Characteristics and Correlates of Urbanization in Central Himalayan Region

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DEDICATED

TO

MY

PARENTS

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CERTIFICATE

Certified that the dissertation entitled, "CHARACTERISTICS AND CORRELATES OF URBANIZATION IN CENTRAL HIMALAYAN REGION" submitted by RAVINDRA SINGH RAWAT in partial fulfilment of six credits out of the total requirements of twenty four credits for the award of the degree of Master of Philosophy (M.Phil.) of this University , is his original work and may be placed before the examiners for evaluation. This dissertation has not been submitted for the award of any degree of this university or of any other university to the best of my knowledge.

Kusum Chopra
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A C K N O W L E D G E M E N T

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CHAPTER- I

INTRODUCTION

The study of levels of regional Deveopment shows that among the lowest spectrum of development, the hill districts of Himalayas constitute a significant proportion.[1] These areas have several geographical, social and economic constraints. Both the rural and urban components of economy are found to be weak.[2] An understanding of the spatial nature of economy merits special attention and will help in suggesting in some of the remedial measures.

As the rural economies diversify the nonagricultural activities give rise to the process of urbanization. The nature of urbanization is therefore intrinsically linked with the growth of agricultural sector. As the economies further diversity the relationship between the rural and urban components of the economy become more and more complex. In the case of hill region where not much of diversification has taken place, the relationship between rural and urban economies may be straight - not very complex.

In the present study, therefore an attempt has been made to study the pattern, characteristic and process of

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1. Mitra, Ashok, "Levels of Regional Development in India", in General Report on India; Censos of India 1961. pp-48-49
2. Ibid., pp.52-59.

urbanization in the Himachal Pradesh and Uttar Pradesh hill districts. This process of urbanization is further explained with the help of the changes taking place in the economy. These changes relate to the three sectors of the economy, viz., primary, secondary and tertiary and some other variables related to the development.

Under the process of urbanization villages turn into towns and towns develop into cities. An increasing level of urbanization is an important index of overall economic development[3]. The essential pre-condition for economic development is continuous shift of the rural work force to urban areas for employment in secondary and tertiary sectors, which gives rise to process of urbanization. The process of urbanization motivates the excess manpower in primary or agricultural sector to migrate to the urban areas and sets them into non-agricultural production activities. So in the study of urbanization rural areas cannot be ignored, because of the basic role they play in the process of urbanization. This can be seen in the case of Central Himalayas region where good number of villages has been included in town areas in 1981 census, because of the expansion of urban boundaries.[4]

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3. Singh, S.C. & Singh, B.N., "Urbanization in U.P. Himalayas", in Indian Journal of Regional Science, vol.xix, no.2, 1987, p.51.

4. Primary Census Abstract, Himachal Pradesh, Census of India 1981, p.35.

It can be said that economic development and urbanization are interrelated and interdependent. Economic development is an outcome of a composite function of primary, secondary and tertiary sectors of economic activities. Generally primary activities are associated with rural living, but in a low proportion it is also found in the urban areas. Secondary and tertiary activities, on the other hand are characteristic of urban areas of the region. This emphasises the association between the process or urbanization and increase in secondary and tertiary activities. But urbanization is not divorced from primary activities in its entirity.[5]

There are certain attributes which make distinction between the "urban" and "rural". These two are associated with dichotomies of "modern" and "traditional" or "industrial" and "agricultural". But rural attributes can be traced out in urban areas and urban attributes in rural areas. Urbanization, then, involves the transformation of rural attributes in urban ones.[6]

Urbanization as a process is a universal phenomenon. There are certain common characteristics which are found in

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5. Sharma, N., "Degree of urbanization and levels of economic development in Chota Nagpur: A study in Nature of Relationship", In Indian Journal of Regional Science, vol.iv, No.2, 1972, p.143.

