILS
SALINE SOILS
0 40 KMS.

Map-2·C

(iii) Areas having rainfall between 400-800 mm including the whole of Saurashtra and areas of north of Ahmadabad.

(iv) Areas receiving less than 400 mm of rain including Kachchh and Banaskantha and western parts of Sabarkantha district.

2.2.4 **Soils**

The regional distribution of soils in the Gujarat can be studied in four broad regions (Map 2-C).

(i) Southern Gujarat region - This region may be taken as to be comprised of the districts of Bharuch, Surat, Valsad, and the Durgs. It consists of deep black soils, suitable for cotton, jowar, rice, wheat, and graden land crops.

(ii) Central Gujarat region : It is comprised of the district of Kheda, Ahmadabad, Mahesana and part of Vadodara district. This region has predominantly sandy loam soil. It is one of the most fertile parts of the state. The Panchmahals and south eastern Sabar Kantha districts differ from this region in that they have medium black soil.

(iii) North Gujarat Region : This region is of Mahesana, Sabarkantha, and Banaskantha districts. This region is agriculturally poor as compared to some other regionsof the state. The soil here is mainly sandy alluvial which is course shallow.

(iv) The Saurashtra and Kachchh Region : The region forms peninsula Gujarat and is topographically distinct from the mainland of Gujarat. It is situated between Gulf of Cambay on the south and the Rann of Kachchh on the north. Its soils are formed of sheets of Daccan lava. The Kachchh region is mainly covered by desert and saline type soils. In the Saurashtra area, the northern portion of Jamnagar, Rajkot, and Surender Nagar districts have sandy alluvial types, while the rest of the area has medium black soils of basaltic origin. The coastal alluvial soil predominates along the coast line.

2.2.5 **Vegetation**:

The area under forest constitutes about 10 percent of the total area of the state as compared to 23 per cent for the country as a whole. The wide variations in the climate and topography in the state have resulted in various types of forest growth. The forest growth varies from scrubs and thorn forest of north and north-west parts of Gujarat to luxuriant and valuable forest in south Gujarat. The type of forest growth ranges from pure desert condition in Kachchh and north-east Gujarat to moist deciduous forest in Dangs. Forests in the state can be classified into four main types as under:-

(i) The moist deciduous forests are found in the southern portion of the state comprising Surat, Valsad, and Dangs districts. These forests form the main source

of commercial timber in the state. Annual rainfall in this region is more than 1000 mm.

(ii) Dry mixed deciduous forests are found in the central part of Gujarat comprising Bharuch, Vadodara, Panch Mahals and Sabar Kantha districts and parts of Saurashtra, which fall in medium rainfall zone comprising Amreli, Junagarh, and Jamnagar districts.

(iii) Dry scrub forests are found in Banaskantha, Rajkot, parts of Bhavnagar, Junagarh and Kachchh districts.

(iv) Mangrove forests are found in coastal creeks in the state in districts of Kachchh, Jamnagar, and Junagarh.

2.2.6 **Mineral Resources:**

Gujarat is deficient in metallic minerals, whereas non-metallic minerals are abundant there. The important minerals are lime stone, manganese, bauxite, lignite, gypsum, china clay, fire clay, dolomite, glass, agate quartz, sand pipe clay, soap stone etc. These minerals have varied and vast number of uses in industries and in other spheres of life. Gujarat leads in the production of agate and salt. It stands second in the production of calcit and third in china clay in the country.

2.2.7 **Socio-Economic Attributes:**

2.2.7.1 **Population** - The state has the population of 34,035,799 persons according to (1981) census[1], out of it 68.99

1. Census of India (1981), Series-5, Part II-A and Part II-B, Gujarat : General Population Tables and Primary Census Abstract.

percent live in rural areas and 31.01 percent in urban areas, and making a density of 174 persons per sq. km. The concentration of population is higher in the central part and coastal areas of both the Gujarat plain and Kathiawar peninsula. It decreases considerably towards the north west and moderately towards the south east. This is mainly due to the physio-climatic conditions of the state.

Sex-ratio in the state as per 1981 census comes to 959 females per 1000 of males. Among the macro regions the lowest sex-ratio of 932 is recorded by Gujarat plain, while the highest of 929 by Kachchh peninsula. The Kathiawar peninsula and the eastern Hilly region recorded 953 and 959 respectively.

During 1971-81, the state has experienced a slightly lower growth rate of 27.67 percent in total population as against 29.39 percent during the previous decades 1961-71. The growth rate of population in Gujarat during 1971-81, according to 1981 census, is higher than the growth rate of 24.8 percent for the country as a whole.

The district wise growth rates of population during last two decades reveal that except five districts ie. Bhavnaga: Amreli, Kachch, Banaskantha and Surat, all other districts of the state have experienced a lower growth rate during 1971-81 as compared to the previous decade. The highest growth rate of 44.08 percent is noticed in Gandhi Nagar district in 1971-8 whereas Bharuch district has shown the lowest growth rate of 16.84 percent during the same decade.

The percentage distribution of population amongst different districts of the state shows that Ahmedabad district with 11.37 percent of the total population of the state ranks first; followed by Kheda (8.85 percent),Vadodara (7.51 percent), Mahesana (7.48 percent) and Surat (7.31 percent). The Dargs district accounts for the lowest proportion of 0.33 percent of the total population of the state.

According to 1971 census, total number of towns in Gujarat were 216, which have increased to 255 in 1981. The half of the urban population of the state in 1981 is accounted by, only eleven class one towns.

2.2.7.2 Urbanisation - Gujarat is one of the leading urbanized state in India. Maharashtra with urban population of 35.03 percent (1981 census) ranks first amongst all the states, followed by Tamil Nadu with 32.95 percent and Gujarat with 31.10 percent.

Districtwise data shows that Ahmedabad district has the highest proportion of urban population (71.76 percent). This is mainly due to Ahmedabad city forming part of district. The second highest proportion of urban population of 42.76 percent is recorded in Surat district closely followed by Rajkot district with 41.28 percent urban population. Banaskantha, Sabar Kantha, and Panchmahals are the three districts with lowest percentage of urban population in the state, whereas the Dargs is the only district in Gujarat which has no urban population.

The state on the whole shows 43.7 percent literacy with 36.20 percent in rural areas and 60.31 percent in urban areas (1981 census). Male literacy is 68.62 percent and female literacy is 51.13 percent. Among the districts the highest literacy rate is found in Ahmedabad (56.08%) and the lowest literacy rate is recorded in Banaskantha district (23.04).

The proportion of Scheduled Caste population residing in rural and urban areas is 6.99 percent and 7.52 percent respectively (1981 census). Unlike this the S.T. population recorded 19.13 percent and 3.35 percent in rural and urban areas respectively.

According to 1981 census the total work force in the state constitutes 37.27 percent of total population, of which 32.33 percent are main workers and 5.04 percent are marginal workers. Amongst the districts of the state, Dargs has reported the highest proportion (39.79 percent) of main workers, closely followed by Surat district 39.66 percent, other districts are Panch Mahal, Bharuch, and Valsad. Very low proportions of main workers have been reported in the districts of Mahesana (29.11 percent), Gandhi Nagar (29.30 percent), Junagarh (29.58 percent) and Ahmedabad (29,98 percent).

On the basis of above physio-cultural factors the state of Gujarat has been divided into four macro divisions which follows as - Gujarat plain covering the districts of Ahmedabad, Bharuch, Banaskantha, Gandhi Nagar, Kheda, Mahesana, Sabar Kantha, Surat, Vadodara and Valsad.

(ii) Eastern Hilly Region extending over the districts of the Dangs and Panchmahals.

(iii) Kathiawar peninsula covering the districts of Amreli, Bhavnagar, Jamnagar, Junagarh, Rajkot and Surender Nagar

(iv) Kachchh peninsula covering only Kachchh district.

2.3 Data its sources and limitations

The present study is based on the secondary data. Migration data are collected from the census of India, publications on the basis of place of birth. Migration data on the basis of place of birth are collected from migration table D-1, both for 1971 and 1981. On the basis of these data migration patterns are studied in the present study. These patterns are intra-district in migration, intra-district out-migration, inter-district in-migration, inter-state in-migration. To study the inter district migration patterns (within the state) data are collected from District Census Hand Books[3] for 1971, and table D-13 for 1981. Data from these tables are collected for computing the inter-district out-migrations within the state.

It was not until 1961, however, that the birth place was classified as rural or urban, and as (i) within the district of enumeration, (ii) outside the district but within

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3. Data on inter-district migration in 1971 census are given in Districts Census Hand Books of all districts of Gujarat, Census of India (1971) (Series 5, Supplement to Part X-C-II) Socio-economic and Cultural Tables (Urban area and all areas), Appendix I & II.

the state of enumeration, (iii) outside the state of enumeration but within India, (iv) outside India. In 1971 census migration data have been collected for the first time on the basis of place of last residence. The main disadvantage of place of birth data is that the timing of the migration is unknown (current migration flows may be very much different from life time[4] migration flows).

The question on reason for migration has been included for the first time in 1981 census. This information although is very important but has not been used in the present study because it is available only at state level.

For socio-economic and infrastructural development variables data are collected from census and statistical abstract of Gujarat.

On the basis of above sources of data different migration rates are calculated for all the districts of Gujarat. These rates have been worked out as percent to total rural or urban population of the district as explained in the section on methodology. These migration rates are described in a broad perspective in chapter third of the present study.

The development variables are collected both for rural and urban areas separately. These variables are same for

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4. Life time migrants are those who came to the place of enumeration at same point during their life and have been living there ever or at some other place different from birth place.

1971 and 1981. As the migration rates are computed in the reference of male population only. The main purpose to choose male migrants in the study because the work participation rate among male is generally higher than females. The predominant of female migration in India is due to "marriage migration" (on account of village exogamy in several parts of India) and "associational migration" (accompanying their migrant husbands). The economic causes are relatively unimportant in India and even in big cities, female workers constitute only a small proportion of total female migrants.

The development variables which are taken in the study are further converted into indicators. A complete list of migration rates and development indicators which are used in the present study along with their abbreviated names are given below.

2.3.1 Variables on Migration

Variables on Rural-migration Rural 1971

S.No	Explanation	Abbreviated Name
	Rural in-migration	
1.	Intra-district R-R in-migration rate	MR 1
2.	Intra-district U-R in-migration rate	MR 2
3.	Inter-district R-R in-migration rate	MR 3
4.	Inter-district U-R in-migration rate	MR 4
5.	Inter-state R-R in-migration rate	MR 5

S.No	Explanation	Abbreviated name
6.	Inter-state U-R in-migration rate	MR 6
7.	Intra-district in-migration rate in rural area (Combined both MR 1 + MR 2)	MR 7
8.	Inter-district in-migration rate in rural area (MR 3 + MR 4)	MR 8
9.	Inter-state in-migration rate in rural area (MR 5 + MR 6)	MR 9
	Rural Out-migration	
10.	Intra-district R-U out-migration rate	MR 10
11.	Inter-district R-R out-migration rate	MR 11
12.	Inter-district R-U out-migration rate	MR 12
13.	Intra-district out-migration rate (MR 1 + MR 10) in rural area	MR 13
14.	Inter-district out-migration rate (MR 11 + MR 12) in rural area	MR 14
	Rural Net-migration	
15.	Intra-district U-R net-migration rate	MR 15
16.	Inter-district R-R net-migration rate	MR 16
17.	Inter-district U-R net-migration rate	MR 17
18.	Inter-district net migration rate in rural area (MR 16 + MR 17)	MR 18
	Rural - 1981	
	Rural in-migration	
19.	Intra-district R-R in-migration rate	MR 19
20.	Intra-district U-R in-migration rate	MR 20
21.	Inter-district R-R in-migration rate	MR 21
22.	Inter-district U-R in-migration rate	MR 22

23.	Inter-state R-R in-migration rate	MR 23
24.	Inter-state U-R in-migration rate	MR 24
25.	Intra-district in-migration rate in rural area (MR 19 + MR 20)	MR 25
26.	Inter-district in-migration rate in rural area (MR 21 + MR 22)	MR 26
27.	Inter-state in-migration rate in rural area MR 23 + MR 24)	MR 27

Rural out-migration

28.	Intra-district R-U out migration rate	MR 28
29.	Inter-district R-R out migration rate	MR 29
30.	Inter-district U-R out-migration rate	MR 30
31.	Intra-district out-migration rate in rural area (MR 19 + MR 28)	MR 31
32.	Inter-district out-migration rate in rural area (MR 30 + MR 31)	MR 32
33.	Intra-district U-R net migration rate	MR 33
34.	Inter-district R-R net migration rate	MR 34
35.	Inter-district U-R net-migration rate	MR 35
36.	Inter-district net migration rate in rural area (MR 34 + MR 35)	MR 36

Variables on Urban-migration

Urban-1971

Urban in-migration

37.	Intra-district R-U in-migration rate	MU 1
38.	Intra-district U-U in-migration rate	MU 2
39.	Inter-district R-U in-migration rate	MU 3
40.	Inter district U-U in-migration rate	MU 4
41.	Inter-state R-U in-migration rate	MU 5

Urban in-migration (contd)

42.	Inter-state U-U in-migration rate	MU 6
43.	Intra-district in-migration rate in urban area (MU 1 + MU 2)	MU 7
44.	Inter-district in-migration rate in urban area (MU 3 + MU 4)	MU 8
45.	Inter-state in-migration rate in urban area (MU 5 + MU 6)	MU 9

Urban out-migration rate

46.	Intra-district U-R out-migration rate	MU 10
47.	Inter-district U-R out-migration rate	MU 11
48.	Inter-district U-U out-migration rate	MU 12
49.	Intra-district out-migration rate (MU 1 + MU 10) in urban area	MU 13
50.	Inter-district out-migration rate in urban area (mu 11 + MU 12)	MU 14

Urban net-migration

51.	Intra-district R-U net-migration rate	MU 15
52.	Inter-district R-U net-migration rate	MU 16
53.	Inter-district U-U net-migration rate	MU 17
54.	Inter-district net-migration rate in urban area (MU 16 + MU 17)	MU 18

Urban 1981

Urban in-migration

55.	Intra-district R-U in-migration rate	MU 19
56.	Intra-district U-U in-migration rate	MU 20
57.	Inter-district R-U in-migration rate	MU 21
58.	Inter-district U-U in-migration rate	MU 22

59.	Inter-state R-U in-migration rate	MU 23
60.	Inter-state U-U in-migration rate.	MU 24
61.	Intra-district in-migration rate in urban area (MU 19 + MU 20)	MU 25
62.	Inter-district in-migration rate in urban area (MU 21 + MU 22)	MU 26
63.	Inter-state in-migration rate in urban area (MU 23 + MU 24)	MU 27

Urban out-migration

64.	Intra-district U-R out-migration rate	MU 28
65.	Inter-district U-R out-migration rate	MU 29
66.	Inter-district U-U out-migration rate	MU 30
67.	Intra-district out-migration rate in urban area (MU 19 + MU 28)	MU 31
68.	Inter-district out-migration rate in urban area (MU 29 + MU 30)	MU 32

Urban net-migration

69.	Intra-district R-U net-migration rate	MU 33
70.	Inter-district R-U net-migration rate	MU 34
71.	Inter-district U-U net-migration rate	MU 35
72.	Inter-district net-migration rate in urban area (MU 34 + MU 35)	MU 36

2.3.2 Infrastructure and Socio-Economic Development Indicators

Rural Development Indicators 1971

S. No	Explanation	Abbreviated Name
73.	Percentage of net area sown to total geographical area of the district	DIR 1
74.	Proportion of gross cropped area to net sown area	DIR 2
75.	Percentage of gross irrigated area to total gross cropped area	DIR 3
76.	Percentage of rural male workers to total rural male population.	DIR 4
77.	Percentage of rural male cultivators to total rural male workers.	DIR 5
78.	Percentage of rural male agricultural labours to total rural male worker	DIR 6
79.	Percentage of rural male workers in primary activities to total rural male workers.	DIR 7
80.	Percentage of rural male workers in secondary activities to total rural male workers.	DIR 8
81.	Percentage of rural male workers in territary activities to total rural male workers	DIR 9
82.	Length of metalled road per 1000 sq. km of area.	DIR 10
83.	Percentage distribution of S.C. and S.T. (combined) to total rural male population	DIR 11
84.	Male literacy rate in rural areas	DIR 12
85.	Sex-ratio in rural areas.	DIR 13

Rural development indicators - 1981

S. No	Explanation	Abbreviated Name
86.	Percentage of net area sown to total geographical area of the district	DIR 14
87.	Proportion of gross cropped area to net sown area	DIU 15
88.	Percentage of gross irrigated area to total gross cropped area.	DIU 16
89.	Percentage of rural male workers to total rural male population.	DIU 17
90.	Percentage of rural male cultivators to total rural male worker	DIU 18
91.	Percentage of rural male agricultural labour to total male rural worker	DIU 19
92.	Percentage of male worker in primary activities to total rural male worker	DIU 20
93.	Percentage of male worker in secondary activities to total male worker	DIU 21
94.	Percentage of worker male worker in territary activities to total male worker	DIU 22
95.	Length of metalled road per 1000 sq. km of area	DIU 23
96.	Percentage distribution of S.C. and S.T. (combined) to total rural male population	DIU 24
97.	Male literacy rate in rural area	DIU 25
98.	Sex-ratio in rural area	DIU 26
99	Availability of medical facilities behind per 1000 of rural population	DIU 27
100.	Availability of post and telegram facilities per 1000 of rural population	DIU 28
101.	Availability of power supply per 1000 of rural population	DIU 29

Urban Development Indicators - 1971

S.No.	Explanation	Abbreviated Name
102	Percentage of urban male worker to total urban male population	DIU 1
103.	Percentage of urban male worker in primary activities to total urban male workers	DIU 2
104.	Percentage of urban workers in non-household industry to total urban male worker	DIU 3
105.	Percentage of urban male worker in secondary activities to total urban male workers	DIU 4
106.	Percentage of urban male workers in territary activities to total urban male workers	DIU 5
107.	Length of metalled road per 1000 sq. km of area	DIU 6
108.	Male literacy rates urban areas	DIU 7
109.	Sex-ratio in urban area	DIU 8
110.	Percentage of urban population	DIU 9
111.	Percentage of female worker to total urban female population	DIU 10
112	Availability of hospital beds per 1000 of urban population	DIU 11
113.	Availability of school per 1000 of urban population	DIU 12
114.	Electrical connections (commercial and industrial) per 1000 of urban population	DIU 13

Urban development Indicators - 1981

115.	Percentage of urban male worker to total urban male population	DIU 14
116.	Percentage of urban male worker in primary activities to total male workers	DIU 15
117.	Percentage of urban male workers in non-household industry to total urban male worker	DIU 16

S. No	Explanation	Abbreviated name
118.	Percentage of urban male worker in secondary activities to total urban male worker	DIU 17
119.	Percentage of urban male worker in territary activities to total urban male workers	DIU 18
120.	Length of metalled road per 1000 sq. km of area	DIU 19
121.	Male literacy rates in urban areas	DIU 20
122.	Sex-ratio in urban area	DIU 21
123.	Percentage of urban population	DIU 22
124.	Percentage of female worker to total urban female population	DIU 23
125.	Availability of hospital beds per 1000 of urban population	DIU 24
126.	Availability of school per 1000 of urban population	DIU 25
127.	Electrical connections (commercial and industrial) per 1000 of urban population	DIU 26

2.4 Methodology:

To analyse the patterns of migration[5] in relation to the socio-economic and infrastructural variables the adopted methodology is as follows.

To understand the internal migration patterns in more detailes, the rural and urban area in the study are treated

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

separately. Based on place of birth/last residence and place of enumeration migrants can be classified into four migration streams : (1) rural to rural (R-R), (2) Rural to urban (R-U), (3) Urban to rural (U-R) and (4) urban to urban (U-U). The above four streams of migration are studied separately at intra-district, inter-district and inter-state levels, which is roughly indicative of distance of migration. Each changes of residence involves two events, a departure and an arrival. Departure from the community of origin is termed as out-migration. Arrival at the community of destination is termed as in-migration. The net balance between arrivals and departures is terms as net-migration. Net migration may be positive or negative depending upon the number of arrivals and departures. It will be positive if arrivals exceed departures. It will be however negative in the opposite case.

For measuring the levels of migration "migration rates" are calculated. Migration rate is usually expressed as a ratio of migrants to an area to the total population of the area during specified time interval. Thus, the migration rate is equal to the number of migrants divided by the population of the area and multiplied by some constant (usually 1000), so that we have the migration rate per 1000 of population. Migration rate can be calculated for out-migration, in-migration and net-migration as well as for specific sub groups of

In the study migration rates are calculated in the following manners:-

$$Or = \frac{O}{P} \cdot K \qquad \ldots\ldots(1)$$

$$Ir = \frac{I}{P} \cdot K \qquad \ldots\ldots(2)$$

$$Nr = \frac{I - O}{P} \cdot K \qquad \ldots\ldots(3)$$

where,

Or = Out migration rate.

Ir = in-migration rate

Nr = net-migration rate

O = Number of male out-migrants from a district rural/urban

I = Number of male in-migrants to a district rural/urban

N = Number of net migrants in a district rural/urban

P = Population of a district rural/urban

K = Constant (usually 1000)

The area from where a migrants departs is termed as the "area of origin" and the area at which he arrives is termed as "area of destination". Where a large number of migrants depart from common area of origin and arrive at a common area of destination during a particular period of time, it is known as "migration stream".

For finding the relationship between migration rates and developmental indicators the zero order co-efficient of inter correlation among them have been calculated. In order to evaluate the levels of these relationships the test of significance have also been carried out. For interpretting these relationship in a better way the stepwise regression analysis have also been attempted.[6] In the regression equation migration rates have considered as dependent on development indicators. The relationship between migration and development indicators is discussed in the fifth chapter of the present study.

Certain cartographical methods have also been used for the purpose of the present analysis. District boundaries and location of these districts in Gujarat have been shown on the map. The grographical and physical characteristics of the study area are shown on the physiographic map. District wise variation in the net migration rates both for rural and urban area are shown by chropleth map.

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6. Mahmood A. (1986), "Statistical Methods in Geographical Studies", Rajesh Publication, N. Delhi, pp. 131-153.

CHAPTER - 3

Patterns of Internal Migration in Gujarat in 1971 and 1981

A detailed study of the patterns of internal migration in Gujarat will provide a better insight into the nature of migration going on in Gujarat. Internal migration patterns are studied in respect of migration streams both for rural and urban areas separately. With the help of these migration streams, the in-migration, out-migration and net migration rates are worked out for each district of Gujarat for 1971 and for 1981 census. These rates are also disaggrigated in terms of distance that is intra-district, inter-district or interstate.

3.1 Internal migration patterns in rural areas

Internal migration patterns in rural areas are studied under the following heads.

3.1.1 Rural in-migration

Rural in-migration rates are computed for rural to rural and urban to rural migration stream. These rates have been worked out for intra-district, inter-district and inter-state migrations. These rates are shown in Table 3.1 for 1971. Intra-district migrants are those persons born outside the place of enumeration but within the district of enumeration. Inter-district migrants are perhaps born outside the district of enumeration but within the same state. Whereas inter-state

Table - 3.1

District-wise rural-immigration rates Gujarat-1971

Districts	Intra-district		Inter-districts		Inter-State		Combined R-R and U-R streams		
	R - R	U - R	R - R	U - R	R - R	U - R	Intra distts	Inter distts	Inter state
	MR 1	MR 2	MR 3	MR 4	MR 5	MR 6	MR 7	MR 8	MR 9
Jamnagar	8.56	1.30	2.92	0.86	0.61	0.38	2.86	3.70	0.29
Rajkot	7.84	1.70	4.12	0.73	0.11	0.10	9.54	4.84	0.21
Surender Nagar	7.39	1.08	2.79	0.87	0.10	0.07	8.47	3.65	0.17
Bhav Nagar	8.68	1.30	1.76	0.67	0.06	0.13	9.98	2.43	0.19
Amreli	8.17	0.99	3.70	1.12	0.28	0.21	9.16	4.82	0.49
Junagarh	9.28	1.47	3.39	0.71	0.33	0.20	10.75	4.10	0.53
Kachchh	10.08	1.33	0.73	0.32	0.44	0.86	11.41	1.05	1.30
Banaskantha	6.74	0.50	1.51	0.57	1.21	0.24	7.24	2.07	1.45
Sabarkantha	7.67	0.63	2.83	0.62	0.81	0.24	8.30	3.44	1.05
Mahesana	5.66	0.67	1.84	0.67	0.29	0.14	6.33	2.51	0.43
Gandhi Nagar	2.40	--	7.97	2.79	1.45	0.35	2.40	10.64	1.80
Ahmedabad	4.12	1.64	3.83	0.70	0.59	0.25	5.76	4.52	0.84
Kheda	6.65	1.15	2.81	0.92	0.36	0.25	7.80	3.73	0.61
Panch Mahals	4.83	0.80	0.66	0.23	0.21	0.09	5.63	0.89	0.30
Vadodara	10.05	1.18	3.66	0.60	0.82	0.19	11.23	4.25	1.01
Bharuch	14.25	1.42	4.54	0.73	0.92	0.21	15.67	5.26	1.13
Surat	14.24	1.05	3.46	0.64	3.16	0.52	15.29	4.09	3.68
Valsad	8.35	1.31	1.26	0.45	1.01	0.62	9.66	1.70	1.63
The Dangs	19.71	-	5.99	1.12	4.13	0.51	19.71	7.10	4.64

Source: Census of India (1971) series 5, Part II-D(1) Gujarat, Migration Tables, (D-1).

migrants are persons born in the states (union territories of India and enumerated in Gujarat.

At the intra-district level, in rural to rural migration stream the highest migration rate is recorded in the Dangs district. The main reason for high migration rate may be that the whole district is rural, and there is no urban population, so if any movement is taking place that will be rural to rural only. Other districts, where high intra-district rural to rural migration rate is recorded in Surat, Bharuch, Vadodara, Kachchh, Junagarh, Jamnagar and Havnagar. Least, rural-rural migration rate is recorded in Gandhi Nagar. In urban to rural migration stream within the district, in Gandhi Nagar district, there is no urban to rural migrants. The highest migration rate is recorded in Rajkot, followed by Ahmedabad, Junagarh, Bharuch etc.

In inter-district R-R in-migration rate is the highest in Gandhi Nagar district followed by Dangs, Bharuch, Rajkot and Ahmedabad districts. Least inter-district R-R in-migration rate is noted in Kachchh and Panch Mahals districts which are the less developed districts. The highest urban to rural in-migration rate is found in the district of Gandhi Nagar, the Dang and Amreli. The urban to rural inter-district in-migration rate is very low in the district of Kachchh, Panch Mahals, Valsad, Banaskantha etc.

Inter-state in-migration rates in rural areas in rural to rural migration is high in Dangs, Surat, Gandhi Nagar and Banaskantha districts as compared to the other districts of state. The urban to rural inter-state in-migration rate is not very high in all the districts of Gujarat. The last three columns of the same table (3.1) are giving the combined figures both for rural to rural and urban to rural streams, and observed the same in-migration pattern in rural areas as noted earlier, in terms of relative position of the districts at intra-district, inter-district and inter-state levels.

For studying the rural in-migration patterns in the Gujarat whether it has changed or remained the same, another table is prepared for 1981 census (Table 3.2). It is found that rural in-migration rates at intra and inter-district level is almost remained same, whereas the in-migration rates at inter-state level have been improved in 1981. This may be the indication of better higher rural area development in Gujarat than the neighbouring district of other state which caused the higher inter-state rural in-migration in Gujarat. There are few districts where rural in-migration rates remained high both for 1971 and 1981 at inter-district level (within the state) i.e. the Dangs, Surat, Bharuch, Vadodara, Kheda, Ahmedabad, Gandhi Nagar, Sabar Kantha, Amreli and Rajkot. At the inter-state level, the rural in-migration rates remained high in the Dangs,

Table - 3.2

District-wise rural in-migration rates
Gujarat - 1981

Districts	Intra-district		Inter-district		Inter-state		Combined both R-R and U-R streams		
	MR 19	MR 20	MR 21	MR 22	MR 23	MR 24	Intra-distt	Inter-distt	Inter-state
	R-R	U-R	R-R	U-R	R-R	U-R	MR 25	MR 26	MR 27
Jamnagar	7.03	1.03	2.79	0.69	0.31	0.17	8.06	3.47	0.48
Rajkot	6.34	1.33	3.44	0.71	0.39	0.16	7.67	4.14	0.55
Surender Nagar	6.33	1.05	2.47	0.78	0.18	0.08	6.38	3.24	0.26
Bhav Nagar	7.29	1.15	1.76	0.55	0.04	0.13	8.44	2.31	0.18
Amreli	7.41	0.90	3.80	1.02	0.34	0.11	8.31	4.81	0.45
Junagarh	8.97	1.38	2.24	0.58	0.23	0.16	10.35	2.82	0.39
Kachchh	10.09	1.44	1.16	0.62	0.25	0.53	11.43	1.77	0.78
Banaskantha	5.40	0.35	1.77	0.62	1.25	0.29	5.75	2.39	1.54
Sabar Kantha	7.36	0.68	3.03	0.68	0.95	0.23	8.04	3.70	1.18
Mahesana	5.50	0.76	1.82	0.84	0.38	0.21	6.26	2.46	0.59
Gandhi Nagar	2.67	0.05	7.17	4.67	2.05	0.66	2.72	11.83	2.71
Ahmedabad	5.77	1.68	4.95	1.04	0.98	0.32	7.45	5.99	1.30
Kheda	8.08	1.50	3.33	1.16	0.58	0.34	9.58	4.49	0.92
Panch Mahals	4.48	0.61	0.79	0.30	0.25	0.11	5.09	1.09	0.36
Vadodara	10.09	1.37	4.09	0.90	1.23	0.34	11.46	4.99	1.57
Bharuch	13.34	1.14	4.91	0.94	1.28	0.42	14.48	5.85	1.70
Surat	11.68	1.49	4.32	0.77	3.75	0.65	13.17	5.09	4.40
Valsad	6.82	1.42	1.72	0.53	1.72	0.75	8.24	2.24	2.47
The Dangs	15.15	-	5.53	1.04	3.58	0.61	15.15	6.56	4.14

Source: Census of India (1981) Series 5, Parts A & B Gujarat, Migration Tables, D-1.

Surat, Gandhi Nagar, Valsad, Bharuch, and Vadodara. The Dangs districts where 98% of the total area is covered by forest and people are engaged mainly in primary activities. Other, reason for high in-migration rate may be that the whole area of district is rural and no urban area in the district. Other pattern of rural inmigration can be observed from the tables, like rural to rural in-migration rates always higher than urban to rural in-migration streams. As the scale of migrants in terms of distance has increased the magnitude of migration rate decreased continously at intra-district, inter-district and inter-state level.

3.1.2 Rural out-migration

Rural out-migration from rural areas can be explained with the help of rural to rural and rural to urban migration streams (see table 3.3). This table is showing rural out-migration rates for 1971, at intra-district and inter-district levels. The rural out-migration rates in rural to urban (within the district) in Ahmedabad, Rajkot, Jamnagar, Kuchchh, Junagarh and Amreli districts. Least, rural to urban migration is recorded in Gandhi Nagar district. At the inter-district level (within the state) the rural out-migration rates in rural to rural migration stream is comparatively higher in the districts of Bhavnagar, Amreli, Surender Nagar, and Bharuch district. The rural to urban out-migration streams at inter-district level shows a quite different pattern, here

Table No. 3.3

District-wise rural out-migration rates in Gujarat - 1971

Districts	Intra-districts	Inter-districts		Intra-district	Inter-district
	R-U	R-R	R-U	R-R + R-U	R-R + R-U
	MR 10	MR 11	MR 12	MR 13	MR 14
Jamnagar	5.65	2.28	3.00	14.16	5.27
Rajkot	6.52	3.12	3.53	14.35	6.65
Surender Nagar	4.37	4.55	6.91	11.76	11.45
Bhav Nagar	4.68	5.19	5.69	13.36	10.88
Amreli	2.37	4.96	6.43	10.54	11.38
Junagarh	4.72	1.92	2.16	14.01	4.07
Kachchh	4.88	3.41	2.75	14.96	6.15
Banaskantha	1.20	2.06	2.99	7.94	5.04
Sabarkantha	1.51	1.18	2.52	9.18	3.70
Mahesana	3.22	2.38	8.09	8.88	10.89
Gandhi Nagar	0.52	2.22	8.06	2.91	10.27
Ahmedabad	7.71	3.99	2.21	11.83	6.20
Kheda	2.95	1.52	4.01	9.60	5.33
Panch Mahals	1.19	1.99	1.81	6.02	3.80
Vadodara	4.15	3.20	1.90	14.20	5.09
Bharuch	1.96	4.57	3.21	16.20	7.78
Surat	3.61	2.32	1.84	17.85	4.15
Valsad	2.57	1.47	1.87	10.92	3.33
The Dangs	-	0.68	0.64	19.71	1.32

Source: Census of India (1971) Series 5, Supplement to Part X-C-II Gujarat "District Census Hand Books," Appendix I and II.

the districts which are having the large cities, like Ahmedabad, Surat, Vadodara, and Valsad, the out-migration rate is low. The last two columns of table are showing the combined figures both for rural to rural and rural to urban out-migration at intra-district and inter-district level. By observing the out-migration rate at intra-district and inter-districts level it is found that the rural out-migration rates within the district is relatively higher for all the districts of state except the Gandhi Nagar and Panchmahals. This pattern of out-migration is quite different than the inter-districts out-migration. The reason for this may be that rural out-migration from one district to other districts, it is not necessary that migrant's destination will be within the district of state, his destination may be in other districts of states of India, than the state of enumeration. So for studying the inter-state out-migration patterns the data are not available in the census. So from above discussion one thing is clear that the districts which are forming their boundaries to other state of India, there is a possibility that inter-district rural to urban out-migration rate will be lower than the other districts of the state which are not forming their boundaries to the other states of India. In this way the district like Dangs, Valsad, Surat, Bharuch, Vadodara, Panch Mahals, Saban Kantha, and Banaskantha, forming their borders to other state like Maharashtra, Madhya Pradesh and Rajasthan. These all the districts are showing relatively lower inter-district

Table - 3.4

District-wise rural out-migration rates in Gujarat - 1981

Districts	Intra-district	Inter-Districts		Intra-district	Inter-district R-R & R-U
	MR 28 R-U	MR 29 R-R	MR 30 R-U	MR 31 R-R & R-U	MR 32
1. Jamnagar	6.25	2.02	3.62	13.28	5.63
2. Rajkot	6.41	3.08	3.33	12.75	6.41
3. Surender Nagar	4.77	4.51	6.37	11.10	10.88
4. Bhav Nagar	4.55	4.89	7.26	12.15	10.17
5. Amreli	2.24	3.86	9.41	9.65	13.26
6. Junagarh	4.92	2.01	2.66	13.89	4.67
7. Kachchh	5.37	2.92	2.80	15.46	5.71
8. Banaskantha	0.98	1.84	2.14	6.38	3.98
9. Sabarkantha	1.69	1.58	2.84	9.04	4.42
10. Mahesana	3.49	2.73	8.27	8.99	11.00
11. Gandhi Nagar	1.49	3.19	8.04	4.16	11.22
12. Ahmedabad	8.61	4.49	3.15	14.38	7.63
13. Kheda	2.77	1.66	3.87	10.85	5.53
14. Panch Mahals	1.04	3.05	2.23	5.52	5.27
15. Vadodara	5.27	3.89	1.90	15.35	5.78
16. Bharuch	2.50	5.87	4.41	15.85	10.28
17. Surat	3.36	1.47	1.76	15.03	4.23
18. Valsad	2.96	1.62	2.24	9.78	3.85
19. The Dangs	-	4.18	1.16	15.15	5.34

Source: Census of India (1981) Series 5, Part A & B, Gujarat, Migration Table D-13.

out-migration rates, than the other districts of state.

Table (3.4) which shows the rural out-migration rate for 1981. The rural to urban in-migration pattern for all the districts in terms of their relative position is almost remained same both at the intra district and inter district level. But the magnitude of out-migration rate has increased in 1981 as compared to 1971. The districts where the rural to urban migration is decreased in 1981 is very marginal, these fluctuations may be due to changes in the availability of economic opportunities both at the place of origin and place of destination of migrants. The Dangs district which is showing a very high out migration at inter-district level in 1981, as compared to 1971 in rural to rural migration stream. It may be due to that whole district is backward, and the migrants are not skilled, so they have moved only rural to rural stream. The possibility in increased in the migration rate in 1981, because in the Dangs district the cultivable land is not available, and the whole area is covered by forest. In the forest and other related activities the saturation point might have been achieved. The increased in labour force is a continuous process due to high growth of population. These surplus labour might have moved to other districts of state, where the opportunities are better than the origin district.

3.1.3 Rural net-migration

The patterns of net-migration in the rural areas is shown in Tables (3.5) and (3.6) for 1971 and 1981 respectivel The net-migration rate is a difference of in-migration and out-

Table - 3.5

District-wise rural net-migration rates in Gujarat - 1971

Districts	Intra-district	Inter-district		Inter-district Combined R-R + U-R
	U-R MR 15	R-R MR 16	U-R MR 17	MR 18
Jamnagar	-4.30	0.64	-2.14	-1.50
Rajkot	-4.82	1.00	-2.80	-1.80
Surender Nagar	-3.29	-1.76	-6.-4	-7.79
Bhav Nagar	-3.38	-3.43	-5.02	-8.50
Amreli	-1.38	-1.26	-5.31	-6.56
Junagarh	-3.25	1.47	-1.44	0.03
Kachchh	-3.55	-2.68	-2.42	-5.09
Banaskantha	-0.70	-0.55	-2.42	-2.97
Sabarkantha	-0.88	1.65	-1.90	-0.26
Mahesana	-2.55	-9.54	-7.83	-8.38
Gandhi Nagar	-0.52	5.75	-5.27	0.37
Ahmedabad	-6.07	-0.16	-1.51	-1.67
Kheda	-1.80	1.28	-3.08	-1.79
Panchmahals	-0.39	-1.33	-1.59	-2.91
Vadodara	-2.27	0.46	-1.30	-0.84
Bharuch	-0.54	-0.30	-2.49	-2.51
Surat	-2.56	1.14	-1.20	-0.06
Valsad	-1.25	-0.21	-1.41	-1.63
The Dangs	-	5.31	0.48	5.78

Source : Census of India (1971) Series 5, II-D(1)
Gujarat, Migration Tables, D-I and Appendix I and II.

migration rates. If the in-migration rate is higher than the out-migration rate, the net-migration will be positive and if in-migration rate is lower than out-migration rate net-migration will be negative. So the positive value of net-migration is showing the overall domination of pull factors and the negative value of net migration showing the push factors are dominent.

In 1971 the intra-district net-migration in urban to rural migration stream is negative for all the districts. It means that rural to urban migration stream is dominent over the urban to rural migration streams. In other words, rural to urban migration is higher than the urban to rural migration. In the urban to rural net-migration (within the district) Dangs district is not included because in the district there is no urban population. The net-migration in rural area is recorded high at intra-district level in Ahmedabad, Jamnagar, Rajkot, Surender Nagar, Bhavnagar, Junagarh, Kachchh, Vadodara and Surat (Table 3.5). No doubt, that these all the districts are showing a negative net-migration rates, but there is a difference in terms of magnitude of net-migration rates. The districts which have been indicated above, showing a high net-migration rate which is negative in urban to rural streams within the district. These above districts can be classified into two types, and from these districts the two types of possibilities can be derived. One is that the developed districts like Ahmedabad, Surat, Vadodara and Rajkot, the rural to urban migration is

Table - 3.6

District-wise rural net-migration rates in Gujarat - 1981

Name of districts	Intra-district	Inter-district		Inter-district Combined
	U-R	R-R	U-R	R-R + U-R
	MR 33	MR 34	MR 35	MR 36
Jamnagar	-5.22	0.77	-2.93	-2.16
Rajkot	-5.08	0.36	-2.61	-2.96
Surender Nagar	-3.72	-2.04	-5.59	-7.64
Bhav Nagar	-3.40	-3.13	-6.73	-7.86
Amreli	-1.34	-0.06	-8.39	-8.44
Junagarh	-3.54	0.23	-2.08	-1.85
Kachchh	-3.93	-1.76	-2.18	-3.93
Banaskantha	-0.63	-0.07	-1.52	-1.59
Sabarkantha	-1.01	1.45	-2.38	-0.72
Mahesana	-2.73	-0.91	-7.63	-8.53
Gandhi Nagar	-1.44	3.90	-3.37	0.61
Ahmedabad	-6.93	0.46	-2.11	-1.64
Kheda	-1.27	1.67	-2.70	-1.03
Panch Mahals	-0.43	-2.26	-1.93	-4.17
Vadodara	-3.90	0.20	-0.99	-0.79
Bharuch	-1.36	-0.96	-3.47	-4.43
Surat	-1.87	1.85	-0.99	0.86
Valsad	-1.54	0.10	-1.71	-1.61
The Dangs	-	1.35	-0.12	1.22

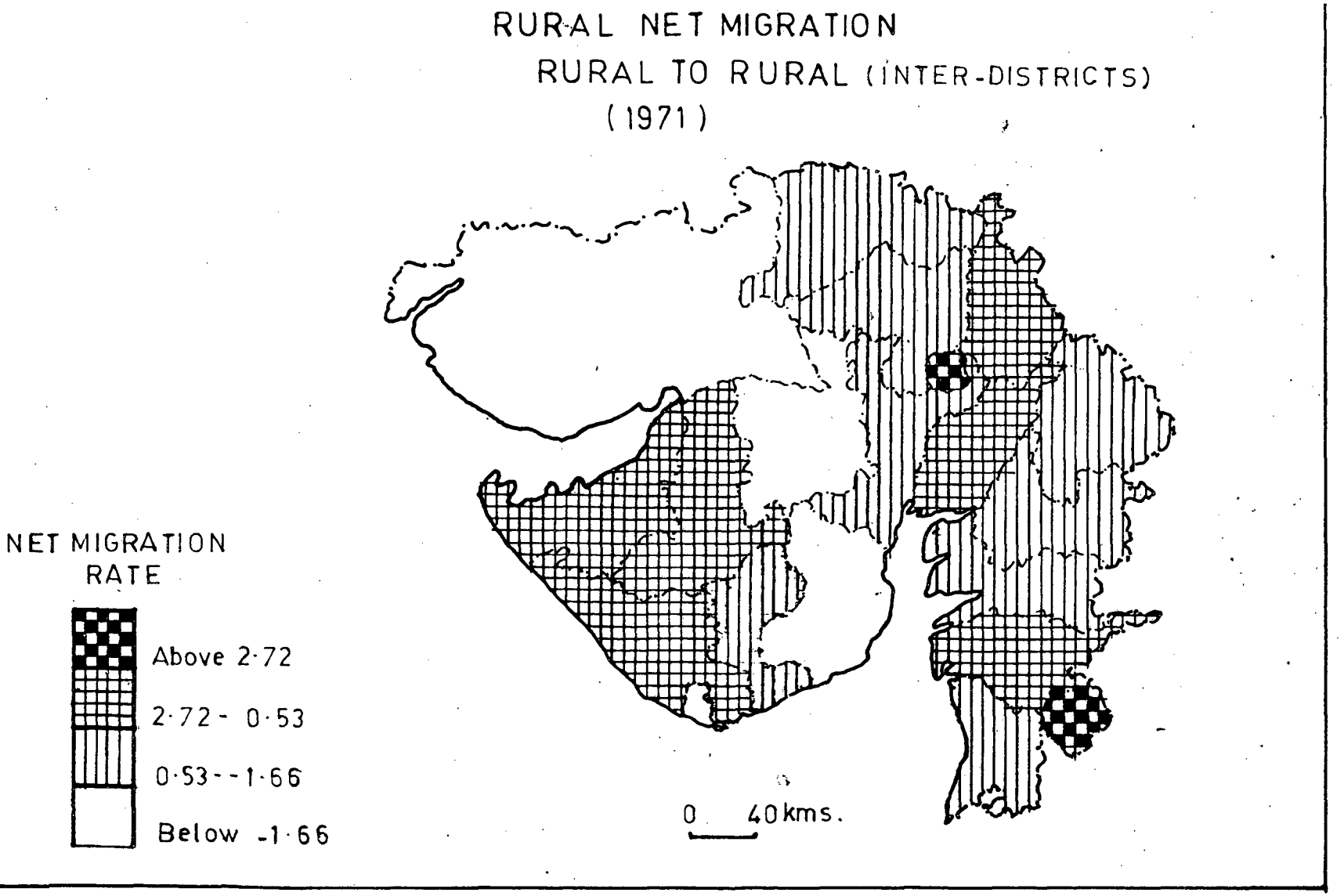
Source: Census of India (1981) Series 5, Part A and B, Gujarat, Migration Tables D-1 and D-13.

attracted by their large urban centres, though their rural areas are also developed. In this way the urban to rural migration will be low. The second types of districts can be classified where the rural areas are relatively backward, like Surender Nagar, Bhav Nagar, Kachchh and Junagarh. There the possibility of high negative urban to rural net-migration can be that, the rural areas of these districts are backward, so in these districts rural to urban intra-districts migration will be higher than urban to rural. Migrants from urban to rural area will not move because rural development infrastructure are very low in these districts.

In 1981 (Table 3.6) urban to rural net-migration at intra district level are shown. Relative position of the district in term of net-migration rates remained same, but the magnitude of net migration is further decreased and the gap between rural to urban and urban to rural migration in rural areas has further increased. There are only four districts where the rural net-migration rate is further increased as comparative to 1971. These districts are Amreli, Banaskantha, Kheda and Surat.

The inter-district net-migration patterns in the state are quite different from intra-district net-migration patterns. The net-migration pattern (inter district within state) in 1971 are given in Table 3.5 in rural areas. For rural to rural migration stream the net migration rates are observed both net negative and positive. Net-migration

RURAL NET MIGRATION
RURAL TO RURAL (INTER-DISTRICTS)
(1971)



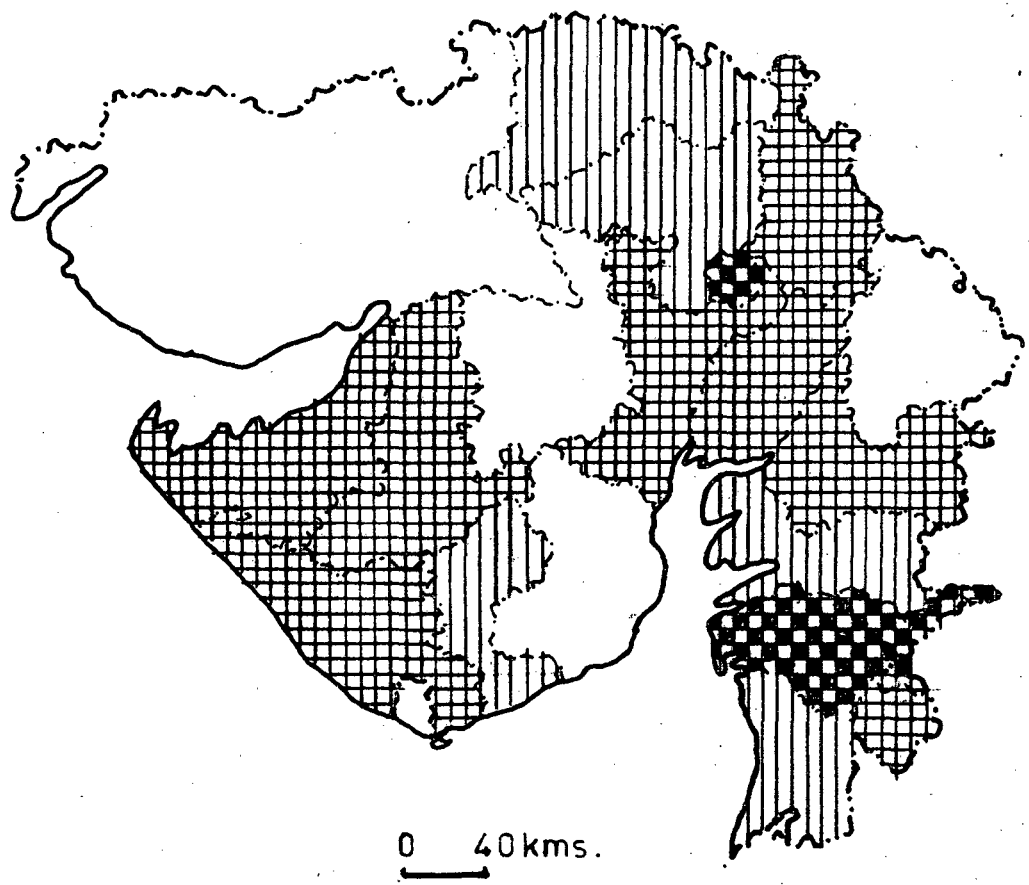
Map - 3 - A

GUJARAT

RURAL NET MIGRATION

RURAL TO RURAL (INTER-DISTRICTS)

(1981)



Map - 3 - B

in Gujarat for 1971 for rural to rural migration streams is shown on map (3.A)[1]. The net-migration rates in Gandhi Nagar and Dangs districts are very high in 1971, whereas in 1981 (Map 3.B) Gandhi Nagar and Surat are showing a very high rural to rural net-migration rates as compared to other districts. In 1971, the districts where the net migration rates are recorded negative for the districts of Surender Nagar, Bhav Nagar, Amreli, Kachchh, Banaskantha, Panch Mahals, Bharuch and Valsad, and Ahmedabad. In all the above districts rural to rural in-migration is low as compared to rural to rural out-migration from these districts to other districts of state. For the negative net-migration rates, the reason may be that the rural areas of these districts are not very prosperous. The rainfall in these districts is very low. In rural to rural net-migration in rural areas, the district which have recorded negative migration rate in 1971, same districts are found in 1981, except Valsad and Ahmedabad, where the rural to rural net-migration has become positive. In all the districts which have recorded negative net-migration rates in 1971, magnitude of net-migration rates have further reduced in 1981. It means that the gap between rural to rural in-migration and rural to rural out-migration has further expanded, and the districts which were retarded for rural to rural in-migration, they are remained same in 1981.