6. Prakasharao, V.L.S., "Urbanization in India:Spatial Dimension, Concept Publishing Company, New Delhi, 1983, p.13.

developed and developing countries. The important differences which can be observed, are in the structure of urban-industrial relation, city size and spatial distribution and urban-rural relationship.[7]

There are three different scales in the process of urbanization - metropolitan cities, market towns and small towns. These three have different characteristics. Firstly metropolitan cities usually with much industry of particular types, secondly market towns with commercial sector as the key urban sector, basically rooted to the regional resource base. The small towns have the service sector as the key sector to serve the adjoining countryside. The metropolitan growth of cities has advance technological base against the appropriate technological base of market towns of medium size and small towns which have basically agricultural production and servicing activities as the basic activities.[8]

In the study region, a good proportion of the towns are service towns. According to 1961 Census in the region, there were 44 towns as a service towns out of 51 total no. of towns. Even in case of whole Himalayan region 87 towns were found as service towns out of 112 towns, 17 were

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7. Prakasharao, V.L.S., Op:cit. p.16.
8. Prakasharao, V.L.S., Op:cit. p.16.
9. Mitra A., Op:cit. p.52.

agricultural towns, 2 manufacturing and 3 towns were trade and commerce function.[10]

Taking account of Himalayan region, the actual urbanization of this region has started after independence. Some towns have been developed as tourist resorts and military camps.[11] With the slow economic development of the regions the urban population is also growing slowly. During 1971-81, the rural to urban migration has been observed high. These growing towns in the region are trying to attract the population of hill districts, which earlier used to migrate in a huge number towards the cities of plain area.[12] Though this migration towards the plain areas is still continuing, but the volume of migration has slightly decreased than early time.

The very important factor, which promotes the spread of urban places, is the transportation and communication, specially in case of mountainous region, this become much more important. These transportation linkage creates a linear pattern of urban places in mountainous region.[13]

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10. Mitra A., Op.cit., p.53-59.

11. Chand R. and Thakur M.C., "Himalaya Ka Jan Sankhyatmark Swaroop", in Sekhar Pathak (eds.) Pahar, No.(i), 1983, p.8.

12. Chand R. and Thakur M.C., "Badalta Jan Sankhaya Paridrisay", in Sekhar Pathak (eds.) Pahar, No.(ii), 1984, p.9.

13. Sharma K.D., "Endogenous and Exogenous Urbanization". A case study of Uttarkhand (U.P. Himalayas), in O.P.Singh (eds.) Himalayas : Nature, Man and Culture" Rajesh Publication, New Delhi, 1983, p.277.

An important point about the urbanisation in the Himalayan region is the socio-economic differentiation between plain and adjacent mountain, which is clearly reflected in the process of urbanization. An impelling force of socio-economic development originate in the adjoining plain area and gradually and steadily diffused in the interior mountainous region.[14] These significant regional disparities in the urban growth pattern, the mountainous region has lagged behind in the race of development in comparison of foot hill tract of the region. The urban centres in the interior areas are very small and growth rate is slow. But in the lesser Himalayan range urban centres are growing faster rate. Though some centres have received impetus from the governmental developmental scheme.[15]

To the western scholar, Indian urbanization appears to be a paradox.[16] It is because the European urbanization was result of industrialization. But on the contrary in India urbanization proceeded from the lack of demand in rural areas and increased in urban population was not followed by decrease in rural population. Almost same situation has been

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14. Ibid., p.278.

15. Tiwari, M.M. and Singh, S.K., The urban facet of the U.P. Himalaya in Historical Prospect," in O.P. Singh (eds.), Himalaya: Nature Man and Culture, Rajesh Publication, New Delhi, 1983, p.296.

16. Peach, G.C.K., "Urbanization in India", in Beckinsale R.P. and Houston J.M. (eds.), Urbanization and its problems, Oxford Press, 1970, p.297.

found in mountainous region of Himalaya, where industrialization is almost nil, but urbanization is taking place. Hauser says that this situation is "over urbanization". He observed that in over urbanized areas, rural migrants have been "pushed" rather than "pulled".[17]

In the process of urbanization the role of rural to urban migration plays an important role. The role of natural increase in urban growth is not very much significant in 1951-61 Census, where migration as a factor pushing up urban growth was found more important than natural growth.[18] Bogue and Zacharich says that rural to urban migration is by far the major components of urbanization and the chief mechanism by which all the world's great urbanization levels have been accomplished.[19] Davis also supports the above view of Bogue and Zacharich.[20]

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17. Hauser, P.M., (ed); Urbanization in Asia and Fareast", Proceeding of the Joint UN/UNESCO Seminar; in Cooperation with ILO, Urbanization in ECAFE Region Bangkok, August (8-18), 1956, p.9.