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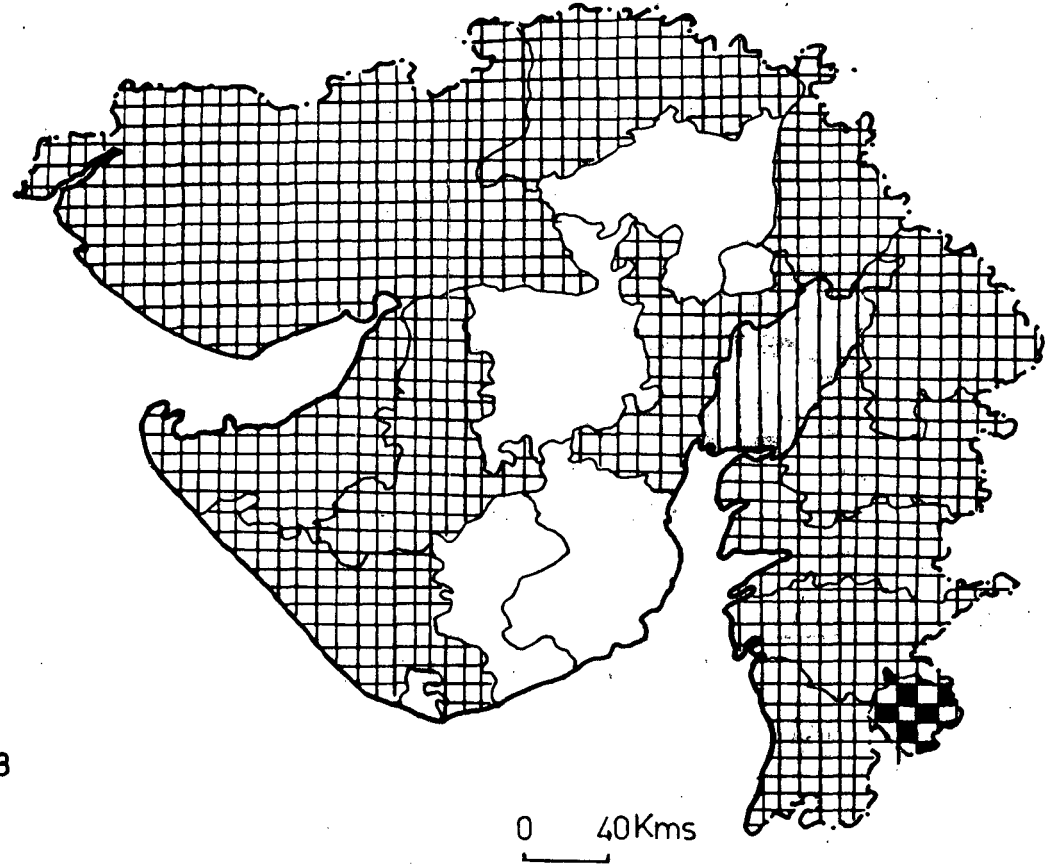
1. The classes of index in the maps are based on the mean and standard deviation of the series.

GUJARAT

RURAL NET MIGRATION

URBAN TO RURAL

(1971)



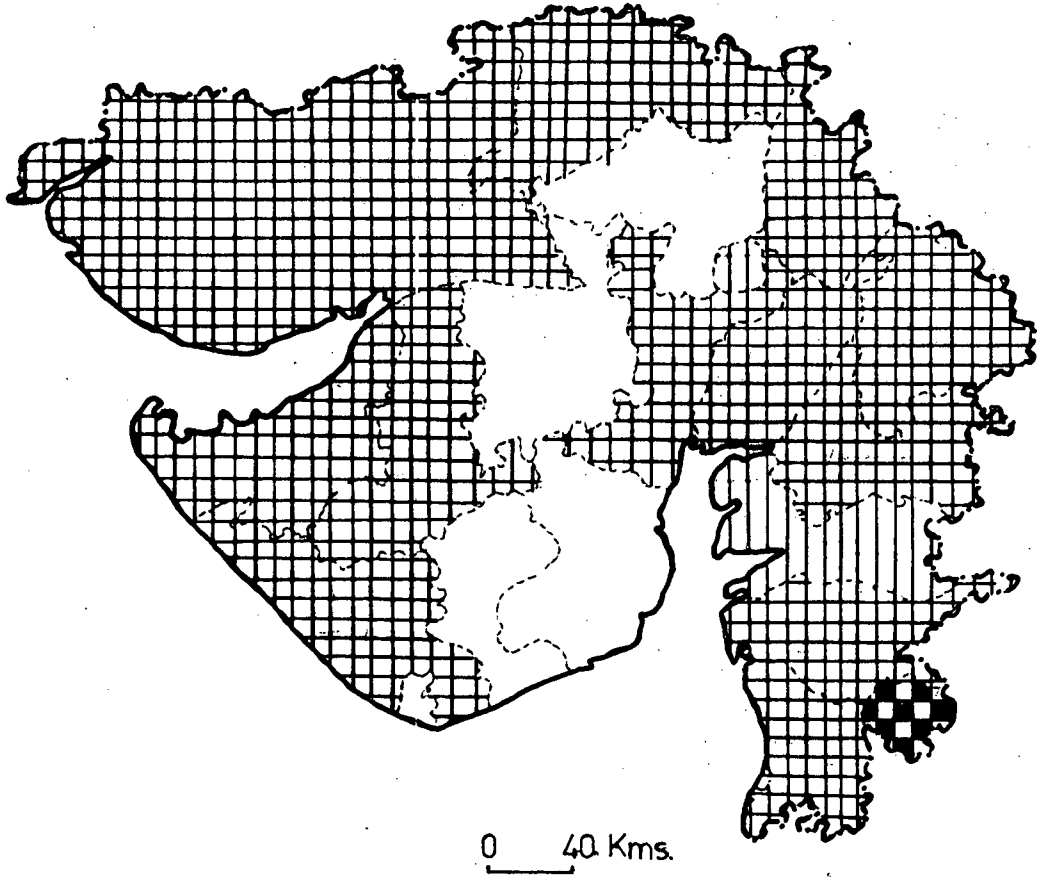
Map-3·C

GUJARAT

RURAL NET MIGRATION

URBAN TO RURAL

(1981)



NET MIGRATION RATE

ABOVE-0·88

-0·88- -3·12

-3·12- -5·36

BELOW -5·36

0 40 Kms.

Map-3·D

Net-migration rates in rural areas at inter-district level for urban to rural migration stream is shown in map (3.c). Except Dangs district, rest of the district of state neg-migration rate is negative. The reason for positive net-migration for the Dangs is that the whole district is rural. The migrants from the district are moving to rural area of the other districts, and rural to urban out-migration rate from the district is very low. The negative net-migration rates (inter district) for all the districts imply that rural to urban migration stream dominent over the urban to rural migrations streams. Urban to rural net-migration in rural areas for 1981, is again negative for all the districts of state (Map 3.D). Now the Dangs district is also showing the net-negative migration (inter district) which is the result of increased in rural to urban out-migration rate from the district and declined in urban to rural in-migration rate in 1981. The districts which are showing a higher negative net-migration rate, inter district in urban to rural stream in 1971 in rural areas, the same districts are also observed for 1981. (Maps 3.C, 3.D).

3.2 Migration patterns in urban area

The urban migration[2] patterns in Gujarat are observed by studying the rural to urban and urban to urban migration streams.

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2. Urban internal migration pattern is shown only for 18 districts of Gujarat. In the census whole population of the Dangs district is classified as rural.

3.2.1 Urban in-migration

The districtwise urban inmigration rate in Gujarat is shown in Tables 3.7 and 3.8 for 1971 and 1981 respectively. The migration rates have been calculated with the help of rural to urban and urban to urban migration streams. Rural to urban and urban to urban in-migration rates are shown in Table 3.7. For within the district, it is found that except the Gandhi Nagar, Ahmedabad and Surat, rest of the districts are showing a high rural to urban in-migration rate. In the district of Ahmedabad, Surat and Gandhi Nagar, the reason for low in-migration rates from rural to urban areas within the district may be that the proportion of male workers in secondary and tertiary activities in rural areas of these districts is very high as compared to other districts of state. Due to the availability of job opportunity in rural area, workers would like to live in rural area only. In 1981 intra-district rural to urban in-migration rate is declined for all the districts except Jam Nagar, Kachchh, Gandhi Nagar, and Bharuch as compared to 1971. But this improvement is very marginal as shown in Table 3.8.

In 1981 at intra-district urban in-migration rates in urban to urban stream is showing an improvement for all the districts of state as compared to 1971 in intra-district urban-urban migration stream. This may be the result of deffusion or concentration of urban population in the urban centres.

Table - 3.7

District-wise urban in-migration rates
Gujarat - 1971

District	Intra-district		Inter-district		Inter-State		Combined both R-U and U-U migration streams		
	R-U	U-U	R-U	U-U	R-U	U-U	Intra-distt.	Inter-distt.	Inter-state
	MU 1	MU 2	MU 3	MU 4	MU 5	MU 6	MU 7	MU 8	MU 9
Jamnagar	10.27	3.20	4.78	5.19	1.74	2.36	13.47	9.96	4.10
Rajkot	10.39	3.96	6.97	5.80	0.77	1.68	14.35	12.76	2.45
Surender Nagar	11.75	5.85	5.48	6.61	1.82	1.67	17.60	15.19	3.49
Bhav Nagar	9.76	3.51	3.68	3.98	0.43	1.40	13.27	7.65	1.83
Amreli	9.44	2.76	5.05	5.77	0.75	0.86	12.20	10.81	1.61
Junagarh	11.33	4.54	4.68	4.50	1.00	1.58	15.87	9.17	2.58
Kachchh	13.80	5.40	2.36	3.11	4.67	4.95	19.20	5.49	9.62
Banaskantha	14.47	2.41	4.58	4.64	2.53	3.07	13.88	9.26	5.60
Sabarkantha	15.15	2.43	0.02	5.88	5.05	2.43	17.58	13.97	7.48
Mahesana	13.82	3.13	4.83	4.32	2.30	2.14	16.95	2.14	4.44
Gandhi Nagar	3.63	0.15	25.42	35.77	10.42	5.52	3.78	61.18	15.94
Ahmedabad	3.65	1.00	15.97	6.54	8.99	4.94	4.65	13.06	13.93
Kheda	11.76	3.86	6.96	5.80	2.22	2.28	15.62	12.74	4.50
Panch Mahals	9.36	3.16	3.45	4.01	3.36	3.83	15.52	7.46	7.79
Vadodara	9.19	2.18	9.48	7.14	4.69	4.58	11.37	16.58	9.27
Bharuch	9.16	2.18	6.30	4.22	2.57	1.77	11.34	10.51	4.34
Surat	6.71	1.06	9.82	4.71	9.67	4.44	7.77	14.84	14.11
Valsad	11.61	4.56	7.58	5.07	4.79	4.65	15.72	12.65	9.34

Source: Census of India (1971) Series 5, Part II-D(1) Gujarat, Migration Tables, D-1.

The inter-district urban in-migration pattern in Gujarat is also shown with the help of rural to urban and urban to urban migration rates. The inter-district rural to urban in-migration rate for 1971 is shown in Table 3.7 as mentioned earlier. Inter-district rural to urban in-migration rate is very low in the district of Kachchh, Panch Mahals, Bhav Nagar, Mahesana, Banaskantha, Junagarh, and Jam Nagar, whereas rest of the district are showing high inter-district rural to urban migration rate. For the low urban in-migration the reasons may be that the urban areas of these districts are not very prosperous in terms of availability of job opportuniti 1981. The district which are showing the higher urban in-migration through rural to urban streams are Valsad, Surat, Bharuch, Vadodara, Gandhi Nagar, Banaskantha, Kachchh, Amreli, and Bhav Nagar as compared to 1971. Among these Surat district recorded the highest growth in rural to urban inter-district migration rate over 1971. Whereas the rest of the districts are showing a marginal improvement in urban inter-district in-migration.

The inter-district urban to urban in-migration rate for almost all the districts of Gujarat in 1981 recorded the higher urban to urban inter-district migration rate as compared to 1971. The districts where the marginal decline has been observed in urban to urban stream are Rajkot, Amreli and Sabarkantha. From above explanation conclusion can be derived that inter-district urban to urban mobility in the state has increased during 1971-81.

Table - 3.8

District wise Urban-immigration rates
Gujarat - 1981

District	Intra-district		Inter-district		Inter-state		Combined both R-U and U-U migration streams		
	MU 19	MU 20	MU 21	MU 22	MU 23	MU 24	Intra-district	Inter-district	Inter-State
	R-U	U-U	R-U	U-U	R-U	U-U	MU 25	MU 26	MU 27
Jamnagar	10.30	3.59	4.51	5.35	1.33	1.86	13.89	9.85	3.19
Rajkot	9.06	3.97	5.39	6.07	1.01	1.53	13.03	11.45	2.54
Surender Nagar	11.73	5.29	4.98	6.88	0.93	1.24	17.03	11.86	2.17
Bhav Nagar	9.00	4.00	3.70	4.21	0.53	1.21	13.00	7.91	1.74
Amreli	8.61	2.91	5.45	5.50	0.74	0.83	11.52	10.94	1.57
Junagarh	11.19	4.76	4.09	4.29	1.75	1.29	15.95	8.37	3.04
Kachchh	14.43	4.64	2.62	3.79	6.48	4.76	19.07	6.40	11.24
Banaskantha	10.29	2.00	4.99	5.01	2.56	2.76	12.29	10.00	5.32
Sabar Kantha	14.91	3.40	6.45	5.26	2.78	1.96	18.31	11.70	4.74
Mahesana	13.64	3.74	4.25	4.60	2.20	1.90	17.38	8.84	4.10
Gandhi Nagar	5.51	0.1	27.07	35.84	3.89	4.34	5.16	62.90	8.18
Ahmedabad	3.28	2.96	11.94	6.65	7.59	5.02	6.24	18.60	12.61
Kheda	11.01	4.48	5.95	6.61	2.64	2.45	15.49	12.56	5.10
Panch Mahals	8.24	2.79	3.31	4.26	2.67	3.06	11.01	7.56	5.73
Vadodara	8.73	3.03	9.43	8.63	5.22	4.28	11.76	18.05	10.20
Bharuch	10.77	2.75	7.39	5.02	3.68	2.86	13.52	12.40	6.54
Surat	4.19	1.69	15.86	5.36	11.72	5.69	5.88	21.21	17.41
Valsad	9.95	4.70	8.34	5.70	6.29	4.91	14.65	14.03	11.20

Source: Census of India (1981) Series 5, Part A & B, Gujarat, Migration Tables D-1.

Inter-state in-migration patterns in urban area in 1971 in rural to urban stream is shown in table 3.7. The districts like Gandhi Nagar, Ahmedabad, Surat, Sabarkantha, Vadodara, Valsad and Kachchh recorded the higher urban in migration rate. In 1981, inter-state in-migration rate in urban areas in the district of Surat, Valsad, Vadodara, Ahmedabad, and Kachchh districts are higher. In Kachchh high inter-state in-migration rate may be due to urban population in the district is very low and the rural area of the district are backward. So only movement from other state or from large distance migrants would like to shift in urban area only.

The districts where urban to urban in-migration rate is high, are the same as they were in rural to urban inter-state urban to urban in-migration rate, is lower than the rural to urban, inter-state migration rate. The district where the inter-state urban to urban migration rate has increased in 1981 over 1971 are Surat, Valsad, Bharuch, Vadodara, Ahmedabad and Kheda, rest of the districts are showing a decline in urban to urban in-migration rate in urban areas.

By observing the Table 3.7 and Table 3.8 for 1971 and 1981, The following pattern can be highlighted. In terms of rural to urban migration rates within the district, the magnitude of rates decreases from intra-districts to inter-district, to inter-states in most of the districts,

the district where the large cities are located like Surat, Vadodara, Ahmedabad, Gandhi Nagar, the rural to urban in migration rate is highest at inter-district level.

The urban to urban migration rate is generally lower than rural to urban in-migration rate. The urban to urban migration rate is higher at inter-district level. As the level of urban to urban migration rates increases like, intra-district, inter-district and inter-state, the urban inmigration rate become more selective in few districts. Same is true in the case of rural to urban in-migration rate.

3.2.2 Urban out-migration

District wise urban out-migration pattern in the Gujarat is shown in Table 3.9 and in Table 3.10 for 1971 and 1981 respectively. The urban out-migration rates are calculated with the help of urban to rural and urban to urban migration streams both at intra-district and inter-district levels.

The urban to rural out-migration rate at intra- district level as shown in Table 3.9 shows that the district where large urban centres are located like Ahmedabad, Surat, Vadodara and Jam Nagar. The urban out-migration rate is low. The urban to rural out-migration at intra-district level in 1981 given in Table 3.10 shows the same patterns of urban out-migration rate, as it is observed in the case of 1971.

Table - 3.9

District-wise Urban Out-migration Rates in Gujarat - 1971

District	Intra-district	Inter-district		Combined U-U and U-R	
				Intra-district	Inter-district
	U-R MU 10	U-R MU 11	U-U MU 12	U-R & U-U MU 13	U-R + U-U MU 14
Jamnagar	1.56	1.03	4.25	5.66	5.28
Rajkot	2.71	1.52	6.98	6.67	8.50
Surender Nagar	2.92	2.64	12.79	8.76	18.99
Bhav Nagar	2.73	2.10	7.88	6.24	9.57
Amreli	3.98	3.87	8.68	6.73	12.54
Junagarh	3.54	1.26	5.21	8.04	6.49
Kachchh	3.76	1.21	4.40	9.16	5.61
Banaskantha	4.80	1.95	2.60	7.21	11.59
Sabarkantha	6.37	2.01	5.57	8.80	7.11
Mahesana	2.89	2.09	9.42	6.02	11.51
Gandhi Nagar	-	1.08	1.31	0.13	2.39
Ahmedabad	0.78	1.57	2.70	1.78	4.27
Kheda	4.60	1.42	8.37	8.47	9.78
Panch Mahals	6.37	2.45	8.21	9.53	10.66
Vadodara	2.62	1.59	4.74	4.80	6.33
Bharuch	6.67	3.08	12.37	8.85	15.42
Surat	1.96	1.12	3.57	3.02	4.68
Valsad	5.71	1.80	5.56	10.26	7.36

Source: Census of India (1971) Series 5, Supplement to Part X-C-II, Gujarat, District Census Hand Books Appendix I and II.

The urban out-migration rates at inter-district level both for urban to rural and urban to urban have been calculated. In terms of urban to rural inter-district out-migration rate the district like Surender Nagar, Amreli, Mehesana, Panch Mahal and Bharuch have observed the higher out-migration rate as compared to other districts of state. In 1981 these districts have again shown the high urban to rural out-migration rates at in inter-district level. The magnitude of out-migration rate has further increased in the districts of Mahesana, Panch Mahals and Bharuch. Except the few districts of state, rest of the districts are showing a decline in urban to rural out-migration at inter-district level, from 1971 to 1981.

Urban to urban out-migration rate at inter-district level in 1971 as given in Table 3.9 shows that urban to urban out-migration rate is higher in the district like Bharuch, Panch Mahals, Kheda, Mahesana, Banaskantha, Amreli, and Surender Nagar. In all the above districts the percentage of workers in primary activities in urban areas is very high as comparative to other districts of state where low urban to urban inter-district out-migration rate is observed. The districts where urban to urban out-migration rate is low are Gandhi Nagar, Ahmedabad, Surat and Vadodara. In these districts the proportion of workers in non-household industry is very high as compared to other districts of state. In 1981 urban to urban out-migration pattern at inter-district

Table - 3.10

District-wise urban out-migration rates in Gujarat - 1981

District Name	Intra-district	Inter-district		Combined both U-U and U-R	
	U-R MU 28	U-R MU 29	U-U MU 30	Intra distt. UR+UU MU 31	Inter Distt. UR+UU MU 32
Jamnagar	1.70	0.90	5.26	5.29	6.16
Rajkot	1.89	1.44	6.79	5.86	8.23
Surender Nagar	2.60	2.39	13.27	7.88	15.66
Bhav Nagar	2.28	1.78	8.49	6.27	10.26
Amreli	3.48	2.65	11.68	6.39	14.33
Junagarh	3.15	1.18	6.09	7.91	7.26
Kachchh	3.89	0.92	4.31	8.54	5.22
Banaskantha	3.67	2.52	10.90	5.67	13.22
Sabarkantha	6.10	1.93	8.16	9.50	10.08
Mahesana	2.99	2.63	11.50	6.73	14.12
Gandhi Nagar	0.18	0.84	1.89	0.27	2.73
Ahmedabad	0.64	1.56	2.68	3.61	4.24
Kheda	5.97	1.90	10.65	10.44	12.55
Panch Mahals	4.87	3.83	11.36	7.66	15.18
Vadodara	2.29	1.56	4.20	5.32	5.75
Bharuch	4.91	3.98	14.33	7.66	18.51
Surat	1.87	0.92	2.74	3.56	3.65
Valsad	4.80	1.82	5.90	9.49	7.70

Source : Census of India (1981) Series 5, Part A and B, Gujarat, Migration Tables, D-13.

level (Table 3.10) shows that the districts where the urban to urban out migration rate was higher in 1971, in 1981 also these districts show the high urban to urban out-migration rate. The magnitude of urban to urban out-migration rate has further increased in 1981 in districts like Surender Nagar, Bhav Nagar, Amreli, Banaskantha, Sabarkantha, Mahesana, Kheda, Panch Mahals and Bharuch. The district where the urban to urban out-migration rate has reduced in 1981 are Surat, Vadodara and Ahmedabad.

By studying the urban out-migration rates both at intra-district and inter-districts, the following are important points which are observed -

(1) The urban out-migration rate whether it is intra-district or inter-district the out-migration patterns remained same. The districts where urban out-migration was comparatively higher in 1971 it remained higher in the same districts in 1981 also and the magnitude of out-migration rate has further increased in 1981 as compared to 1971.

(2) The districts where the urban to urban out-migration rate was observed relatively lower in these districts the urban to urban out-migration rate has further reduced in 1981.

3.2.3 Urban Net-migration

The district-wise net-migration rates in urban area in Gujarat for 1971 and 1981 are shown in Table 3.11 and in

Table - 3.11

District-wise urban net-migration rates in Gujarat - 1971

District	Intra-district	Inter-district		Inter-district Combined both R-U + U-U streams
	R-U	R-U	U-U	
	MU 15	MU 16	MU 17	MU 18
Jamnagar	8.71	3.75	0.93	4.68
Rajkot	7.68	5.45	-1.18	4.26
Surender Nagar	8.83	2.85	-6.18	-3.79
Bhav Nagar	7.03	1.58	-3.90	-1.91
Amreli	5.46	1.18	-2.91	-1.73
Junagarh	7.79	3.40	-0.71	2.68
Kuchchh	10.04	1.14	-1.26	-0.12
Banaskantha	6.67	2.68	-4.96	-2.23
Sabarkantha	8.78	7.02	0.31	6.86
Mahesana	10.93	2.73	-5.10	-2.36
Gandhi Nagar	3.63	24.33	34.46	58.78
Ahmedabad	2.87	14.40	3.84	8.79
Kheda	7.16	5.54	-2.57	2.95
Panch Mahals	3.26	1.00	-4.20	-3.20
Vadodara	6.57	7.86	2.40	10.24
Bharuch	2.49	3.21	-8.21	-4.91
Surat	4.75	8.71	1.14	10.15
Valsad	5.45	5.78	-0.49	5.29

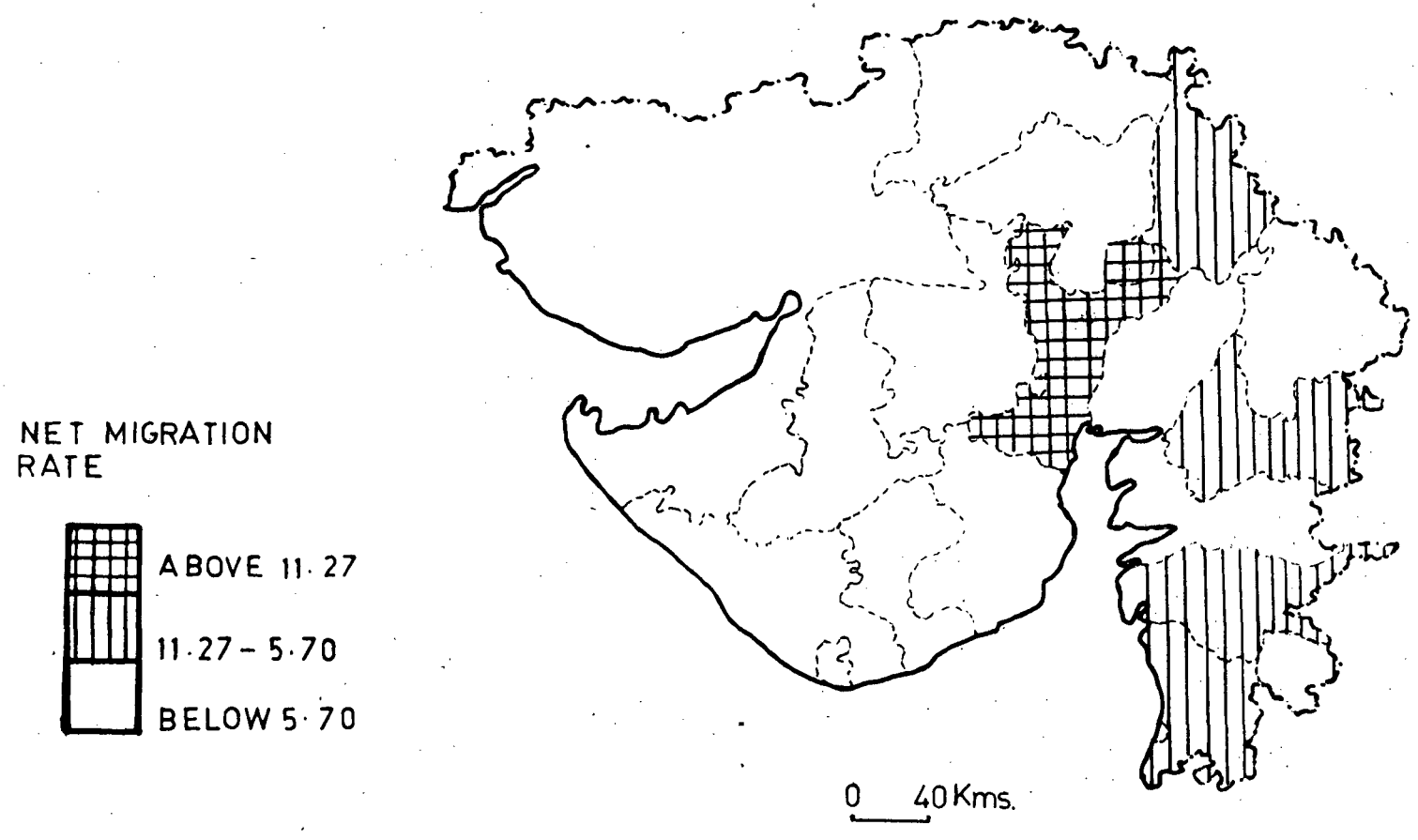
Source : Census of India (1971) Series 5, II-D-(1)
Gujarat, Migration Tables, D-1, Appendix I and II

GUJARAT

URBAN NET MIGRATION

RURAL TO URBAN

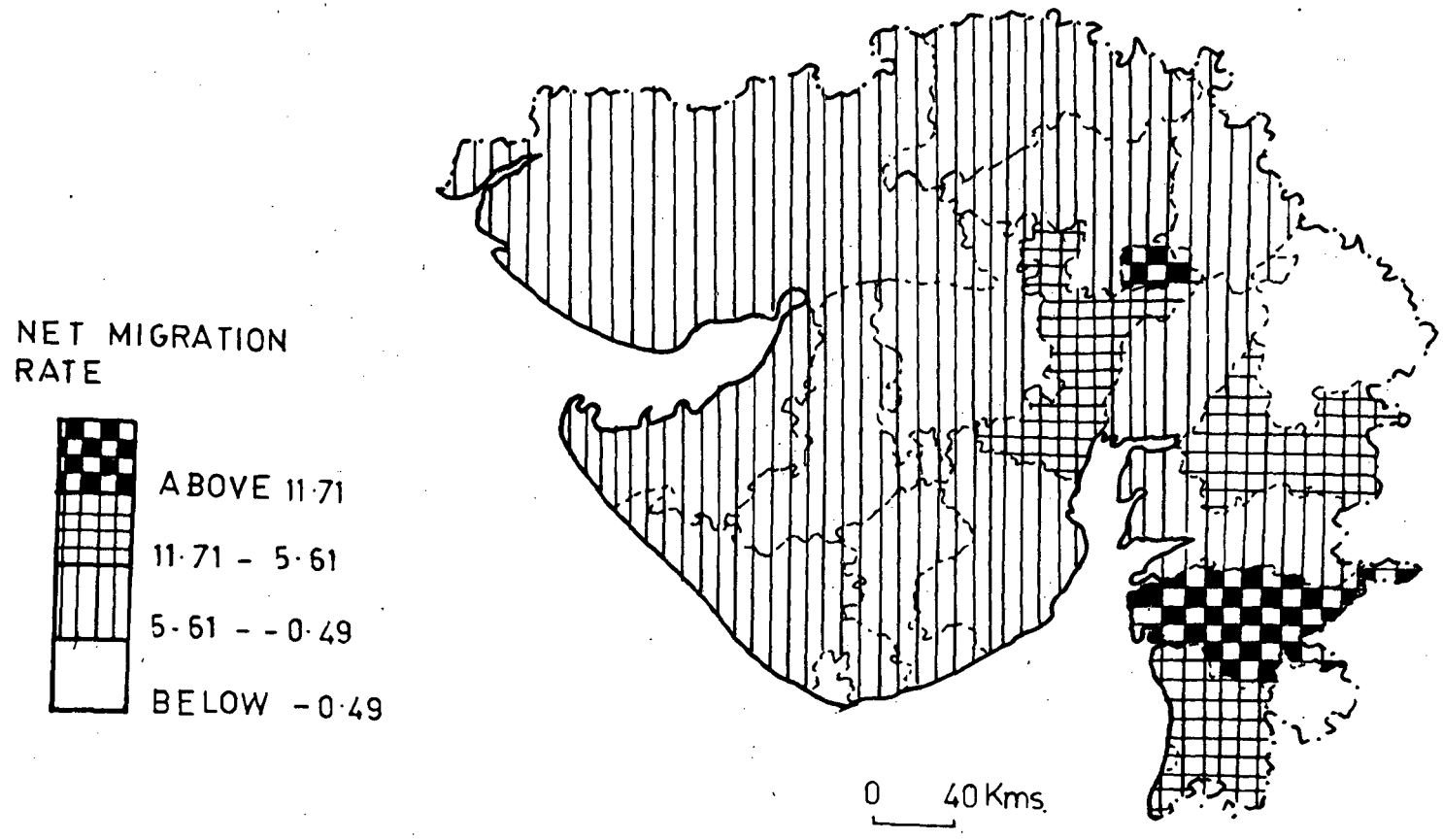
(1971)



Map-3·E

GUJARAT

URBAN NET MIGRATION
RURAL TO URBAN
(1981)



Map-3.F

Table 3.12 respectively. The urban net-migration rate is the balance between urban in-migrants minus urban out-migrants. The net-migration may be negative or positive.

Urban net migration at intra-district level from rural to urban areas in 1971 is found positive for all the districts of Gujarat. It means that the rural to urban in-migration rate is higher than the urban to rural out-migration rate. The net-migration pattern is found almost same for 1971 and 1981, at intradistrict level.

Urban net migration patterns at inter-district level have been explained with the help of rural to urban and urban to urban migration streams. To analyse the change in urban net-migration pattern in 1971 and 1981, the maps are also drawn, for rural to urban and urban to urban migration streams.

In 1971, rural to urban net-migration rate (map 3.E) at inter-district level shows that the Gandhi Nagar and Ahmedabad are the districts where the rural to urban net-migration rate is the highest. The second order districts where the net-migration rate is high, districts like Surat, Vadodara, Sabar Kantha and Valsad, rest of the districts recorded relatively low rural to urban net-migration rate.

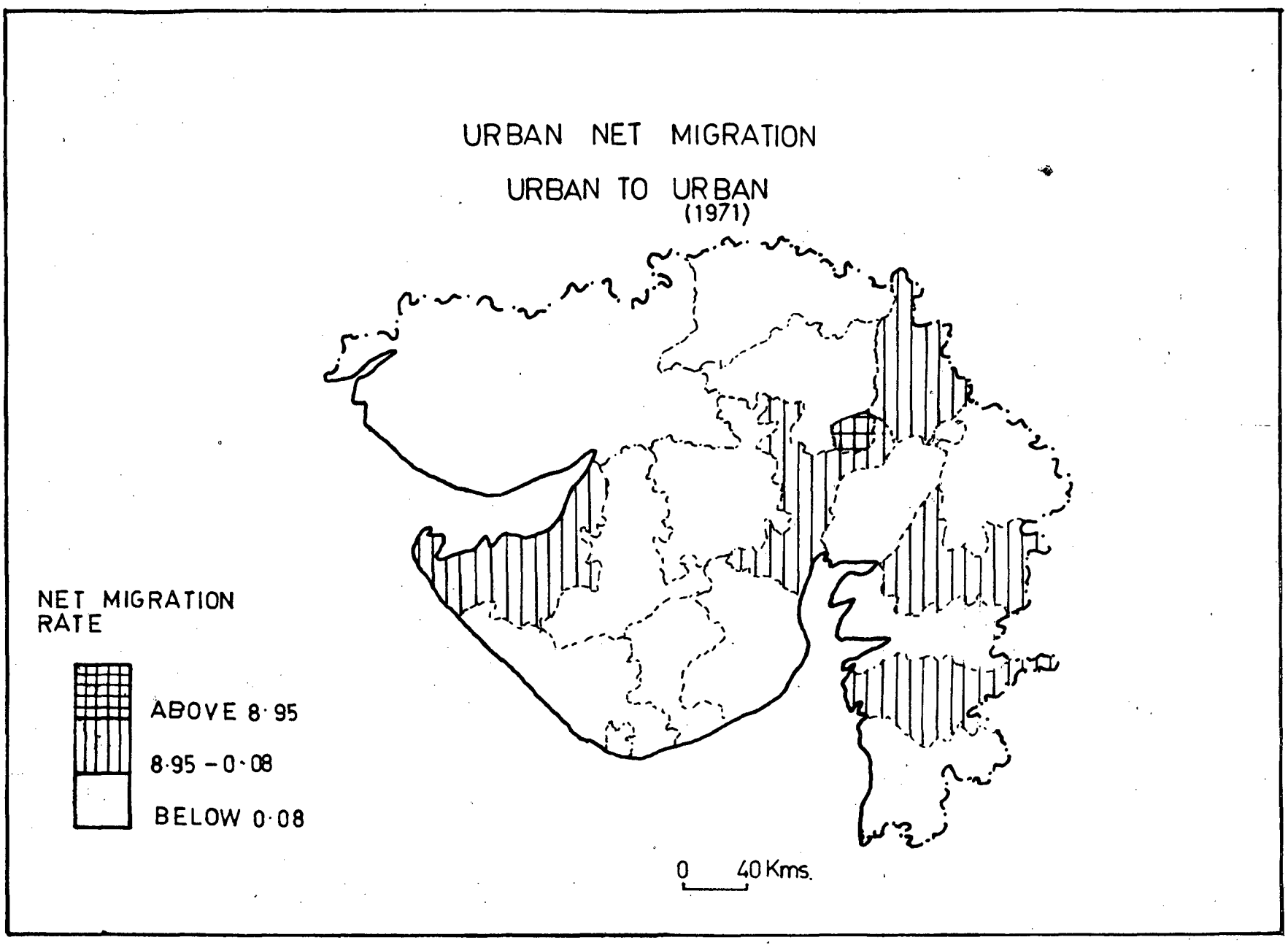
The rural to urban net-migration rate in 1981 the map (3-F) shows that Gandhi Nagar and Surat are in the high category, where rural to urban net-migration rate is very high as compared to other districts. In 1981 in the second

Table - 3.12

District-wise urban net-migration rates in Gujarat - 1981

District	Intra-district	Inter-district		Inter district Combined both R-U and U-U streams
	R-U	R-U	U-U	
	MU 33	MU 34	MU 35	MU 36
Jamnagar	8.60	3.58	0.09	3.67
Rajkot	7.17	3.96	-0.72	3.24
Surender Nagar	9.13	2.59	-6.39	-3.79
Bhav Nagar	6.72	1.92	-4.28	-2.35
Amreli	5.13	2.79	-6.18	-3.38
Junagarh	8.04	2.90	-1.80	1.10
Kachchh	10.54	1.71	-0.52	1.18
Banaskantha	6.62	2.67	-5.89	-3.21
Sabarkantha	8.81	4.52	-2.90	1.62
Mahesana	10.65	1.62	-6.90	-5.28
Gandhi Nagar	4.97	26.22	33.95	60.1
Ahmedabad	2.64	10.38	3.97	14.34
Kheda	5.04	4.04	-4.04	0.01
Panch Mahals	3.37	-0.52	-7.10	-7.61
Vadodara	6.44	7.88	4.43	12.30
Bharuch	5.86	3.41	-9.51	-6.10
Surat	2.32	14.93	2.62	17.55
Valsad	5.15	6.53	-0.20	6.33

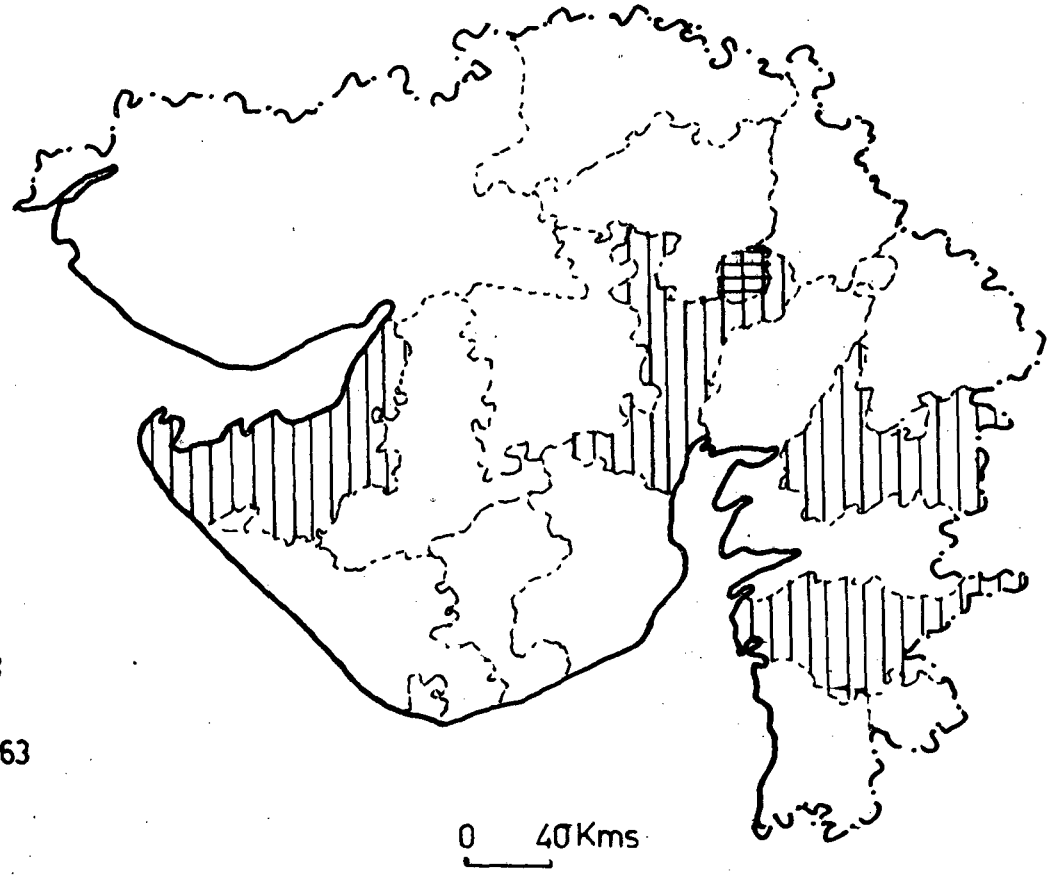
Source: Census of India (1981) Series 5, Part A and B Gujarat, Migration Tables, D-1 and D-13.


URBAN NET MIGRATION
URBAN TO URBAN
(1971)
NET MIGRATION RATE
ABOVE 8·95
8·95 – 0·08
BELOW 0·08
0 40 Kms.

Map-3·G

GUJARAT

URBAN NET MIGRATION
URBAN TO URBAN
(1981)



Map-3·H

category there are only three districts i.e. Ahmedabad, Vadodara, and Valsad. In 1981, there is only one district where rural to urban net-migration is negative that is Panchmahal, where as in 1971 there was no district where negative rural to urban net-migration in urban area observed.

Urban to urban net-migration rate for 1971 is shown on Map (3.G). In Gandhi Nagar district the highest urban to urban net-migration is recorded. In the second category the districts are Ahmedabad, Vadodara, Surat, Jamnagar and Sabarkantha. In rest of the districts urban to urban net-migration rate is very low and the net-migration rate is negative for these districts.

In 1981 the urban to urban net migration pattern in urban area is depicted in Map 3-H. The highest urban to urban net-migration rate is recorded in Gandhi Nagar. In the second category there are four districts where urban to urban net-migration rate is found higher than rest of the districts of state. These districts are Vadodara, Ahmedabad, Surat and Jamnagar. In the Panch Mahal district urban to urban net-migration is negative and it is highest among all the districts of state. It shows that urban to urban out-migration from the district is higher than urban to urban in-migration. There are the districts where net-urban migration rate is recorded higher in 1981 than 1971, by combining both rural to urban and urban to urban at inter

district level. These districts are Surat, Valsad, Vadodara, Ahmedabad and Gandhi Nagar. In rest of the districts of state there is a decline in rural to urban and urban to urban inter-district net migration rate in 1981 as compared to 1971. The above analysis is summarised as below.

By studying the rural and urban migration pattern in the state, it is found that there is a marked differences in the patterns at intra-district, inter-district and inter-state levels. The migration pattern in terms of migration rates in the Gujarat has changed in 1981 as compared to 1971. In the Gujarat there are few districts where both rural and urban in-migration pattern is dominated i.e. Surat, Ahmedabad, Vadodara, Bharuch, Jam Nagar, Rajkot, Gandhi Nagar at inter-district and inter-state levels. In the state there are also the groups of districts like Panch Mahal, Kachchh, Surender Nagar, Banaskantha, Bhavnagar, Junagarh, Mahesana etc. where the out-migration from rural and urban areas is dominated. The magnitudes of in-migration, out-migration and net-migration rates have changed in 1981 as compared to 1971. In case of some districts the migration rate has increased, whereas in other it decreased the main factor which affects the migration are the socio-economic, and infrastructural. So to analyse the migration patterns in the state at district level, it is necessary to know the distribution pattern in the state at district level in terms of socio-economic and infrastructural variables. These all the variables are being discussed in more detailed in the fourth chapter of the present study.

CHAPTER - 4

Rural and Urban Development in Gujarat - A Spatio-temporal Analysis

When a migrant moves from a particular origin to some particular area of destination, there are many factors which determine his movement. These factors may work both at the place of origin and at the place of destination or in between these two. The important factors which caused the movement of people from one place to other places, are socio-economic infrastructural, political and physiographical. These factors differ from place to place and from region to region. Generally, the migrants move from one place to other place for economic purposes. The areas where socio-economic and other facilities are in abundance, attract the migrants from other places where these facilities are scarce.. The areas where job opportunities and other socio-economic facilities are available exert pull factor, and attract the migrants from other places. In such area the in-migration rate will be very high and the net migration rate will also be positive. There are also the areas where the job-opportunities or some other socio-economic facilities are not available satisfactorily, in such areas the push factors are dominant. In these areas the out-migration rate will be very high as compared to the areas where pull factors are dominant.

There are many socio-economic factors like levels of agriculture development, industrial development,

infrastructural facilities and levels of individual's development (education etc), these all factors caused the regional disparities in development. On the basis of these factors the backward and the forward region can be identified in a country. So, on the basis of socio-economic and infrastructural development indicators the in-migration and the out-migration patterns in a region can be identified.

Keeping in mind the above view in the present chapter an attempt has been made to identify the rural and urban development patterns at district level in Gujarat. The rural and urban development patterns are explained in the state with the help of individual development indicators. To study whether the development patterns in case of each indicator has changed or remained same. All the developmental indicators are studied at two time periods i.e. 1971 and 1981. In the study the co-efficient of variance has also been worked out in case of each indicator to see whether the co-efficient of variance has changed or remained same in the distribution of each development indicator in Gujarat at district level.

In the study the rural and urban development indicators are studied separately. The list of rural and urban developmental indicators with their abbreviated name, which are used in study are given in the second chapter of the present study. The main purpose of this chapter is to trace out the distribution patterns of each developmental indicators in the state.

Table - 4.1

Rural Development Indicators in Gujarat - 1971

Name of district	DIR 1	DIR 2	DIR 3	DIR 4	DIR 5	DIR 6	DIR 7	DIR 8	DIR 9	DIR 10	DIR 11	DIR 12	
Jamnagar	41.51	1.08	11.0	53.5	65.08	13.3	84.9	6.200	8.9	70.5	7.12	31.88	
Rajkot	65.63	1.07	14.5	51.6	62.4	16.3	83.33	7.3	8.5	125.8	7.5	38.89	
Surender Nagar	64.54	1.03	7.3	52.7	54.6	26.6	85.1	7.5	7.5	69.5	12.07	32.28	
Bhav Nagar	54.68	1.05	11.3	51.6	56.3	23.00	85.4	7.1	9.4	87.3	4.7	34.91	
Amreli	73.17	1.06	9.7	52.3	61.5	20.06	85.07	6.3	8.1	141.0	8.25	40.05	
Junagarh	56.63	1.11	17.8	52.6	61.7	19.7	85.5	6.3	8.2	141.3	9.27	33.66	
Kachchh	13.56	1.04	10.3	54.4	52.4	21.5	81.4	7.2	11.5	21.1	15.3	29.91	
Banaskantha	66.39	1.12	13.8	55.2	70.3	14.8	90.7	4.0	8.4	66.0	16.6	20.64	
Sabarkantha	62.77	1.1	14.3	51.3	67.2	14.7	83.8	5.9	10.3	93.5	25.3	42.21	
Mahesana	75.83	1.19	25.5	49.6	56.6	23.0	81.9	7.10	11.2	95.3	9.45	46.88	
Gandhi Nagar	75.19	1.14	23.8	51.3	43.2	25.0	72.3	13.6	14.0	158.7	6.48	52.48	
Ahmedabad	70.81	1.04	13.8	51.9	46.7	31.0	80.8	8.7	10.5	104.5	11.47	43.32	
Kheda	72.02	1.11	26.3	52.2	60.2	23.5	85.3	5.9	8.7	153.7	7.38	51.94	
Panch Mahals	54.88	1.15	4.8	55.6	85.5	6.9	93.0	2.2	5.0	120.5	45.54	29.73	
Vadodara	69.96	1.03	17.8	54.8	50.2	34.5	85.7	6.4	9.7	121.2	39.23	41.96	918.0
Bharuch	50.17	1.01	12.2	53.7	43.8	42.8	88.2	4.7	7.1	94.8	55.28	42.76	955.0
Surat	57.14	1.06	14.4	54.5	44.1	34.4	80.7	11.5	7.9	140.7	67.97	39.33	982.0
Valsad	55.8	1.1	12.5	51.2	49.1	25.8	78.3	11.6	10.0	139.2	63.77	42.22	1015.0
The Dangs	27.21	1.00	0.2	56.55	67.7	17.0	89.6	3.3	7.0	230.7	93.82	20.8	946.0
Co-efficient of variance	0.28	0.04	0.47	0.034	0.18	0.37	0.05	0.40	0.21	0.39	0.99	0.23	0.03

4.1 Rural Development Indicators

To study the rural development patterns thirteen developmental indicators have been considered in 1971 for which the data were available. Their number has increased to 16 indicators. For each rural developmental indicator values are shown in Table 4.1 for 1971. The first three indicators i.e. DIR 1, DIR 2, and DIR 3 are related to agriculture development. The DIR 1 is the percentage of net area sown to total geographical area of the district. The district where the percentage of net area sown is highest are the Mohesan, Gandhi Nagar, Ahmedabad, Kheda, Amreli and Vadodara. The least proportion of net area sown to total geographical area in Kachchh, Dangs and Jamnagar. The same indicator in 1981 is denoted by DIR 14 and shown in Table 4.2. The co-efficient of variation has reduced in 1981. It means that the inter-district variation in terms of net area sown has reduced in 1981. There are the districts where the net area sown has reduced in 1981 in relation to 1971; these districts are Surat, Ahmedabad, Gandhi Nagar, Surender Nagar, Rajkot and Mahesana. This may be due to the occupation of more area under non-agricultural activities.

The next variable to be discussed is the crop intensity, i.e. the proportion of net cropped area to gross cropped area (DIR 2 for 1971 and DIR 15 for 1981). The district where the crop intensity is higher are Mahesana, Panch Mahal,

Table - 4.2

Rural Development Indicators in Gujarat - 1981

Name of district	DIR 14	DIR 15	DIR 16	DIR 17	DIR 18	DIR 19	DIR 20	DIR 21	DIR 22	DIR 23	DIR 24	DIR 25	DIR 26	DIR 27	DIR 28	DII
Jamnagar	42.3	1.17	25.0	53.9	63.1	15.5	83.0	7.9	9.2	120.3	8.0	42.41	958.0	452.2	705.6	73
Rajkot	64.0	1.13	21.0	53.2	57.8	18.1	79.7	10.10	10.2	167.2	8.02	50.25	952.0	535.1	766.7	85
Surender Nagar	61.7	1.01	11.4	54.0	50.2	25.8	81.0	10.8	8.3	151.8	12.28	41.48	939.0	489.2	761.4	67
Bhav Nagar	56.1	1.12	17.1	53.9	52.0	25.3	80.05	11.4	8.1	155.6	5.43	43.66	967.0	525.2	748.2	84
Amreli	73.8	1.09	13.6	52.7	58.1	21.9	83.7	7.70	7.9	232.7	9.36	48.76	982.0	524.5	773.5	84
Junagarh	57.6	1.16	19.2	52.0	59.0	21.5	83.80	7.70	8.4	204.2	10.04	47.55	957.0	562.0	760.7	93
Kachchh	14.3	1.05	10.4	53.2	45.8	23.7	78.6	9.5	12.0	48.5	18.5	37.04	1026.0	548.2	835.5	77
Banaskantha	64.3	1.18	23.0	53.8	64.9	16.7	84.2	6.4	9.4	153.6	17.2	31.25	947.0	338.7	604.5	62
Sabarkantha	60.4	1.12	39.9	52.3	61.4	18.0	81.5	7.2	11.3	223.1	26.73	51.87	981.0	191.3	484.9	76
Mahesana	74.8	1.31	39.3	50.8	49.4	25.8	77.6	9.3	13.1	175.4	8.97	55.41	978.0	692.3	826.2	76
Gandhi Nagar	74.3	1.17	41.9	50.9	33.3	27.1	63.9	18.3	19.3	376.0	6.1	60.09	944.0	769.0	901.4	100
Ahmadabad	67.3	1.05	16.4	53.6	39.9	33.1	76.6	12.3	11.3	271.5	12.0	52.84	934.0	494.5	844.5	871
Kheda	71.8	1.16	42.7	53.8	52.2	26.8	81.0	8.6	10.5	391.9	7.47	60.42	915.0	720.2	860.9	96
Panch Mahals	53.4	1.12	8.4	55.9	80.4	8.9	90.1	3.3	6.7	236.5	48.5	37.1	961.0	372.3	537.7	37
Vadodara	68.3	1.04	22.1	57.4	46.7	35.9	83.9	8.0	8.1	243.1	43.16	49.21	929.0	408.8	678.0	787
Bharuch	47.9	1.01	10.4	56.9	39.2	39.7	81.4	8.2	10.0	211.0	55.44	52.24	949.0	448.9	701.6	628
Surat	52.3	1.07	28.9	58.8	39.6	33.2	75.8	15.1	9.1	256.8	68.77	45.6	982.0	438.2	706.7	70
Valsad	56.5	1.1	16.7	54.8	45.4	22.6	71.1	17.4	11.5	346.3	65.68	51.46	1007.0	475.5	817.0	84
The Dangs	28.7	1.0	0.02	57.0	63.2	15.2	82.4	6.2	11.3	235.8	92.71	38.38	970.0	291.0	385.2	241
Co-efficient of variance.	0.27	0.06	0.52	0.04	0.21	0.32	0.06	0.38	0.26	0.38	0.95	0.16	0.02	0.29	0.18	(

Gandhi Nagar, Kheda and Junagarh. In 1981, the co-efficient of variation has increased as compared to 1971. The reason for higher disparity in crop-intensity in 1981 is clear from the table.

Percentage of gross irrigated areas to total gross cropped area are shown for 1971 and 1981 respectively (DIR 3 for 1971 and DIR 16 for 1981). The disparity in terms of gross crop irrigated area has increased from 0.47 to 0.52 from 1971 to 1981. The districts where high gross crop irrigated area was recorded in 1971 are Kheda, Mahesana, Gandhi Nagar, Junagarh and Vadodara. In 1981 the district where the higher gross crop irrigated area was recorded are Kheda, Gandhi Nagar, Mahesana, Sabarkantha, Surat and Jamnagar. In the case of other districts the gross-irrigated area almost remained same as it was in 1971.

Percentage of rural male workers to total rural male population (DIR 4 in 1971 and DIR 17 in 1981). The districts where the percentage of male workers are high in the Dangs, Panch Mahals and Kachchh. In 1981 the districts where high proportion of male workers is recorded are Surat, Dangs, Vadodara, Bharuch and Panch Mahals. The disparity in the distribution of workers in different districts has increased during 1971-81.

The percentage of cultivator to total male workers (DIR 5 in 1971 and DIR 18 in 1981) are shown for 1971 and 1981 respectively. The districts where the highest percentage of cultivator is recorded are in the Dangs, Panch Mahals,

Kheda, Banaskantha, Sabarkantha, Rajkot and Jamnagar. In these districts the percentage of male workers to total male population of the district is also high. In 1981 the percentage of cultivators have reduced for all the districts. It is that the cultivators may have been engaged in some other activities from where they can get more income. The disparity in terms of percentage distribution cultivators has further increased in 1981.

Percentage of agricultural labours to total male workers of the district (DIR 6 in 1971 and DIR 19 in 1981) for 1971 and 1981 are also given in Table 4.1 and in 4.2 for 1971 and for 1981 respectively. The co-efficient of variation has decreased in 1981, it means that proportion of agricultural labour has redistributed further into different districts of Gujarat. This may be due to the agricultural infrastructural development in other districts of the state, and also due to the increase in net sown area. The districts where proportion of agricultural labour is higher as compared to other districts of state are Surat, Bharuch, Vadodara, Panch Mahals, and Ahmedabad in 1971. The proportion of agriculture labour has increased almost for all the districts of state except the districts of Dangs, Valsad, Surat, Bharuch and Surender Nagar where proportion has declined.

The proportion of workers in primary activities (DIR 7 in 1971 and DIR 20 in 1981) are discussed next. The

co-efficient of variation has increased in 1981. Almost all the districts of the state are showing the high proportion of workers in primary activities. The districts where the proportion of workers in primary activities is relatively lower than other are Surat, Bharuch, Ahmedabad, Gandhi Nagar, Jamnagar and Rajkot. The proportion of workers in primary activities has declined in 1981 for all the districts except Panchmahal, and Bharuch, where the proportion has further increased.

The percentage of male workers in secondary activities to total male workers in the districts of Gujarat are shown by DIR 8/DIR 21 for 1971 and 1981 respectively. The co-efficient of variation has declined in 1981. It means that the proportion of workers in secondary activities has increased in 1981, whereas it was not high in 1971. The districts where proportion of workers was high in 1971 were Surat, Valsad, Gandhi Nagar and Ahmedabad. In 1981 all the districts of the state are showing improvement in the secondary activities. These figures are just opposite to the proportions of workers in primary activities have declined whereas the proportion of workers in secondary activities increases.

The percentage of workers in tertiary activities to total male workers (DIR 9 in 1971 and DIR 22 in 1981) in the district show that the co-efficient of variation in 1981 has increased as compared to 1971. The co-efficient

of variation has declined in the case of secondary activities as shown above. It means that the tertiary activities are not developed in all the districts of state but only in few districts. The districts where the proportion of workers in tertiary activities are high in Surat, Vadodara, Gandhi Nagar, Ahmedabad, Mahesana, Sabarkantha and Bhavnagar. In the 1981, the districts where the proportion of workers in tertiary activities increased significantly are the Dangs, Gandhi Nagar, Mahesana and Vadodara. The districts where the proportion of workers in tertiary aactivities in rural area has declined are, Bhavnagar, Amreli and Panch Mahals. Except the Panch Mahals where the proportion in tertiary activities may decline because the proportion of workers in primary activities has increased, whereas in other two districts the proportion of workers in tertiary activities may be declined due to the proportion of worker in secondary activities has increased, and the worker might have shifted from tertiary to secondary activities.

In terms of infrastructural developmental indicator the length of metalled read per 1000 sq. km of area is shown by DIR 10 for 1971 and by DIR 23 in 1981 respectively. The district-wise distribution of metalled road shows that the disparity has reduced in 1981. The districts where the least length of road per 1000 sq. km of area is recorded are Kachchh, Banaskantha, Surender Nagar and Jamnagar. In 1981, the proportion of metalled road per 1000 sq. km of

area has significantly improved in these districts. All the districts of state in 1981 are showing a significant improvement in the proportion of metalled road as compared to 1971.

The percentage distribution of S.C. and S.T. population in the rural area to the total population of rural area of the district in 1971 and 1981 are denoted by DIR 11 and DIR 24 respectively. The distribution of Scheduled Caste and Scheduled Tribes population in the district is showing very high co-efficient of variation. In 1981 the co-efficient of variation value has reduced by just four percent. The Scheduled Castes and Tribes population in the districts are mainly concentrated in the south-eastern part of the Gujarat, in the districts of Dangs, Valsad, Surat, Vadodara and Panch Mahals.

The literacy rate among the rural male population to the total rural male population of the districts is shown by DIR 12 in 1971 and by DIR 25 in 1981. The co-efficient of variation in literacy rate among the rural male population has declined in 1981. All the districts of the state are recorded a high proportion in rural male literacy rate. The districts where the percentage of rural male workers is high in the state are Surat, Vadodara, Kheda, Gandhi Nagar, Ahmedabad, Mahesana, Sabarkantha and Rajkot.

The sex-ratio (proportion of female behind per 1000 or male) are shown by DIR 13 in 1971 and DIR 26 in 1981. The

distribution of sex ratio shows that there is declined in the co-efficient of variation in 1981 as compared to 1971. There are two districts in the state where sex ratio is higher but they are just opposite in their rural development. One of these districts is Valsad and other is Kachchh. The reason for high sex-ratio in the case of Kachchh is that in this district the net sown area is the lowest in state and whole area is covered as marshy lands and as a result the male out-migration from the rural area is high. In the case of Valsad which is located near to Bombay and the proportion of S.C. and S.T. population in the rural area of the district is also high. The crop intensity in the district is very low. These above factors may be the cause of male out-migration from the district's rural area.

There are 3 variables for which the data available are for 1981 only. These relate to medical facility, postal facility and power supply. The DIR 27 is showing the availability of medical facilities per 1000 of rural population The districts where the proportion of the medical facility is high, the districts are Kheda, Ahmedabad, Junagarh, Gandhi Nagar. The district where the medical facility is very low in the rural area, these districts are The Dangs, Sabarkantha and Banaskantha. DIR 28 rural development indicator shows the availability of telegramme and post office per 1000 of rural population is shown by DIR 28. In the Gujarat except the district of Dangs and Kachchh, the other

districts of state are showing a high proportion in the availability of post and telegram office. The reasons for the low proportion of post and telegram office per 1000 of rural population in Dangs and Kachchh districts may be that the density of population in these two districts is very low. The DIR 29 which indicates the availability of power supply per 1000 of rural population in the districts. The rural areas in the districts of Dangs, Panch Mahals, Bharuch and Banaskantha are showing a low proportion of power supply per 1000 of rural population of the district. There are also the districts, like Gandhi Nagar where 100% of power supply is recorded in total rural areas.

From the above discussion there is a mix picture which has been observed in terms of rural development indicators. The indicators which shows that the disparity has declined (because the co-efficient of variation is low in 1981 as compared to 1971. The indicators are percentage of net are shown to total geographical area of the district (DIR 1/DIR 14), percentage of agricultural labours to total male workers (DIR 6/DIR 19), percentage of workers in secondary activities (DIR 8/DIR 21), metalled road per 1000 sq. km of area (DIR 10/ DIR 23), percentage of S.C./S.T. population to total rural population of district (DIR 11/ DIR 24), literacy rates among rural male (DIR 12/DIR 25), sex-ratio in rural area (DIR 13/DIR 26), and the rest of the indicators in districts rural areas are showing an increase in the disparity in terms of development from 1971 to 1981.

Table - 4.3

Urban Development Indicators in Gujarat - 1971

Name of district	DIU 1	DIU 2	DIU 3	DIU 4	DIU 5	DIU 6	DIU 7	DIU 8	DIU 9	DIU 10	DIU 11	DIU 12	DIU 13
Jamnagar	45.3	11.4	27.8	32.0	56.7	70.5	58.74	932.0	35.31	5.04	3.34	0.79	13.8
Rajkot	45.2	11.0	26.7	31.0	59.3	125.8	65.63	939.0	38.37	4.38	1.57	0.66	11.817
Surender Nagar	44.9	16.5	25.9	31.6	51.7	69.5	60.82	935.0	27.01	5.4	2.03	0.81	10.13
Bhav Nagar	44.7	13.4	24.0	29.5	57.1	87.3	61.79	921.0	31.99	4.8	2.39	0.8	16.08
Amreli	46.1	31.07	13.05	21.3	47.1	141.0	58.22	939.0	19.88	4.74	1.67	0.75	23.63
Junagarh	45.1	20.2	20.6	24.7	55.1	141.4	58.69	931.0	29.3	5.37	1.53	0.59	17.02
Kachchh	47.7	11.9	14.9	19.2	68.9	21.1	58.58	944.0	25.25	7.22	2.03	0.90	23.54
Banaskantha	46.7	17.3	15.2	25.7	57.0	66.0	56.9	940.0	9.45	4.45	2.62	0.74	23.29
Sabar Kantha	47.9	15.0	15.8	24.6	60.5	93.5	63.66	891.0	8.75	5.15	1.86	1.4	26.99
Mahesana	45.7	17.8	21.0	28.7	53.6	95.3	62.2	928.0	18.58	4.4	2.58	0.98	24.91
Gandhi Nagar	51.9	12.7	13.7	37.4	49.9	158.7	63.12	858.0	11.99	7.97	2.07	1.08	16.4
Ahmedabad	48.3	3.9	44.1	48.7	47.4	104.5	65.44	838.0	66.83	4.9	1.87	0.90	22.39
Kheda	45.1	17.8	23.2	30.6	51.55	153.7	67.67	886.0	19.94	4.77	2.28	1.20	18.75
Panch Mahals	46.0	17.7	10.7	16.9	65.4	120.5	65.34	934.0	11.21	4.83	2.75	1.05	16.15
Vadodara	47.5	8.4	32.23	37.6	53.9	121.2	69.83	863.0	30.46	4.86	2.96	0.85	16.0
Bharuch	47.1	18.2	19.4	26.5	55.2	94.8	63.47	926.0	17.39	7.19	1.80	1.10	18.21
Surat	53.9	5.9	42.9	58.5	35.8	140.7	64.12	880.0	33.73	8.96	1.69	0.62	34.74
Valsad	49.5	12.0	32.4	40.1	47.0	139.2	64.82	919.0	17.95	9.33	2.03	0.74	12.31
Co-efficient of variance	0.05	0.41	0.47	0.32	0.13	0.33	0.05	0.03	0.55	0.28	0.27	0.24	0.32

4.2 Urban Development Indicators

There are 13 urban development indicators for 1971, as well as for 1981. The urban development indicators collected for 1971 are the same as the urban development indicators collected for 1981. The list of indicators is given in the methodology section of the second chapter of the present study. The values of these urban developmental indicator are shown in Table 4.3 and in Table 4.4 for 1971 and 1981 respectively. The main purpose to study these variable is to see the change (if any) in the values of the development indicator and to trace out the possible reasons for the change. For measuring the change the co-efficient of variation is also computed for each indicator for 1971 as well as for 1981.

The first urban development indicators that is the percentage of urban male workers to total urban male population for 1971 and 1981 of the district is denoted by DIU 1 for 1971 and by DIU 14 for 1981. There is no change in the co-efficient of variation. All the districts of the state show an increase in the percentage of male urban worker to total male population of the district. The Dangs district is not shown in the Table because, in the district whole population is rural.

The percentage of urban workers in primary activities to total urban workers is denoted by DIU 2 for 1971 and by DIU 15 for 1981. The co-efficient of variation is again

Table - 4.4

Urban Development Indicators in Gujarat - 1981

Name of district	DIU 14	DIU 15	DIU 16	DIU 17	DIU 18	DIU 19	DIU 20	DIU 21	DIU 22	DIU 23	DIU 24	DIU 25	DIU 26
Jamnagar	50.0	11.0	30.1	35.1	54.0	120.3	63.15	934.0	37.44	6.06	2.6	0.98	20.9
Rajkot	49.4	10.2	30.8	35.4	54.3	167.2	69.3	941.0	41.29	4.83	1.64	1.13	27.17
Surender Nagar	49.3	14.2	31.1	36.8	49.0	151.8	66.44	923.0	28.72	9.52	4.73	1.3	56.23
Bhav Nagar	48.8	12.7	27.1	33.0	54.4	155.6	65.86	940.0	33.29	5.77	2.5	1.07	14.88
Amreli	48.4	29.7	14.4	21.9	48.6	232.7	64.01	954.0	20.42	8.62	2.02	1.13	28.9
Junagarh	47.1	22.4	21.0	25.6	51.8	204.2	64.49	950.0	30.46	6.44	2.0	0.91	52.93
Kachchh	51.0	9.6	16.0	21.6	68.7	48.5	63.23	926.0	26.13	7.69	2.39	1.5	28.78
Banaskantha	47.5	13.0	20.3	27.7	59.2	153.6	63.79	932.0	8.64	5.51	2.82	1.06	23.01
Sabarkantha	47.6	13.5	13.2	20.5	66.0	223.1	68.9	925.0	9.9	6.15	3.62	1.72	39.76
Mahesana	47.2	14.7	24.4	29.8	55.5	175.4	68.28	941.0	20.07	8.06	3.38	1.63	33.43
Gandhi Nagar	46.2	6.8	6.8	16.9	76.2	376.0	73.87	857.0	21.6	7.50	1.6	1.58	13.35
Ahmedabad	49.9	3.5	44.1	49.0	47.4	271.5	70.29	874.0	71.76	5.31	2.67	0.98	28.89
Kheda	48.3	15.0	26.9	33.1	52.0	391.9	70.66	917.0	20.11	6.13	3.22	1.62	31.01
Panch Mahals	47.1	14.1	13.5	19.8	66.1	236.5	70.07	940.0	11.09	5.8	3.7	1.29	32.54
Vadodara	50.5	8.4	35.4	40.5	51.1	243.1	73.83	894.0	37.16	6.29	3.39	1.03	23.68
Bharuch	50.6	16.5	23.5	30.1	53.4	211.0	69.38	919.0	18.63	9.94	3.49	1.75	24.84
Surat	56.9	4.7	55.9	62.5	32.9	256.8	66.74	851.0	42.76	8.79	2.51	0.82	40.84
Valsad	53.7	9.7	43.7	16.9	76.1	346.3	70.16	896.0	21.92	10.95	3.98	1.24	21.84
Co-efficient of variance	0.05	0.41	0.47	0.37	0.19	0.40	0.04	0.03	0.54	0.24	0.29	0.23	0.37

same both for 1971 and 1981. The percentage of primary worker in the district of Surat, Ahmedabad, Gandhi Nagar, Valsad and Kachchh show a decline and the proportion of primary workers in these districts are low as compared to other districts of state.

The percentage of urban workers in non-household industry to total urban workers is denoted by DIU 3 for 1971 and by DIU 16 for 1981. The co-efficient of variation among the districts remained again same both for 1971 and 1981. The district where the proportion of urban workers in non-household industry is high in Surat, Valsad, Vadodara, Ahmedabad, and Rajkot. The percentage of workers in non-household industries in almost all the districts of Gujarat the growth in the proportion of the workers have recorded.

The percentage of workers in secondary activities to total urban male workers of the district is denoted by DIU 4 for 1971 and DIU 17 for 1981. The co-efficient of variation in the percentage distribution of workers in secondary activities has increased in 1981. In the state there are the few districts where the growth of urban workers in secondary activities is observed, these are Surat, Bharuch, Vadodara, Kheda, and Surendar Nagar. In the rest of the districts the growth is almost constant, like Ahmedabad, Amreli. The districts where the proportion of workers in secondary activities have declined are Sabarkantha, Gandhi Nagar, and Valsad. The reason for

declined in the percentage of urban population may be that for Gandhi Nagar and Sabarkantha these workers were engaged in secondary activities in 1971, they might have shifted to the tertiary activities in 1981 and same things is true in the case of Valsad.

The percentage of workers in tertiary activities to total male urban workers of the districts are denoted by DIU 5 for 1971 and by DIU 18 for 1981. The distribution of workers in tertiary activities the co-efficient of variation has increased in 1981. The growth or increase in the proportion of workers in tertiary activities in 1981 may be because their loss in workers in secondary activities. For example, Gandhi Nagar where the proportion of worker in secondary activities has declined and the tertiary activities become dominant in 1981.

The road length has not been analysed separately for urban and rural areas, since its availability in urban areas is extremely higher. The indicator of road length per 1000 km^2 area which denoted in case of urban as DIU 6 for 1971 and DIU 19 to 1981 is not discussed here, as these variables have already been discussed in rural section. The percentage of male literates to total male urban population of the district is denoted by DIU 7 for 1971 and by DIU 20 for 1981. The co-efficient of variation has declined in 1981 compared to 1971. The districts where the proportion of urban male literates is high are Valsad, Surat, Bharuch, Vadodara, Panch Mahal, Kheda, Ahmedabad, Gandhi Nagar, Mehsana and Rajkot.

The proportion of male per 1000 of male (sex ratio) is denoted by DIU 8 for 1971 and by DIU 21 for 1981. The co-efficient of variation is the same both for 1971 and 1981. The sex-ratio is recorded low in the district of Surat, Valsad, Vadodara, Gandhi Nagar and Ahmedabad. It shows that the dominant of male migrants to the urban area because the sex-ratio is low in urban area.

These indicators related to the percentage of urban population to the total populations of the district are denoted by DIU 9 for 1971 and by DIU 22 for 1981. In all the districts the proportion of urban population have increased in 1981. But in the Panchmahal district, there is a marginal decline in the urban population, that is because the declassification of urban population in 1981 census. The co-efficient of variation has declined in 1981 as compared to 1971.

The percentage of urban female workers to total urban female population of the district is denoted by DIU 10 for 1971 and by DIU 23 for 1981. The disparity in terms of the distribution of female workers in the urban area has declined. In all the districts of Gujarat the proportion of female workers has increased in 1981.

The availability of hospital beds per 1000 of urban population of the districts is denoted by DIU 11 for 1971 and by DIU 24 for 1981. The co-efficient of variation has increased in 1981. The districts where proportion of hospital beds per 1000 of urban population is high, in the

districts of Valsad, Bharuch, Vadodara, Kheda and Surender Nagar. The proportions of these districts have increased because new hospitals have been opened in these districts in 1981. Whereas the district like Ahmedabad and Surat, no doubt, there the hospital beds are high in absolute way but the proportion of urban population is also very high.

The availability of school per 1000 of urban population is denoted by DIU 12 for 1971 and by DIU.25 for 1981. This indicator is derived on the basis of weightage, the weightage to the primary school is one, secondary school two, senior secondary schools3, college four and post graduate college five, on the basis of their individual scores a composite index was constructed for each districts. The co-efficient of variation in the distribution of school per 1000 of urban population has reduced in 1981 as compared to 1971.

The number of electric connection (commercial and industrial) per 1000 of urban population is denoted by DIU 13 for 1971 and by DIU 26 for 1981. The data show that the co-efficient of variation in the district for 1981 has increased. The districts where the proportion of electric connection is high are the Surat, Panch Mahals, Kheda, Ahmedabad, Mahesana, Sabarkantha, Junagarh and Surender Nagar. In the Surender Nagar, Panch Mahals, Kheda the commercial consumption of power is low and domestic consumption is high.

To summarise the analysis of the urban development indicator in Gujarat both for 1971 and 1981, it can be concluded that the indicators which are showing the increased in the co-efficient of variation in 1981 as compared to 1971 are percentage of workers in secondary activities (DIU 4 / DIU 17) percentage of urban workers in tertiary activities (DIU 5 / DIU 18) metalled road per 1000 sq. km of area (DIU 6/DIU 19) availability of hospital beds per 1000 of urban population of district (DIU 11/DIU 24) electric connection per 1000 of urban population (DIU 13/ DIU 26). The rest of the urban development indicators are either remained same or declined in terms of value of co-efficient of variation of the indicators.

CHAPTER - 5

Determinants of Rural and Urban Migration in Gujarat in 1971 and 1981

After analysing the rural and urban migration patterns and rural and urban developmental indicators in third and fourth chapters respectively, in the present chapter an attempt has been made to study to explain the determinants of migration in Gujarat both for 1971 and 1981. The purpose of this chapter is also to see whether these determinants have changed or remained constant between 1971 and 1981. In this chapter the rural and urban areas are studied separately. The rural and urban migration patterns and their determinents are analysed with the help of simple correlation co-efficient and the stepwise regression analysis. The use of step wise technique of regression analysis is to avoid the problem of multi collinearity and to identify the relative importance of the explanatory variables in explaining is phenomenon.

The intermediate results of all the equations relating to each step are net reported for the sake of space constraints here. Only the final equations after which R^{-2} starts declining are given. The regression equations are given with the explanatory variables appearing in the same order in which they entered in each step.

5.1 Determinants of migration in rural area 1971 and 1981

Determinants of rural migration can be studied under the following sub headings:

5.1.1 Determinants of rural in-migration in 1971 and 1981

5.1.2 Determinants of rural out-migration

5.1.3 Determinants of rural net-migration

5.1.1 Determinants of rural in-migration 1971 and 1981

To trace out the relationship of rural in-migration and the rural development, the following variables have been selected for the analysis.

Variables of rural in-migration - 1971 and 1981

1. Intra-district R-R in-migration rate (MR 1/MR 19).
2. Intra-district U-R in-migration rate (MR 2/MR 20).
3. Inter-district R-R in-migration rate (MR 3/MR 21).
4. Inter-district U-R in-migration rate (MR 4/MR 22).
5. Inter-state R-R in-migration rate (MR 5/MR 23).
6. Inter-state U-R in-migration rate (MR 6/MR 24).
7. Intra-district in-migration rate in rural area (MR 1 + MR 2), (MR 7/MR 25).
8. Inter-district in-migration rate in rural area (MR 3+ MR4 (MR 8/MR 26).
9. Inter-state in-migration rate in rural area (MR 5 + MR 6) (MR 9/MR 27).

Variables of rural development - 1971 and 1981

1. Percentage of net area sown to total geographical area of the district (DIR 1/DIR 14).

2. Proportion of gross cropped area to net sown area (DIR 2/DIR 15)

3. Percentage of gross irrigated area to total gross cropped area DIR 3/DIR 16)

4. Percentage of rural male workers to total rural male population (DIR 4/DIR 17)

5. Percentage of rural male cultivators to total rural male workers (DIR 5/DIR 18)

6. Percentage of rural male agricultural labours to total male workers (DIR 6/DIR 19)

7. Percentage of rural male workers in primary activities to total rural male workers (DIR 7/DIR 20)

8. Percentage of rural male workers in secondary activities to total rural workers(DIR 8/DIR 21)

9. Percentage of rural male workers in tetiary activities to total rural male workers (DIR 9/DIR 22)

10. Length of metalled road per 1000 km^2 of area of district (DIR 10/DIR 23)

11. Percentage distribution of scheduled caste and scheduled tribes to total rural male population (DIR 11/DIR 24)

12. Male literacy rate in rural area (DIR 12/DIR 25)

13. Sex-ratio in rural area (DIR 13/DIR 26)

Table : 5.1

Correlation Co-efficient between rural in-migration and rural development indicators - Gujarat, 1971

	MR 1	MR 2	MR 3	MR 4	MR 5	MR 6	MR 7	MR 8	MR 9
DIR 1	-.608**	-.032	.183	.294	-.330	-.6828**	-.612**	.216	-.419
DIR 2	-.655*	-.294	-.239	. 117	-.298	-.217	-.691**	-.166	-.308
DIR 3	-.491*	.036	.136	.315	-.285	-.164	-.486*	.181	-.286
DIR 4	.562*	-.211	-.020	-.233	.515*	.257	.536*	-.070	.512*
DIR 5	-.076	-.242	-.373	-.32	-.120	-.298	-.106	-.373	-.161
DIR 6	.256	.295	.293	.092	.142	.082	.292	.257	.143
DIR 7	.335	-.013	-.337	-.536*	-.006	-.350	.333	-.391	-.055
DIR 8	-.264	.049	.310	.477*	.0946	.333	-.258	.356	.144
DIR 9	-.432	-.145	.241	.489*	-.112	.317	-.450	.303	-.045
DIR10	.334	-.395	.601**	.4151	.591**	-.014	.285	.580**	.533*
DIR11	.737**	-.272	.124	-.183	.774**	.386	.703**	-.405	.225
DIR12	-.423	.142	.297	.388	-.271	-.156	.058	.328	-.386
DIR13	.213	.095	-.393	-.305	.076	.680**	.769**	-.272	.188

** 1%level of significance.

* 5% level of significance.

14.* Availability of medical facilities per 1000 of rural population (DIR 27)

15.* Availability of post and telegram facilities per 1000 of rural population (DIR 28)

16.* Availability of power supply per 1000 of rural population (DIR 29)

The correlations co-efficients of different rural in-migration rate and developmental variables are given in the Table 5.1 for 1971 and in Table 5.2 for 1981.

Taking intra-district rural to rural in-migration rate first, a close examination of Table 5.1 shows that in 1971 there is a significant negative relationships between rural to rural intra-district in-migration (MR 1) and the percentage of net area sown to total geographical area of the district (DIR 1), croping intensity (DIR 2) and percentage of gross irrigated area (DIR 3). It may mean that the district where agriculture is relatively better the rural to rural intra-district in-migration is found to be lower. There is a positive relationship between rural to rural intra-district in-migration (MR 1) and the percentage of rural worker to total rural male population (DIR 4) and percentage of scheduled castes and scheduled tribes population to total population in the rural area (DIR 11). It indicates that the districts where employment opportunities are better the rural to rural infradistrict in-migration rate is high.

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* These variables of rural development are taken

Table : 5.2

Correlation Co-efficient between rural in-migration and rural development indicators - Gujarat : 1981

	MR 19	MR 20	MR 21	MR 22	MR 23	MR 24	MR 25	MR 26	MR 27
DIR14	-.572*	-.003	.187	.307	-.189	-.309	-.565*	.241	-.213
DIR 15	-.604**	-.187	-.297	.136	-.322	-.248	-.575	-.165	-.317
DIR16	-.423	-.025	.152	.425	-.020	.042	-.397	.260	-.006
DIR17	.675**	.171	.142	-.329	.565*	.329	.662**	-.021	.542*
DIR18	-.115	-.339	-.519	-.493	-.296	-.552*	-.152	-.545*	-.353
DIR19	.315	.478*	.446	.214	.194	.295	.354	.388	.221
DIR20	.248	.016	-.467*	-.703**	-.366	-.661**	.230	-.588**	-.431
DIR21	.225	.200	.358	.533*	.346	.600**	-.186	.450	.404
DIR22	-.261	-.367	.5141*	.814**	.297	.570*	-.286	.659**	.354
DIR23	-.130	-.045	.502*	.502*	.402	.441	-.119	.540*	.424
DIR 24	.661**	-.152	.188	-.187	.756**	.598**	.619**	.061	.752**
DIR25	-.176	.222	.478*	.492*	-.0009	.164	-.125	.512*	.030
DIR26	.152	.007	-.385	-.252	-.094	.3202	.176	-.365	.136
DIR27	.368	.193	.137	.515	-.258	.059	-.320	.285	-.21
DIR28	-.407	.508	.037	.348	-.340	.075	-.319	.155	-.276
DIR29	-.445	.436	.041	.325	-.379	-.065	-.359	.148	-.333

** 1% level of significance

* 5% level of significance

The last step of the step-wise regression analysis is given below:

In-migration within the district

	DIR 11	DIR 2	DIR 1	DIR 3
MR 1 = 108.45	+0.082***	-47.022***	-0.099**	-0.437***
R-R	(3.48)	(-4.62)	(-2.72)	(-3.46)
	DIR 9	**DIR 12**	**DIR 4**	**DIR 10**
	-0.626*	-0.228**	-0.736*	+0.152
	(-2.21)	(-2.44)	(-1.9)	(1.395)

*** Significant at 1% level
** Significant at 5% level
* Significant at 10% level

Tables in brackets are 't' value.

The values of R^2 in the successive steps upto 8 are - 0.54, 0.72, 0.76, 0.78, 0.83, 0.85, 0.89 and 0.90.

In the above equation the developmental variables explained about 90 percent variation in the rural to rural intra-district in-migration rate. Scheduled castes and scheduled tribes is shown relatively a very high explanatory power to explain positively the variation in intra-district R-R migration rate. The variables which are showing a negative change are cropping intensity (DIR 2) net area sown (DIR 9), gross irrigated area (DIR 3) worker in tertiary activities (DIR 9), literacy rate (DIR 19) and the rural male worker (DIR 14).

Similar correlation co-efficient for 1981 of rural to rural intra-district in-migration rate and the development variables are given in Table 5.2. The table shows that the percentage of net sown area to total geographical area (DIR 14) and the cropping intensity (DIR 15) show a significant negative relationship with the intra-district rural to rural in-migration. The percentage of gross irrigated area is not showing a significant relationship with rural to rural intra-district in-migration (MR 19). Whereas in 1971 it was showing a significant negative relationship with the rural to rural intra-district in-migration. The percentage of rural workers to total rural male population (DIR 17) and the percentage of scheduled castes and scheduled tribes population to total population (DIR 24) again show a positive significant relationships to the rural to rural intra-district in-migration.

The last step of the stepwise regression analysis is given below.

	DIR 17	DIR 14	DIR 19	DIR 28
MR 19 = -17.44	+ 0.64*	-0.107***	+0.19**	-0.035***
R-R	(2.26)	(-4.04)	(2.94)	(-4.21)

DIR 27	DIR 29	DIR 16
+0.015**	+0.015**	-0.099*
(2.84)	(2.77)	(-2.14)

***Significant at 1% level
**Significant at 5% level
*Significant at 10% level

The value of R^2 in the successive steps upto 7 are - 0.45, 0.58, 0.66, 0.74, 0.78, 0.82 and 0.87

The development variable which appear in this equation explain 87 percent of variation. The developmental variables which show a positive change are rural male workers (DIR 17) agricultural labours (DIR 19), medical facilities (DIR 27) and power supply (DIR 29) in that order. The other developmental variables which show a negative change on rural to rural intra-district in-migration (MR 19) are net sown area (DIR 14), post and telegram (DIR 28) and the gross irrigated area (DIR 16).

A close examination of Table 5.1 for urban to rural intra-district in-migration rate (MR 2) and the developmental indicators in 1971 are not showing any significant relationships.

The last step of stepwise regression analysis is given below.

	DIR 10	DIR 2	DIR 4	DIR 9
MR 2 = 19.84	-5.48**	-5.03**	- 0.12	-0.26**
U-R	(-2.488)	(-2.28)	(-1.52)	(-2.64)
	DIR 3	DIR 7	DIR 1	
	-0.044	-0.048	-7.27	
	(1.89)	(-1.15)	(0.912)	

The values of R^2 in the successive steps upto 7 are - 0.15, 0.25, 0.35, 0.49, 0.56, 0.61 and 0.64.

In the above equation the developmental variables explained about 64 percent of the variation in the urban to rural intra-district in-migration rate. The developmental variables which are showing a significant negative change are metalled road (DIR 10) cropping intensity (DIR 2) workers in tertiary activities (DIR 9) and gross irrigated area (DIR 13).

Similar correlation co-efficient of urban to rural intra-district in-migration rate and the developmental variable are given in Table 5.2 for 1981. There is one developmental indicator, that is percentage of agricultural labour to total worker (DIR 19) is showing a significant positive relationship with the urban to rural intra-district in-migration (MR 20). In the 1971, there was not a single developmental variable to which the significant relationship with urban to rural intra district in-migration is observed.

The last step of the stepwise regression analysis is given below.

	DIR 28	DIR 29	DIR 27	DIR 25
MR 20 =-2.12	+0.0045***	-0.13***	-0.002***	-0.032***
	(6.38)	(-5.501)	(-3.29)	(3.34)

DIR 14	DIR 16	DIR 17
-0.015***	0.007	+0.028
(-3.52)	(1.33)	(1.03)

The value of R^2 in the successive steps upto 7 are - 0.25, 0.60, 0.72, 0.75, 0.88, 0.89 and 0.90.

In the above equation the developmental variables explained about 90 percent of the variation in the urban to rural intra-district in-migration rate. The developmental variables which are showing a significant positive change in urban to rural intra-district migration are post and telegram (DIR 28) and the literacy rate (DIR 25). In 1971 there was not a single developmental variables which has shown a positive relationship. The other developmental variable which show a significant negative change in the urban to rural intra-district in-migration are power supply (DIR 29), medical facilities (DIR 27) and net area sown (DIR 14).

The co-efficient of correlation with inter-district rural to rural in-migration (MR 3) and the developmental variable show that the developmental variables like metalled road per 1000 km^2 of area (DIR 10) and the inter district rural to rural in-migration rate (MR 3) show a high significant positive correlation coefficient.

The last step of stepwise regression analysis is given below.

	DIR 10	DIR 5	DIR 13	DIR 6	DIR 8	DIR 3
MR 3=56.05	$+0.021^{***}$	-0.35^{**}	-0.028^{**}	$+0.25^{**}$	-0.31	-0.06
R-R	(3.165)	(-2.84)	(-2.55)	(-2.37)	(-1.3)	(-1.2)

The values of the R^2 in the successive steps upto 6 are - 0.36, 0.52, 0.59, 0.65, 0.70 and 0.73.

In the above equation the developmental variables explained about 73 percent of the variation in the rural to rural inter-district migration rate (MR 3). The developmental variables which show a significant positive change in rural to rural inter-district in-migration are the metalled road length (DIR 10) and agriculture labour (DIR 6). The other development variables which show a significant negative change in MR 3 are cultivator (DIR 5) and sex ratio (DIR 13).

Similar correlation co-efficient of rural to rural inter-district in-migration rate and the developmental variables are for 1981 shown that there is a high positive significant relationship between inter-district rural to rural in-migration rate (MR 21) and percentage of workers in tertiary activities (DIR 22), metalled road (DIR 23) and the male literacy rate (DIR 25). In 1971 it was only metalled road which has shown a positive relationship with MR 21). The development variables which show a negative relationships are percentage of cultivators to total male workers (DIR 18) and the percentage of workers in primary activities (DIR 27).

The last step of stepwise regression analysis is given below.

	DIR 18	DIR 28	DIR 26	DIR 22	DIR 15	DIR 25
MR 21=33.66	-0.041	-0.004	-0.022**	+0.29**	=7.519	+0.055
R-R	(-1.002)	(-1.706)	(-2.414)	(2.3)	(-1.66)	(1.26)

The values of R^2 in the successive steps upto 6 are - 0.27, 0.42, 0.58, 0.62, 0.72 and 0.75.

explained about 75 percent of the variation in the rural to rural inter-district in-migration (MR 21). The developmental variable which show a significant positive change in rural to rural inter-district in-migration is the workers in tertiary activities (DIR 22). Sex ratio (DIR 26) in 1981 again showing a negative change in rural to rural inter-district in-migration rate (MR 21).

For urban to rural inter-district migration, a close examination of Table 5.2 shows that there is a positive significant relationship with urban to rural inter-district in-migration rate (MR 4) and workers in secondary activities (DIR 8) and workers in tertiary activities (DIR 9). The workers in primary activities (DIR 7) show a negative relationship with urban to rural inter-district in-migration rate.

The last step of the stepwise regression analysis is given below.

	DIR 7	DIR 13	DIR 10	DIR 12
MR 4 = 17.84	-0.099***	-8.69**	+3.036	-0.017
U-R	(-3.43)	(-2.48)	(1.46)	(-1.21)

The value of R^2 in the successive steps upto 4 are - 0.28, 0.51, 0.57 and 0.61.

In the above equation the developmental variables explain about 61 percent of the variation in the urban to rural inter-district in-migration (MR 4). The developmental variables which show a significant negative change in urban to rural inter-district in-migration (MR 4) are workers in primary activities (DIR 7) and sex-ratio (DIR 13).

Similar correlation co-efficient for 1981 are given in Table 5.2. The table shows that the relationship with inter-district urban to rural in-migration (MR 22) and the developmental variables has further stronger as compared to 1971. The developmental variables which show a positive significant relationship with inter-district urban to rural in migration (MR 22) are workers in secondary activities (DIR 21), workers in tertiary activities (DIR 22), metalled road length (DIR 23) and literacy rate (DIR 25). The developmental variables which show a negative significant relationship are percentage of cultivators to total workers (DIR 18), and the worker in secondary activities with inter-district urban to rural in-migration (MR 22). The developmental indicators which have not shown any significant relationship with inter-district urban to rural in-migration in 1971 but they show in 1981 are the cultivator (DIR 18) metalled road length (DIR 23) and the male literacy rate (DIR 25).

The last step of stepwise regression analysis is given below.

	DIR 22	DIR 26
MR 22 = 8.57	+ 0.282***	-0.610**
U-R	(6.9)	(-2.63)

The value of R^2 in the successive steps upto 2 are - 0.66, and 0.76.

In the above equation the developmental variables explained about 76 percent of the variation in the urban to rural inter-district in-migration (MR 22). The developmental variable which shows a significant positive change in urban to rural inter-district in-migration (MR 22) is the worker in tertiary activities (DIR 22) and the other development variable which show a negative change in MR 22 is sex-ratio (DIR 26). The developmental indicator worker in tertiary activities (DIR 22) has not shown any change in urban to rural inter-district in-migration rate (MR 22).

A close examination of the Table 5.1 for inter-state rural to rural in-migration rate (MR 5) and the developmental variables show that there is a high positive significant relationship between inter-state rural to rural in-migration and the developmental indicators. The developmental variables which show the relationship are the percentage of rural male workers (DIR 4), metalled road length (DIR 10) and the

percentage of scheduled castes and scheduled tribes population DIR 11).

The last step of the stepwise regression analysis is given below.

	DIR 11	DIR 10	DIR 9	DIR 12	DIR 5	DIR 4
MR 5 =	-6.91	+0.018**	+0.015**	+0.195*	-0.04	-0.019	+ 0.13
R-R		(2.48)	(2.89)	(2.13)	(-1.66)	(-1.12)	(1.105)

The value of R^2 in the successive steps upto 6 are - 0.60, 0.65, 0.70, 0.78, 10.80 and 0.82.

In the above equation the developmental variables explained about 82 percent of the variation in inter-state rural to rural in-migration (MR 5). The developmental variables which show a significant positive changes in the inter-state rural to rural in-migration rate (MR 5) are scheduled caste and scheduled tribe population (DIR 11) metalled road (DIR 10) and workers in tertiary activities (DIR 9).

The similar correlation co-efficient are given in Table 5.2. Here again the rural male workers (DIR 17), and percentage of scheduled caste and scheduled tribe population (DIR 24), are showing a positive relationship with inter-state rural to rural in-migration (MR 23).

The last step of stepwise regression analysis is given below.

	DIR 24	DIR 20	DIR 28	DIR 17	DIR 27
MR 23 = 3.25	+5.86	-0.15***	-0.006**	+0.239**	+0.002
R-R	(0.554)	(-4.49)	(-2.71)	(2.21)	(1.419)

The value of R^2 in the successive steps upto 5 are - 0.57, 0.73, 0.77, 0.82 and 0.84.

In the above equation the developmental variables explained about 84 percent of the variation in the rural to rural inter-state in-migration (MR 23). The development variable which show a positive change in rural-rural inter-state in-migration (MR 23) is the percentage of male worker to total rural population (DIR 17). The other variables which show a negative change in MR 23 are worker in primary activities (DIR 20) and post and telegram (DIR 28). The scheduled caste and scheduled tribe population (DIR 24) has shown a positive change in inter-state rural to rural irrigation (MR 23).

The co-efficient of correlation with inter-state urban to rural in-migration rate (MR 6) and developmental indicator are shown in Table 5.1 which shows a positive significant relation between inter-state urban to rural

in-migration (MR 6) and the sex-ratio (DIR 13), and the negative relationship is shown by net area sown (DIR 1).

The last step of stepwise regression analysis is given below.

		DIR 1	DIR 8	DIR 3	DIR 11
MR 6 =	-7.853	-0.01***	+0.087*	+0.005	+0.00004
U-R		(-4.13)	(1.95)	(0.99)	(0.025)

	DIR 9	DIR 7	DIR 13	DIR 10
	+0.072*	+0.062	+0.002	+0.001
	(1.945)	(1.62)	(1.59)	(1.315)

The value of the R^2 in the successive steps upto 8 are -

0.46, 0.74, 0.76, 0.79, 0.81, 0.83, 0.84 and 0.86

In the above equation the developmental variables explained about 86 percent of the variation in the urban to rural inter-state in-migration (MR 6). The developmental variables which are showing a positive change in MR 6 are the worker in secondary activities (DIR 8) and worker in tertiary activity (DIR 9). The other developmental variable which show a significant negative change in MR 6 is the net sown area (DIR 1).

Similar correlation co-efficient for 1981 are shown in Table 5.2. The table shows that all the developmental variable which are showing the relationship in 1981. They have not shown in 1971. The developmental variable which are showing a positive relationship with inter-state urban to rural in-migration (MR 24) are percentage of worker in secondary activity (DIR 20), workers in tertiary activity (DIR 22), and scheduled caste and scheduled tribe population (DIR 24). The developmental variables which are showing negative relationship with MR 24 are cultivators (DIR 18) and workers in primary activities (DIR 20).

The step of stepwise regression analysis is given below.

	DIR 20	DIR 24	DIR 14	DIR 23	DIR 16	DIR 25
MR 24=4.689	-.066***	+0.005***	-0.002**	+0.0008**	+0.002	-0.017***
U-R	(-6.74)	(6.37)	(-2.66)	(4.19)	(1.607)	(-8.26)

	DIR 18	DIR 21	DIR 29	DIR 17	DIR 28	DIR 15
	(0.801)	(-6.25)	(5.36)	(2.62)	(2.24)	(-1.75)

The value of the R^2 in the successive steps upto 12 are -

0.43, 0.84, 0.86, 0.89, 0.90, 0.91, 0.93
0.95, 0.98, 0.98, 0.99 and 0.99

In the above equation developmental variables explained about 99 percent of the variation in urban to rural inter-state in-migration rate (MR 24). The development variable which show a positive change in MR 24 are scheduled caste and scheduled tribe population (DIR 24), metalled road (DIR 23), power supply (DIR 29), rural worker (DIR 17) and post and telegram (DIR 28). The variable which show a significant negative change in MR 24 are worker in primary activities (DIR 20) net area sown (DIR 14), literacy rate (DIR 25) and worker in secondary activities (DIR 21). In 1971 metalled roads (DIR 23) have not sown any significant change in MR 24, same is true for scheduled caste and scheduled tribe (DIR 24). In 1971, worker in secondary activity has shown a positive change in urban to rural inter-state in-migration (MR 24), same is true for workers in primary activity. But in 1981 these developmental indicator show negative change in MR 24.

The co-efficient of correlations with total intra-district in-migration (MR 7) and developmental indicator, total inter-district rural in-migration (MR-8) and developmental indicators and total inter-state rural in-migration (MR 9) and developmental indicators are shown in Table 5.1. The relationship is almost same as noted in case of other rural in-migration variable.

5.1.2 Determinants of Rural Out-migration - 1971 and 1981

To see the relationship of rural out-migration and rural developmental variable, the following variables of rural out-migration are considered in the analysis. The developmental variables for rural areas, however, remain same as given earlier.

Rural Out-migration Variables - 1971/1981

1.	Intra district R-U out migration rate	(MR 10/MR 28)
2.	Inter-district R-R out-migration rate	(MR 11/MR 29)
3.	Inter-district R-U out-migration rate	(MR 12/MR 30)
4.	Intra-district total out-migration rate in rural area	(MR 13/MR 31)
5.	Inter-district total out-migration rate	(MR 14/MR 32)

The correlation coefficient of different rural out-migration rate and developmental variables are given in the Table 5.3 for 1971 and Table 5.4 for 1981.

A close examination of Table 5.3 show that there is a significant positive relationship between rural to urban intra-district out-migration rate (MR 10) and the developmental indicator, such as percentage of scheduled caste and scheduled tribe population.

The last step of the stepwise regression analysis is given below.

TABLE - 5.3

Correlation Co-efficient between rural out-migration and rural development indicators - Gujarat, 1971

	MR 10	MR 11	MR 12	MR 13	MR 14
DIR 1	.013	.125	.374	-.582**	.4188
DIR 2	-.244	-.438	.026	-.758**	.081
DIR 3	.104	-.134	.182	-.422	.264
DIR 4	-.283	-.174	-.391	.400	-.541*
DIR 5	-.268	-.364	-.242	-.210	-.326
DIR 6	.172	.426	.069	.336	.230
DIR 7	-.2131	-.045	0.380	.216	-.321
DIR 8	.193	.052	.355	-.157	.256
DIR 9	.126	-.025	.296	-.354	.305
DIR 10	-.413	-.439	-.123	.114	-.318
DIR 11	.467*	-.380	-.570*	.476	-.607**
DIR 12	.098	.087	.308	-.359	.356
DIR 13	-.007	.021	-.165	.203	-.059

** 1% level of significance

* 5% level of significance.

		DIR 11	DIR 2
MR 10 =	25.25	-0.49***	-19.07**
R-U		(-3.06)	(-2.26)

The value of R^2 in the successive steps upto 2 are - 0.21, 0.40

In the above equation developmental variable explained about 40 of the variation in the rural to urban intra-district migration (MR 10). Both developmental variables show a negative change in the rural to urban out-migration within the district. These variables are scheduled caste population (DIR 11) and cropping intensity (DIR 2).

The co-efficients of correlation with intra-district rural to urban out-migration (MR 28) and developmental indicators are shown in Table 5.4. In 1981 there is no relationship observed in scheduled caste and scheduled tribe population and intra-district rural to urban out-migration rate. The developmental variables which show a significant relationship is post and telegram (DIR 28).

Surprisingly the regression analysis gives large number of significant regression coefficient and a higher R^2 value. The last step of stepwise regression analysis is given below.

	DIR 28	DIR 27	DIR 23	DIR 26
MR 28 = 34.85	+0.022***	-0.015**	-6.017**	-0.049**
R-U	(3.372)	(-2.87)	(-2.57)	(-2.75)
	DIR 25	DIR 14	DIR 18	DIR 21

Table - 5.4

Correlation Co-efficient between rural-Out-migration and rural Development indicators Gujarat - 1981

	MR 28	MR 29	MR 30	MR 31	MR 32
DIR 14	.006	-.079	.476*	-.504*	.368
DIR15	-.072	-.624**	.339	-.558*	.038
DIR 16	-.044	-.542**	.253	-.398	-.0009
DIR 17	-.124	.318	-.576**	.492*	-.357
DIR 18	-.307	-.311	-.252	-.284	-.334
DIR 19	.328	.480*	.1584	.459*	.322
DIR 20	-.071	.063	-.276	.163	-.206
DIR 21	.196	-.071	.227	-.061	.162
DIR 22	-.146	-.052	.263	-.309	.199
DIR 23	-.313	-.099	.015	-.312	-.027
DIR 24	-.445	.203	-.572	.291	-.400
DIR 25	.129	.010	.382	-.076	.324
DIR 26	-.133	.246	-.034	.064	-.126
DIR 27	.237	-.032	.588**	-.166	.480
DIR 28	.515**	-.027	.496*	-.030	.404
DIR 29	.456	-.301	.478*	-.107	.282

** 1% level of significance

* 5% level of significance

The value of R^2 in the successive step upto 8 are -

0.26, 0.44, 0.54, 0.65, 0.67, 0.72
0.74 and 0.77.

In the above equation developmental variable explained about 77 percent of the variation in the rural to urban intra-district out-migration rate. All the developmental variable which have shown a change in rural to urban intra-district out-migration rate in 1971 in 1981 these variables are not showing any change. These variables are scheduled caste and scheduled tribe population. All the developmental variables, which are occuring in 1981 regression equation and show a change in rural to urban out-migration rate within the district. The post and telegram (DIR 28) and literacy rate (DIR 25) are showing a positive change in rural out-migration. Where as other developmental variables show a significant negative change, are medical facility, metalled road, sex ratio, and net sown area.

The co-efficient of correlation with inter-district rural to rural out-migration rate (MR 11) and development variable are not showing any significant relationship. (Table 5.3).

The last step of the stepwise regression analysis is given below.

	DIR 10	DIR 2	DIR 1	DIR 11	DIR 13
MR 11 =	-27.53 +0.01	+4.23	+7.74	-0.069***	+0.016*
R-R	(1.7)	(0.67)	(0.542)	(-5.45)	(2.08)

DIR 9	DIR 6	DIR 3	DIR 5
+0.074	+ 0.282***	-0.21***	+ 0.107
(0.48)	(3.45)	(-3.93)	(1.735)

The value of the R^2 in the successive steps upto 9 are -

0.19, 0.39, 0.59, 0.63, 0.67, 0.71, 0.77
0.89 and 0.91.

In the above equation again surprisingly the developmental variables explained about 91 percent. The developmental variables which show a positive significant change in inter-district rural to rural out-migration rate (MR 11) are sex-ratio (DIR 13) and agricultural labour (DIR 6). The other development variable which show a significant negative change in MR 11 are scheduled caste and scheduled tribe population and the gross irrigated area.

Similar correlation co-efficients of rural to rural inter-district out-migration rate (MR 29) are shown in Table 5.4. In 1981 there are three developmental variables which are showing the relationship with rural to rural inter-district out-migration (MR 29) whereas in 1971 there was not a single developmental variable which have shown any relationship

to inter-district rural to rural out-migration. In Table 5.4 the variables which show a positive relationship with MR 29 is rural agricultural labour (DIR 19). The developmental variable which are showing a negative relationship are gross irrigated areas (DIR 16) and cropping intensity (DIR 2).

The last step of the stepwise regression analysis is given below.

	DIR 19	DIR 16	DIR 26	DIR 22	DIR 21	DIR 14
MR 29=-8.48 -3.078 R-R	+0.076***	-0.069***	+0.005	+0.19**	-0.034	+0.039***
	(01.67)	(4.726)	(06.11)	(1.37)	(3.56) (-1.169)	(5.25)

DIR 23	DIR 29	DIR 25	DIR 24	DIR 27	DIR 17
(-3.80)	(-5.85)	(6.153)	(-2.87)	(1.59)	(1.25)

The value of R^2 in the successive steps upto 12 are -

0.38, 0.48, 0.61, 0.62, 0.68, 0.77, 0.79, 0.80, 0.84, 0.87, 0.89, 0.98 and 0.99.

In the above equation developmental variables explained 98 percent of the variation in the rural to rural inter-district out-migration rate (MR 29). The variable which have shown a significant change in 1971, in 1981 they also show a significant change in rural to rural inter-district out-migration are scheduled caste and scheduled tribe population (DIR 24), agricultural labour (DIR 19), and gross irrigated area (DIR 16).

The other variables in 1981 which show a significant positive change in MR 29 are worker in tertiary activity (DIR 22), literacy rate (DIR 25). The other developmental variables which show a negative change are metalled road (DIR 23) and power supply (DIR 29).

The correlation co-efficient with inter-district rural to urban out-migration (MR 12) and developmental indicators is shown in Table 5.3. The scheduled castes and scheduled tribe population (DIR 11) shows a negative relationship.

The last step of stepwise regression analysis is given below.

	DIR 11	DIR 8	DIR 3	DIR 13	DIR 12
	***	*	*		
MR 12 = 18.21	-0.05	+ 0.32	- 0.201	- 0.016	+ 0.071
	(-3.32)	(1.84)	(-2.112)	(-1.21)	(1.018)

The value of R^2 in the successive steps upto 5 are - 0.32, 0.41, 0.48, 0.54 and 0.58.

In the above equation developmental variables explained about 58 percent of variation in the rural to urban inter-district out-migration rate (MR 12). Workers in secondary activities are showing a positive change in (MR 12), whereas scheduled caste and scheduled tribe population and gross irrigated area are showing negative changes.

Similar correlation co-efficients of rural to urban inter-district out-migration (MR 30) as given in Table 5.4 show that scheduled caste and scheduled tribe is not showing any significant relationship in 1981. The developmental indicators which show significant positively are net sown area (DIR 14), medical facility (DIR 27), post and telegram (DIR 28), and power supply (DIR 29). The developmental variable which show negative relationship is worker in secondary activities (DIR 17).

The last step of stepwise regression analysis is given below.

	DIR 27	DIR 17	DIR 14	DIR 23
MR 30 = -5.684	+0.622***	-0.317	+0.15***	-0.014**
R-U	(3.135)	(-1.23)	(3.45)	(-2.35)

DIR 15	DIR 26	DIR 28
-19.41**	+ 0.043**	-0.014
(-2.43)	(2.225)	(-2.09)

The value of R^2 in the successive steps upto 7 are

0.35, 0.45, 0.50, 0.55, 0.59, 0.65 and 0.75

In the above equation the developmental variables explained about 75 percent of the variation in the rural to urban inter district out-migration rate (MR 30). In 1981

there is not a single developmental variable which have shown a change in rural to urban inter-district out-migration in 1971. The developmental variables which show a positive change are medical facilities (DIR 27) net area shown (DIR 14) and sex ratio (DIR 26). The variable which show a negative change in rural to urban inter-district out-migration are metalled road (DIR 23), cropping intensity (DIR 15) and post and telegram (DIR 28).

The correlation co-efficients of intra-district rural out-migration rate (MR 13), inter-district rural out-migration rate (MR 14), with developmental indicator is shown in Table 5.3. Similarly the correlation co-efficient of intra-district rural out-migration rate (MR 31), inter-district rural out-migration rate (MR 32) with developmental variable is shown in Table 5.4.

5.1.3 Determinants of Rural net-migration - 1971 and 1981

To see the relationship of rural net-migration and rural developmental variable, the following variables of rural net-migration are considered in the study.

Rural net-migration variables

1.	Intra-district U-R net migration rate	(MR 15/MR 33)
2.	Inter-district R-R net-migration rate	(MR 16/MR 34)
3.	Inter-district U-R net migration rate	(MR 17/MR 35)
4.	Inter-district net-migration rate in rural area	(MR 18/MU 36)

Table - 5.5

Correlation co-efficient between rural net migration and rural development indicators Gujarat - 1971

	MR 15	MR 16	MR 17	MR 18
DIR 1	-.027	.089	-.470	-.233
DIR 2	.215	.230	-.373	-.177
DIR 3	-119	.148	-.400	-.117
DIR 4	.285	.129	.636**	.433
DIR 5	.261	.092	.170	.051
DIR 6	-.128	-.156	-.046	-.040
DIR 7	.257	-.134	.313	.035
DIR 8	-.223	.110	-.226	-.0001
DIR 9	-.197	.108	-.347	-.076
DIR 10	.391	.738**	.299	.647**
DIR 11	.493*	.346	.616**	.572*
DIR 12	-.080	.149	-.376	-.106
DIR 13	.038	-.335	.024	-.193

** 1% level of significance

* 5% level of significance

The developmental variables, however, remain same as of the in the beginning.

The correlation co-efficient of different rural net migration rate and rural developmental variables are given in Table 5.5 for 1971 and in Table 5.6 for 1981.

A close examination of the Table 5.5 and 5.6 show that there is a significant positive relationship between intra-district urban to rural net-migration rate (MR 15/ MR 33) and the percentage of scheduled caste and scheduled tribe population (DIR 11/DIR 24).

The correlation co-efficient between inter-district rural to rural net-migration (MR 16) shows a positive relationship with metalled road (DIR 10), the same variable is also significant in 1981. The rural to rural inter-district net migration (MR 34) and the developmental variables show a positive relationship are literacy rate (DIR 25), worker in tertiary activities (DIR 22) and gross irrigated area (DIR 16). The variables which show a negative in relationship is worker in primary activities (DIR 20) (Table 5.6).

The correlation co-efficient between urban to rural inter-district net-migration (MR 17) for 1971 and (MR 35) for 1981. The developmental variable which is not showing a relationship is net sown area (DIR 14) in 1981. The other variable which show a positive relationships are scheduled

Table - 5.6

Correlation Co-efficient between rural net-migration and rural development indicators - Gujarat, 198

	MR 33	MR 34	MR 35	MR 36
DIR 14	.0009	.258	-.402	-.165
DIR 15	.035	.145	-.328	-.163
DIR 16	.046	.584**	-.120	.201
DIR 17	.192	-.103	.507*	.324
DIR 18	.271	-.367	.075	-.099
DIR 19	-.259	.155	-.083	-.009
DIR 20	.086	-.573*	.020	-.253
DIR 21	-.177	.464	-.030	.190
DIR 22	.078	.600**	.032	.316
DIR 23	.358	.591**	.188	.440
DIR 24	-.486*	.028	.552*	.427
DIR 25	-.094	.519*	-.226	.084
DIR 26	.159	-.217	-.071	-.160
DIR 27	-.228	.182	-.430	-.238
DIR 28	-.474	.089	-.394	-.265
DIR 29	-.422	.312	-.395	-.154

** 1% level of significance

* 5% level of significance

caste and scheduled tribe population (DIR 11) and rural male worker (DIR 4) both in 1971 and 1981.

So far we have been discussing the determinents of various migration streams in rural areas only.

In the subsequent section the similar analysis is carried out for urban areas also.

5.2 Determinents of migration in urban area - 1971 and 1981

The urban migration determinents can be studied in the following sub headings:

5.2.1 Determinents of urban in-migration 1971 and 1981.

5.2.2 Determinents of urban out-migration 1971 and 1981.

5.2.3 Determinents of urban net-migration 1971 and 1981.

5.2.1 Determinents of urban in-migration - 1971 and 1981

To trace out the relationship of urban in-migration and the urban development, the following variables have been selected for the analysis.

Variables of urban in-migration

1.	Intra-district R-U in-migration rate	(MU 1/MU 19)
2.	Intra-district U-U in-migration rate	(MU 2/MU 20)
3.	Inter-district R-U in-migration rate	(MU 3/MU 21)
4.	Inter-district U-U in-migration rate	(MU 4/MU 22)
5.	Inter-state R-U in-migration rate	(MU 5/MU 23)

6.	Inter-state U-U in-migration rate	(MU 6/MU 24)
7.	Intra-district in-migration rate in urban area	(MU 7/MU 25)
8.	Inter-district in-migration rate in urban area	(MU 8/MU 26)
9.	Inter-state in-migration rate in urban area	(MU 9/MU 27)

Variables of urban development

1.	Percentage of urban male workers to total urban male population	(DIU 1/DIU 14)
2.	Percentage of urban male worker in primary activities to total urban male workers.	(DIU 2/DIU 15)
3.	Percentage of urban worker in non-household industry total urban male workers	(DIU 3/DIU 16)
4.	Percentage of urban male workers in secondary activities to total urban male workers	(DIU 4/DIU 17)
5.	Percentage of urban male workers intertiary activities to total urban male workers	(DIU 5/DIU 18)
6.	Length of metalled road per 1000 sq. km^2 of area	(DIU 6/DIU 19)
7.	Male literacy rates in urban area	(DIU 7/DIU 20)
8.	Sex-ratio in urban area	(DIU 8/DIU 21)
9.	Percentage of urban population	(DIU 9/DIU 22)
10.	Percentage of female workers to total urban female population	(DIU 10/DIU 23)
11.	Availability of hospital beds per 1000 of urban population	(DIU 11/DIU 24)
12.	Availability of school per 1000 of urban population	(DIU 12/DIU 25)
13.	Electric connections (commercial and industrial) per 1000 of urban population	(DIU 13/DIU 26)

Table - 5.7

Correlation co-efficient between urban in-migration and urban development indicators - Gujarat, 1971

DIU 1	-.511*	.6125**	.6402**	.463	.899**	.729**	-.583*	.5346*	.869**
DIU 2	.377	.2827	-.396	-.101	-.612**	-.649**	.372	-.156	-.642**
DIU 3	-.401	-.186	.218	-.189	.384	.288	-.355	-.103	.353
DIU 4	-.599**	-.478	.545	.199	.670**	.467	-.600**	.294	.613**
DIU 5	.521*	.4321	-.432	-.194	-.436	-.127	.528*	-.282	-.334
DIU 6	-.447	-.381	.466	.387	.230	.051	-.456	.433	.1802
DIU 7	-.262	-.264	.345	.093	.323	.334	-.282	.167	.334
DIU 8	.623**	.689**	-.799**	-.472*	-.772**	-.579*	.692**	-.528*	-.730**
DIU 9	-.453	-.082	.147	-.186	.174	.114	-.356	-.174	.152
DIU10	-.267	.137	.339	.298	.589*	.548*	-.239	.357	.588**
DIU11	.104	-.032	-.178	-.049	-.144	.138	.063	-.086	-.045
DIU12	.1657	-.230	.227	.216	.169	.060	.038	.212	.145
DIU13	.0061	-.456	.047	-.140	.321	.176	-.156	-.110	.351

** 1% level of significance

* 5% level of significance.

The correlations co-efficients of different urban in-migration rate and developmental variables are given in Tables 5.7 for 1971 and in Table 5.8 for 1981.

For intra-district rural to urban migration a close examination of Table 5.7 shows that there is a positive significant relationship between intra-district rural to urban in-migration rate (MU 1) show a positive relation with sex ratio (DIU 8) and worker in tertiary activities (MU 5). The other variable showing negative relationships are urban male workers (DIU 1) and workers in secondary activities (DIU 4).

The last step of the stepwise regression analysis is given below.

		DIU 8	DIU 12	DIU 3	DIU 4	DIU 9	DIU 13
MU 1		+0.026	+1.806	+0.535***	-0.0444**	-0.171**	+0.111
R-U	= -12.44	(0.908)	(0.533)	(3.28)	(-2.83)	(-2.58)	(1.44)

The value of R^2 in the successive steps upto 6 are - 0.38, 0.51, 0.55, 0.58, 0.72 and 0.76.

In the above equation the developmental variables explained about 76 percent variation in rural to urban intra-district in-migration rate (MU 1). The development variable which show a positive change in MU 1 is worker in non-household

Table - 5.8

Correlation co-efficient between urban in-migration and urban development indicators - Gujarat, 1981

	MU 19	MU 20	MU 21	MU 22	MU 23	MU 24	MU 25	MU 26	MU 27
DIU 14	.284	.052	.137	-.275	.752**	.587*	-.202	-.094	.709**
DIU 15	.407	-.273	-.485*	-.281	-.636**	-.734**	.403	-.386	-.684**
DIU 16	-.428	.154	.096	-.319	.603**	.448	-.282	-.137	.561*
DIU 17	-.494*	-.087	.153	-.228	.497*	.290	-.410	-.059	.433
DIU 18	.306	-.045	.110	.404	-.164	.119	.221	.282	-.066
DIU 19	-.462	-.334	.611**	.496*	.254	.329	-.466	.568**	.286
DIU 20	-.344	-.326	.562*	.522*	.221	.426	-.372	.560*	.298
DIU 21	.650**	.542*	-.855**	-.546*	-.798**	-.827**	.677**	-.710**	-.824**
DIU 22	-.586*	.049	.212	-.040	.396	.317	-.439	.075	.376
DIU 23	.170	.143	.108	.048	.178	.136	.177	0.77	.167
DIU 24	.363	.383	-.307	-.336	.001	.024	.404	-.335	.010
DIU 25	.529*	.008	.032	.236	-.194	-.101	.412	.150	-.165
DIU 26	.273	.441	-.279	-.358	-.001	-.251	.352	-.335	-.091

** 1 percent level of significance

* 5 percent level of significance

industry (DIU 3) and the developmental variables which show a negative change are workers in secondary activities (DIU 4) and urban population (DIU 9).

The similar correlation co-efficient for 1981 are given in Table 5.8. The sex ratio (DIU 21) again in 1981 also showing a positive relationships. The worker in secondary activity (DIU 17) again in 1981 show a negative relationship with MU 19. The other developmental variable which show the significant relationship only in 1981 are schools per 1000 of population (DIU 25) a positive relationship, and the urban population (DIU 22) is showing a negative relationship with MU 19.

The last step of stepwise regression analysis is given below.

		DIU 21	DIU 25	DIU 19	DIU 24
MU 19 within the distt R-U	-37.65	** +0.044 (2.59)	*** + 5.122 (3.23)	* -0.011 (- 1.86)	+ 0.798 (1.47)

The value of R^2 in the successive steps upto 4 are - 0.42, 0.65, 0.74 and 0.75.

In the above equation the developmental variable

in the equation which are showing a significant change in MU 19 appeared in 1981 only. The developmental variable which shows a positive change is sex-ratio (DIU 21), and the variable which show a negative change are metalled road (DIU 19) and school (DIU 25).

A close examination of Table 5.7 shows that there is a significant positive relationship between urban to urban intra-district in-migration (MU 2) and urban male workers (DIU 1) and sex ratio (DIU 8).

The last step of the stepwise regression analysis is given below.

		DIU 8	DIU 13	DIU 3	DIU 4	DIU 10
$MU\ 2_{U-U}$	= -13.24	+0.0191*	-0.051	+0.155**	-0.167**	+ 0.250
		(1.81)	(-1.29)	(2.49)	(-2.19)	(1.31)

The value of R^2 in the successive steps upto 5 are 0.47, 0.56, 0.59, 0.67 and 0.71.

In the above equation the developmental variables explained about 71 percent variation in the urban to urban intra-district in-migration. The variable which show a positive change with MU2 are sex-ratio (DIU 8) and workers

in non-household industry (DIU 3). The worker in secondary activities as a whole shows a negative change in MU 2.

The similar co-relation co-efficient of urban to urban intra-district in-migration (MU 20) and developmental indicator are given in Table 5.8. The Table shows that only developmental variable that is sex-ratio show a positive significant relationship with MU 20.

The last step of the stepwise regression analysis is given below.

	DIU 21	DIU 16	DIU 25	DIU 26	DIU 18	DIU 22
MU 20 Intra-districts U-U -42.76	+0.0394 (5.86)	+0.0813 (3.89)	+1.44 (1.97)	+0.047 (2.94)	+0.064 (2.97)	+0.031 (1.95)

The value of R^2 in the successive steps upto 6 are - 0.29, 0.51, 0.60, 0.65, 0.76 and 0.82.

In the above equation the developmental variables explained about 82 percent variation in urban to urban intra-district in-migration (MU 20). All the variables in the equation are significant and show a positive change in MU 20. The variables are sex ratio (DIU 21), workers in non-household industry (DIU 16), Schools (DIU 25), Electric connection (DIU 26), worker in tertiary activity (DIU 18)

The co-efficient of correlation with inter-district rural to urban in-migration (MU 3) and developmental variables shows that the developmental variable of urban male worker (DIU 1) shows a positive relationships whereas sex-ratio DIU 8) shows negative relationship with MU 3.

The last step of stepwise regression analysis is given below.

		DIU 8	DIU 1	DIU 13	DIU 3	DIU 4
		**	*	***	**	**
MU 3 R-U	40.44	-0.075	+1.351	-0.461	-0.571	-0.505
		(-2.83)	(2.31)	(-4.62)	(-3.03)	(3.85)

DIU 9	DIU 11	DIU 12	DIU 10	DIU 7
+0.110	-1.661	+5.196	-1.152	-0.291
(2.83)	(-1.93)	(1.91)	(-1.90)	(-1.70)

The value of R^2 in the successive steps upto 10 are

0.63, 0.69, 0.73, 0.84, 0.89, 0.94, 0.95,
0.95 , 0.96 and 0.97

In the above equation the developmental variables explained about 97 percent of the variation in the rural to urban inter-district in-migration (MU 3). The urban male workers (DIU 1), worker in secondary activity (DIU 4) and school (DIU 12) show a positive significant change in MU 3.

The sex-ratio (DIU 8), electric connection (DIU 13), worker in non-household (DIU 3), hospital beds (DIU 11) and urban female worker (DIU 10) show a negative change in MU 3.

Similar correlation co-efficient for 1981 in Table 5.8. There are three new developmental variables which show a significant relationship with MU 21 only in 1981. The workers in primary activities (DIU 15) shows a negative relationship, and the metalled road (DIU 19) and male literacy rate (DIU 20) show a significant positive relationship with MU 21. The sex ratio (DIU 21) shows a negative relationship both in 1971 and 1981.

The last step of stepwise regression analysis is given below.

	DIU 21	DIU 16	DIU 24	DIU 19
	***	***	**	
MU 21 173.38	-0.174	-0.150	-1.56	+ 0.010
Inter-distts R-U	(-8.21)	(-3.37)	(-2.73)	(1.69)

The value of R^2 in the successive steps upto 4 are - 0.73, 0.85, 0.90 and 0.91.

In the above equation developmental variable explaine about 90 percent of the variation in rural to urban intra-

district in-migration (MU 21). The development variable which show a negative change are sex ratio (DIR 21), worker in non-household (DIU 16) and hospital beds (DIU 24).

The co-efficient of correlation between urban to urban in-migration rate at inter-district level (MU 4) and the developmental variable is shown in Table 5.7. The sex-ratio (DIU 8) shows the negative relationship with MU 4.

The last step of stepwise regression analysis is given below.

		DIU 8	DIU 3	DIU 4	DIU 13	DIU 9	DIU 7
MU 4 U-U	103.34	-0.088***	-1.687***	-1.306***	-0.548***	+0.201***	-0.191
		(-3.44)	(-9.81)	(-9.55)	(-7.34)	(3.20)	(-0.99)

The value of R^2 in the successive steps upto 6 are - 0.22, 0.47, 0.72, 0.90, 0.96 and 0.96

In the above equation the developmental variables explained about 96 percent of the variation in the urban to urban inter-district in-migration. The urban population (DIU 9) shows a positive change in MU 4. Other variable in the equation show a negative change in MU 4 are sex ratio (DIU 8) literacy rate (DIU 3) worker in secondary activity (DIU 4) and electrict connection (DIU 13).

The similar correlation co-efficient for 1981 are shown in Table 5.8. The metalled road (DIU 19) and urban literacy rate (DIU 20) first time in 1981, show a positive relationship with MU 22, sex ratio again show negative relationship with MU 22.

The last step of the stepwise regression analysis is given below.

		DIU 21	DIU 16	DIU 14	DIU 24	DIU 23
		***		***	**	**
MU 22	297.41	-0.215	-0.115	-1.84	-2.81	+ 1.37
U-U		(-7.55)	(-0.98)	(-3.06)	(-2.67)	(2.38)

The value of R^2 in the successive steps upto 5 are - 0.29, 0.73, 0.78, 0.81 and 0.87.

In the above equation the developmental variables explained about 87 percent of the variation in the urban to urban inter-district migration rate (MR 22). The urban female worker is showing a positive change in MU 22, The other developmental variable which are showing a negative change are sex ratio (DIU 21) worker in non-household in industry (DIU 16), urban male worker (DIU 14) and hospital beds (DIU 24).

The co-efficient of correlation with inter-state rural to urban migration (MU 5) and the developmental indicator as shown in Table 5.7, shows that the development variable which show the positive relationship are urban male worker (DIU 1), worker in secondary activity (DIU 4) and female workers (DIU 10) with MU 5. The variable which show negative relationship are sex ratio (DIU 8) and worker in primary activity (DIU 2).

The last step of stepwise regression analysis is given below.

		DIU 1	DIU 8	DIU 6
MU 5	3.701	+ 0.858**	-0.042***	-0.014**
R-U		(8.51)	(-5.27)	(2.33)

The value of R^2 in the successive steps upto 3 are 0.80, 0.91 and 0.93.

In the above equation the developmental variable explained about 93 percent of the variation in rural to urban inter-state in-migration rate (MU 5). The variable which shows positive change is male worker (DIU 1), and negative change by sex-ratio (DIU 8) and metalled road (DIU 6). The similar correlation co-efficient for 1981

are shown in Table 5.8. Besides the variables which have shown the relationships in 1971, the new variable in 1981 are, male worker in non-household industry (DIU 16) and worker in secondary activity (DIU 17) show a positive relationship with MU 23.

The last step of stepwise regression analysis is given below.

		DIU 21	DIU 14
MU 23 Inter-state R-U	26.49	-0.053*** (-4.21)	+ 0.526*** (3.51)

The value of the R^2 in the successive steps upto 2 are -

0.63 and 0.80.

In the above equation developmental variables explained about 80 percent of the variation in rural to urban inter-state migration rate (MU 23), sex ratio (DIU 21) show negative change and urban male worker (DIU 14) positive.

The co-efficient of correlation with inter-state urban to urban in-migration rate (MU 6) and developmental variable as shown in Table 5.7, show that urban male worker

(DIU 1) and female workers show a positive relationship with MU 6. The negative relation is shown by workers in primary activity (DIU 2) and sex-ratio (DIU 8).

The last step of stepwise regression analysis is given below.

		DIU 1	DIU 2	DIU 4	DIU 11
MU 6 U-U	15.81	+0.405*	-0.106*	-0.172*	+0.784*
		(1.86)	(-2.05)	(-2.21)	(1.93)
		DIU 8	DIU 12	DIU 10	DIU 3
		-0.029	-2.23	+ 0.288	+ 0.042
		(-2.50)	(-1.80)	(1.27)	(0.614)

The value of R^2 in the successive steps upto 8 are - 0.53, 0.65, 0.74, 0.77, 0.80, 0.83, 0.86 and 0.87.

The developmental variables explained about 87 percent of variation in MU 6. The development variables which show a positive change are urban male worker (DIU 1) and hospital beds , other developmental variables like worker in primary activity, worker in secondary activity and sex ratio.

The similar correlation co-efficient for 1981 are given in Table 5.8. The relationship is almost same as it

was noted in 1971 except the female worker (DIU 23) is not showing any relationship in 1981.

The last step of the stepwise regression analysis is given below.

	DIU 21	DIU 24	DIU 18	DIU 23
	***	**	**	
MU 24 18.12	-0.033	+0.279	+ 0.050	- 0.169
(Urban in-migration from other state) U-U	(-4.51)	(2.67)	(2.43)	(-1.32)

The value of R^2 in the successive steps upto 4 are

0.68, 0.72, 0.78 and 0.81.

In the above equation developmental variables explaine about 81 percent of variation in urban to urban inter-state in-migration rate (MU 24). Hospital beds (DIU 24) and worker in tertiary activity are showing a positive change in MU 24, sex ratio (DIU 21) shows the negative change.

5.2.2 Determinents of urban out-migration - 1971 and 1981

To see the relationship of urban out-migration and urban developmental variables, the following variables of urban out-migration are considered in the study.

Urban out-migration variables - 1971 and 1981

1.	Intra district U-R out-migration	(MU 10/MU 28)
2.	Inter-district U-R out-migration rate	(MU 11/MU 29)
3.	Inter-district U-U out-migration rate	(MU 12/MU 30)
4.	Intra-district out-migration rate in urban area	(MU 13/MU 31)
5.	Inter-district out-migration rate from urban area	(MU 14/MU 32)

The developmental variables remain same as given earlier for urban areas.

The correlation co-efficient of different urban out-migration rate and urban developmental variables are given in the Table 5.9 for 1971 and Table 5.10 for 1981.

A close examination of Table 5.10 shows that there is a significant positive relationship between urban to rural intra-district out-migration (MU 10) and workers in primary activities (DIU 2). The variables which show negative relationship are percentage of urban population (DIU 9) and workers in secondary activity (DIU 4).

The last step of stepwise regression analysis is given below.

		DIU 9	DIU 4	DIU 3	DIU 11	DIU 12
MU 10 U-R	8.86	-0.161***	-0.302***	0.387***	-1.221**	+2.009*
		(-5.69)	(-5.61)	(5.31)	(-2.74)	(1.81)

Table - 5.9

Correlation co-efficient between urban out-migration and urban development indicators Gujarat - 1971

	MU 10	MU 11	MU 12	MU 13	MU 14
DIU 1	-.250	-.332	-.585*	-.515*	-.542*
DIU 2	.471*	.708**	.578*	.4473	.580*
DIU 3	-.443	-.374	-.334	-.391	-.302
DIU 4	-.554*	-.431	-.467*	-.633**	-.425
DIU 5	.377	.0131	.174	.508**	.110
DIU 6	-.094	-.027	-.248	-.298	-.239
DIU7	.017	-.169	-.168	-.140	-.185
DIU 8	.449	.3781	.593**	.689**	.554*
DIU 9	-.602**	-.294	-.351	-.445	-.306
DIU 10	-.003	-.238	-.338	-.079	-.304
DIU 11	-.073	-.169	.008	-.016	-.035
DIU 12	.386	.153	.118	.140	.084
DIU 13	.018	-.028	-.210	-.256	-.242

** 1% level of significance

* 5% level of significance

The value of R^2 in the successive steps upto 5 are 0.36, 0.43, 0.71, 0.80 and 0.84.

In the above equation developmental variables explained about 84 percent of the variation in urban to rural intra-district in out-migration rate (MU 10). The variable which shows positive change in MU 10 is school (DIU 12), other variable like urban population (DIU 9), worker secondary activities (DIU 4), non-household industry and hospital beds.

Similar correlation co-efficient of urban to rural out-migration rate (MU 28) within the district and developmental variables are shown in Table 5.10. The variables which show the positive relationship are hospital beds (DIU 24) and availability of school (DIU 25).

The last step of stepwise regression analysis is given below.

		DIU 22	DIU 24	DIU 21	DIU 14
MU 28	-59.56	-0.049**	+0.560*	+ 0.040***	+0.469***
Urban out-migration rates within distt.		(-2.62)	(2.11)	(3.86)	(3.88)
U-R		DIU 19	DIU 25	DIU 23	
		+ 0.008	+ 2.41	- 0.374	
		(2.80)	(2.60)	(-2.41)	

The value of R^2 in the successive steps upto 7 are 0.47, 0.57, 0.60, 0.65, 0.73, 0.78 and 0.86.

Table - 5.10

Coorelation co-efficient between urban out-migration and urban development indicators - Gujarat, 1981

	MU 28	MU 29	MU 30	MU 31	MU 32
DIU 14	-.073	-.263	-.344	-.024	-.335
DIU 15	.427	.447	.649**	.434	.623**
DIU 16	-.268	-.270	-.330	-.104	-.322
DIU 17	-.442	-.258	-.273	-.347	-.271
DIU 18	.253	.026	-.077	.148	-.063
DIU 19	.082	-.007	-.193	-.117	-.142
DIU 20	-.059	.985	-.209	-.211	-.144
DIU 21	.414	.399	.642**	.564*	.603**
DIU 22	-.685**	-.490*	-.579*	-.441	-.572*
IU 23	.216	.254	.273	.221	.274
IU 24	.506*	.520*	.500*	.541*	.517*
IU 25	.518*	.380	.400	.356	.416
IU 26	.204	.064	.238	.370	.208

** 1 percent level of significance

* 5 percent level of significance

In the above equation the developmental variable explained about 86 percent of the variation in urban to rural intra-district out-migration rate (MR 28). The variables which have not shown a change in (MR 28) in 1971, but are showing change in 1981, are sex ratio (DIR 21), urban male worker, metalled road, and school are showing a positive change in MR 28.

The correlation co-efficient of inter-district urban to rural out-migration rate (MU 11) and developmental indicator is shown in Table 5.9. The worker in primary activities (DIU 2) show a positive relationship with MU 11.

The last step of the stepwise regression analysis is given bwlow.

		DIU 2	DIU 3	DIU 12	DIU 6
MR 11	-17.98	+0.220*	+ 0.016	- 0.259	- 0.016**
U-R		(4.97)	(0.608)	(-3.32)	(-2.91)

DIU 7	DIU 1	DIU 9
+0.169	+ 0.152	+ 0.019
(2.45)	(1.98)	(1.20)

The value of R^2 in the suggessive steps upto 7 are

0.50, 0.53, 0.57, 0.62, 0.68, 0.74 and 0.77

In the above equation the developmental variables explained about 77 percent of the variation in the urban to rural inter-district out-migration rate (MU 11). The worker in primary activity (DIU 2), literacy rate (DIU 7) and urban male worker (DIU 1) show a positive change in MU 11.

A similar correlation co-efficient of urban to rural inter-district out-migration (MU 29) and developmental indicator in Table 5.10. The hospital beds (DIU 24) is shown a positive relationship and percentage of urban population show a negative relationship to MU 29.

The last step of regression analysis is given below.

		DIU 24	DIU 15	DIU 26
		***	***	
MU 29	-0.432	+ 0.706	0.084	-0.025
		(3.38)	(2.97)	(-1.57)

The value of R^2 in the successive steps upto 3 are 0.27, 0.48 and 0.56.

In the above equation development variable explained about 56 percent of variation in the urban to rural inter-district out-migration rate (MU 29). The variable show a positive change are hospital beds (DIU 24) and workers in primary activities (DIU 15).

The correlation co-efficient of inter-district urban to urban out-migration (MU 12) and developmental indicator are also shown in Table 5.9. The variable shows the positive relationship are sex ratio (DIU 8) and percentage of urban population. The variables which show negative relationship are workers in secondary activities (DIU 4), urban male workers (DIU 1).

The last step of the stepwise regression analysis is given below.

		DIU 8	DIU 1	DIU 5	DIU 12
MU 12	-12.64	+0.060**	-0.806**	+0.596***	+ 0.568
U-U		(2.96)	(-4.17)	(-5.32)	(0.190)
		DIU 7	DIU 6	DIU 3	DIU 11
		+0.841	-0.082	-0.303	- 1.10
		(3.78)	(-3.75)	(-2.97)	(-1.45)

The value of the R^2 in the successive steps upto 8 are -

0.35, 0.44, 0.51, 0.71, 0.73, 0.78, 0.87 and 0.89.

The variables which show a positive change are sex ratio (DIU 8), and literacy rate (DIU 7). The other developmental variable which show a negative change in MU 12 are urban male workers (DIU 1), worker in tertiary activity

(DIU 5), metalled road (DIU 6) and workers in non-household industry.

The similar correlation co-efficient for 1981 are given in table 5.10. The developmental variables which have shown the relationship only in 1961 are availability of hospital beds (DIU 24) shows a positive relation and the percentage of urban population (DIU 22) shows a negative relationship.

The last step of the stepwise regression analysis is given below.

	DIU 15	DIU 22	DIU 21	DIU 25	DIU 18	DIU 26
	*	***	*	*	*	
MU 30 -40.62	+0.241	+2.249	+0.046	+ 4.27	-0.124	-0.072
Out-migration	(1.97)	(3.47)	(2.00)	(2.16)	(-2.19)	(-1.41)

The value of R^2 in the successive steps upto 6 are

0.42, 0.69, 0.73, 0.81, and 0.83.

In the above equation the developmental variables explained about 83 percent of the variation in the urban to urban inter-district out-migration rate (MU 30).

Table - 5.11

Correlation Co-efficient between urban net-migration and urban development indicators

Gujarat - 1971

	MU 15	MU 16	MU 17	MU 18
DIU 1	-.441	.651**	.573*	.615**
DIU 2	-.106	-.469*	-.281	-.303
DIU 3	-.161	.256	-.035	.000
DIU 4	-.320	.574*	.321	.376
DIU 5	.3635	-.412	-.215	-.273
DIU 6	-.478*	.445	.395	.439
DIU 7	-.334	.349	.132	.196
DIU 8	.428	-.808**	-.583*	-.614
DIU 9	-.1015	.178	-.026	-.059
DIU 10	-.331	.352	.355	.394
DIU 11	.193	-.147	-.042	-.062
DIU 12	-.090	.195	.131	.156
DIU 13	-.010	.049	-.039	-.022

** 1% level of significance

* 5% level of significance

5.2.3 Determinents of urban net-migration - 1971 and 1981

To see the relationship of urban net migration and urban developmental indicator the following variables of urban net-migration are taken.

Urban net migration variable

1.	Intra-district R-U net migration rate	(MU 15/MU 33)
2.	Inter-district R-U net migration rate	(MU 16/MU 34)
3.	Inter-district U-U net migration rate	(MU 17/MU 35)
4.	Inter-district net-migration rate in urban area	(MU 18/MU 36)

The correlation co-efficient of different urban net-migration rate and urban development variables are given in Table 5.11 for 1971 and Table 5.12 for 1981.

The correlation co-efficient intra-district rural to urban net-migration (MU 15) and developmental variables are not showing any significant relationship in Table 5.11. Wherein Table 5.12 the similar variables are showing the correlation co-efficient positive sex rate (DIU 21) and negative in metalled roads (DIU 20).

The correlation co-efficient between rural to urban inter-district net migration (MU 16) and developmental variables in Table 5.11 show a positive correlation with workers in secondary activities (DIU 4) and urban male workers (DIU 1) and the negative relationship is shown by

Table - 5.12

Correlation co-efficient between urban net-migration and urban development indicators - Gujarat 1981

	MU 33	MU 34	MU 35	MU 36
DIU 14	-.316	.166	-.069	.025
DIU 15	.233	-.521*	-.481*	-.507*
DIU 16	-.361	.130	-.109	-.013
DIU 17	-.334	.1816	-.063	.034
DIU 18	.220	.100	.342	.250
DIU 19	-.652**	.572*	.450	.509**
DIU 20	-.403	.512*	.479*	.502*
DIU 21	.555*	-.859**	-.678**	-.765**
DIU 22	-.286	.269	.207	.236
DIU 23	.070	.062	-.074	-.020
DIU 24	.121	.365	-.463	-.432
DIU 25	.321	-.026	.010	-.004
DIU 26	.213	-.272	-.370	-.338

** 1 percent level of significance

* 5 percent level of significance

sex ratio and urban worker in primary activities. Where as Table 5.12, the relationship is quite different. The urban male workers are not showing any relationship, same is true in the case of worker in secondary activities (DIU 17). The new developmental variables which show the relationship with inter-district rural to urban net-migration (MU 34) are male literacy rate (DIU 20) and metalled road (DIU 19).

The correlation co-efficient between urban to urban net migration (MU 17) and developmental indicator show the positive relationship with urban male workers (DIU 1) and negative with sex ratio (DIU 8). The same correlation co-efficient exercise is done for Table 5.12 (MU 35), again male workers are not showing any relationship. The new developmental variables which show a relationship to urban to urban inter-district net-migration are urban workers in primary activities (DIU 13) a negative relationship is observed, other is the male literacy rate (DIU 20) which show a positive relationship.

CHAPTER - 6

Summary and Conclusion

Summary

The present study aims that analysing the changes of internal migration in Gujarat by using the data provided by census of India in 1971 and 1981. The study covers both the urban and rural parts of all the districts of Gujarat. The study is concerned to the mass internal migration in the Gujarat. The study has given a particular emphasis to the process of out-migration which is generally neglected. The first and second chapters are devoted to the introduction of the problems area, data and methodology. In the third chapter the detailed analysis of the district-wise pattern of internal migration in Gujarat is carried out both for 1971 and 1981. The migration patterns is derived both in rural and urban area on the basis of migration streams.

The analysis show that the rural and urban migration patterns in the state, there is a marked difference in the pattern at intra-district, inter-district and inter-state levels. The migration pattern in terms of migration rate has changed in 1981 as compared to 1971. In the state there are few districts where both rural and urban in-migration pattern is dominated, these are Surat, Ahmedabad, Vadodara, Bharuch, Jam Nagar, Rajkot and Gandhi Nagar, both at inter-district and inter-state level. In the state there are also the groups of district like Panch Mahals, Kachchh, Surender

Nagar, Banaskantha, Bhav Nagar, Junagarh, Mahesana etc., where the out-migration from rural and urban areas is dominated. The magnitude of in-migration, out-migration and net migration rate have changed in 1981 as compared to 1971.

In the chapter fourth, the district wise patterns of development have been analysed with the help of some developmental indicators related to urban area and some other developmental variables related to rural areas. The analysis in rural area show that the rural developmental variables like cropping intensity percentage of gross irrigated area, percentage of rural male population, percentage of cultivator to total male workers, percentage of workers in primary activity and percentage of worker in tertiary activity to total male workers, show the increase in disparities in 1981 as compared to 1971.

To summarize the analysis of the urban developmental indicator in the state both for 1971 and 1981, it can be concluded that the indicator which are showing the increased in the co-efficient of variation in 1981 as compared to 1971 are percentage of urban workers in secondary activities to total urban workers, percentage of urban workers in tertiary activities to total male workers, metalled road per 1000 sq. km^2 area, availability of hospital beds per 1000 of

urban population of district, electric connections per 1000 of urban population of district. The rest of the urban developmental indicators are either remained same or declined in terms of value of co-efficient of variation of the indicators.

In the chapter five the relationship between migration rate and developmental variables have been worked out. This analysis is also carried out for urban and rural area separately for 1971 and 1981. The main findings of the chapter are that in rural area there is a significant inverse relationship between the rural to rural intra-district in-migration of the males and the infra-structural development of the agriculture like net sown area, cropping intensity, and gross irrigated area and the positive relationship with scheduled caste and scheduled tribe population and the rural male workers. The relationship is found to be almost same for 1971 as well as for 1981.

The relationship between urban to rural intra-district in-migration of males and the developmental variables individually did not show any significant relationship but for the agricultural labour a positive significant positive relationship is observed.

The corresponding rural to rural inter-district in-migration rate did not show much of the relationship with the developmental variables except for the length of metalled road in 1971. In 1981 however the relationship have improved. It

has shown a negative and significant relationship with percentage of workers as cultivator and percentage of worker in primary sector. It also had a positive relationship with percentage of workers in tertiary activity, rural male literacy rate and road length.

The urban to rural inter district male migration also showed improvement in its relationships with developmental variables. In 1971 it had significant positive relationship with percentage of workers in secondary and tertiary sector and negative relationship with workers in primary sector. This relationship was further improved in form of its additional negative relationship with workers as cultivators and positive relationship with road length and literacy rate.

Inter-state rural to rural male in-migration rate have shown a positive relationship with percentage of workers to total population and scheduled caste and scheduled tribe population. In 1971, it had a positive relationship with road length and which remained positive but insignificant in 1981. The urban to rural inter-state male migration did not show much correlation in 1971, in 1981 it showed negative and significant relationship with percentage of worker as cultivators and in primary sector. It had negative relationship with percentage of worker in primary sector and positive in secondary and tertiary sector and population of scheduled caste and scheduled tribe. Its positive relationship with sex ratio in 1971 has disappeared in 1981.

The relationship between rural urban intra-district male out migration and the developmental variables was not found significant both in 1971 and 1981 except for road length, which showed a positive relationship in 1971. This relationship disappeared in 1981. In rural to rural inter-district male migration no variable has shown a significant relationship, whereas in 1981 percentage of agriculture labour has shown a positive significant relationship. Negative significant relationships were observed in case of cropping intensity and gross irrigated area. In the inter-district rural to urban out migration metalled road has shown a negative significant relationship both for 1971 and 1981. Percentage of rural male workers has shown a negative significant relationship, and net sown area has shown a positive significant relationship only in 1981. The developmental variable like medical facility, post and telegram office and power supply however have shown a positive relationship.

In case of intra-district urban to rural male net migration and developmental variables the scheduled caste and scheduled tribe population a positive relationship was observed. In rural to rural inter-district net migration, significant positive relationship was observed with metalled road both for 1971 and 1981. The developmental variable like gross irrigated area, workers in tertiary activity and literacy rate have shown a positive relationship in

1981. The negative relationship was observed for worker in primary activity. In inter-district urban to rural male net migration and percentage of rural male worker and metalled road have shown positive significant relationship both for 1971 and 1981.

In intra-district rural to urban male in-migration had shown a negative significant relationship with percentage of urban male workers which disappeared in 1981. The workers in literacy sector among rural male has shown a positive significant relationship. The other variable like percentage of rural male worker in secondary sector, and the sex ratio had shown a significant negative and positive relationship respectively. At intra-district level urban to urban male in-migration has shown a positive relationship both for 1971 and 1981.

The inter-district rural to urban in-migration the metalled road and male literacy rate have shown a positive significant relationship and the significant negative relationship by sex ratio and worker in primary activity. Almost the same relationship was observed between urban to urban male inter-district in migration and developmental variables. The inter-state rural to urban male in-migration and the percentage of female workers had shown a significant positive relationship in 1971 and disappeared in 1981. The worker in non-household industry has shown a positive relationship. In case of other variables relationship

remained same both for 1971 and 1981. The urban to urban male in-migration and the male worker has shown a significant positive relationship. The sex ratio and the urban worker in primary activity have shown a negative significant relationship.

The urban out migration rate and urban male worker, the significant negative relationship was observed in 1971 and which has disappeared in 1981 at the inter-district level. The urban worker in primary activity had shown a significant positive relationship both at intra-district and inter-district level. The worker in secondary activity had shown a significant negative relationship which has become insignificant in 1981. The sex ratio had shown a significant positive relationship both in 1971 as well 1981 at the inter-district level. The urban out migration rate and percentage of urban population has shown the negative significant relationship. The availability of hospital bed has shown the positive significant relationship only in 1981.

The urban net-migration and the worker in primary activity has shown a negative significant relationship. In terms of metalled road length the significant relationship was not observed 1971 but in 1981 the significant relationship was observed. The sex-ratio which has shown a positive significant relationship at intra-district net migration level, and negative significant relationship at inter-district net migration level.

CONCLUSION

The rural in-migration is found to be continuosly increasing in the district having certain geographical advantages like Surat, Ahmedabad, Vadodara, Bharuch, Jamnagar, Rajkot and Gandhi Nagar. The other districts showing higher out-migration from urban and rural areas are Panch Mahals, Kachchh, Surender Nagar, Banaskantha, Bhav Nagar, Junagarh and Mahesana.

The cropping intensity, workers in as cultivators and in primary and tertiary sectors have shown wider regional disparities in 1981 compare to 1971. In urban area workers in secondary sectors tertiary sector, road length, health facilities and electric connections have also shown higher disparities in 1981.

In the light of the interrelationships between the developmental variables and the internal migration further be concluded that the rural to urban in-migration is basically the result of the improvement of the agricultural infrastructure related with employment generation for the in-migration of medium and longer distances, the main determinants are found to be non-agricultural activities and literacy in the rural areas. The out-migration from rural areas however did not show much of the higher relation both 1971 and 1981.

Migration into urban areas seems to be primarily determined by percentage of worker to total population in the case of longer and medium distances in migration. Road length and literacy are found to be main determinants of urban to urban inter-district migration in 1981. The migration appears to be male selective for medium and longer distances both for 1971 and 1981. In the case of shorter distance the same is not true.

Presence of primary activities in urban areas are major caused of out migration from urban area. The tendency is found to be stronger in 1971 than 1981.

The levels of secondary activities in urban area have been able to reduce migration from urban area.

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