18. Vaidyanathan, K.E., "Components of urban growth in India, 1951-61 in Proceeding of the Joarnal Conference of the International anion for scientific study of population, vol.iv, London 1969, p.2941.

19. Bogue & Zachariach, "Urbanization and Migration in India, in Roy Turner (ed.) India's Urban Futare, Berkeley University, California Press, 1972, p.28.

20. Davis, K. "Urbanization to India", in Roy Turner (eds.) India's Urban future, Berkeley University. California Press, 1972, p.5.

Modern urbanization has been found to have inherited the tendency of concentration towards large metropolitan centres. The process of concentration in turn has posed the serious problems of regional economic inequalities on the one hand and management and administrative problems on the other hand.[21] In the wake of unprecendented concentration of population in the few pockets, the small and medium towns are being ignored. These towns are constantly losing their proportional share in the total urban population.[22] The metropolitan urbanization however is a phenomenon of the plain and coastal areas. In a country like India there remains significant proportion of hilly region mostly inhabited by thin population, where urbanization still is not found to be so complex. The urbanization in this region is rooted mainly in the local economies and follows very balanced pattern.

Literature Survey:

'In the history of population studies modern urbanization is a recent phenomenon. The modern urbanization has started after the industrial revolution in western world. But in case of India, urbanization process has started very late. Prior to independence the major

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21. Alam, S.M., "Distortions of Settlement System in India" in Mhadeva P.D. (ed.) Urban Geography, Heritage Publishers, New Delhi, 1986, p.182.

22. Ibid., p.182.

proportion of urban population was concentrated only in big metropolitan cities like Bombay, Calcutta etc. But after independence with rapid changes in agriculture and industries as well as services, the tempo of urbanization has been increasing continuously. The main drawback is that urbanization in the third world countries as well as in India is not much favourable towards balanced economic growth. So the importance of the study of urbanization with economic development becomes very important. When we see the studies done on urbanization at international level as well as in Indian context, then very few studies have been done to relate the urbanization with the economic development. Long back a few economist like Losch, Hoover and Chamberlin have emphasised the place of a city in the theory of micro-economic equalibrium and new classical model of growth.

Discussing about literature available on urbanization, at international level many studies have been done by western scholars. In case of India, many studies have been done after independence. But very few literature is available on our study required.

Major Studies done on Urbanization at International Level

In the history of urbanization, considering if a broad definition of urbanization is accepted, the modern study of urban forms and institutions began with works such as Fustel

de Coulanges's (1864)[23], "The Ancient City", Weber's (1899)[24], "The Growth of cities" in the Nineteenth Century and Pirenn's[25] (1925), "Medieval Cities." These studies were restricted to the narrower demographic perspective - the distribution of population between urban and rural areas and the causes and consequences of this distribution.

For the first time in 1948 UN[26] made effort to collect data for a large number of countries on rural and urban population. Again on 1952 the demographic year[27] book contained rural-urban breakdowns of population for 160 countries and an introductory chapter on "Urban trends and characteristics". In these demographic year books, the analysis never focuses specifically on the trends and conditions of urbanization, but rather on urban rural differentials. The basic importance of these yearbook is that these publications had actually stimulated research on urbanization.

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23. Fustel de Coulanger, Numa Denis, "The Ancient City" (Translated by Sillard Small), New York, Doubleday and company, 1864.

24. Weber, Adna F.,"The Growth of Cities in the Nineteenth Century", New York, Columbia University Studies in History, Economics and Public Law., 1899.

25. Pirenne, Henri, "Medieval cities", Princeton: Princeton University Press, 1925.

26. UN., 1948 Demographic Yearbook, New York, United Nations. 1949

27. UN., 1952 Demographic Yearbook, New York, United Nations. 1953

Hoyt (1962)[28] was the first scholar who made extensive use of data previously published by UN and International population and urban research.

'World urbanization 1950-1970: Volumje I. Basic data for cities, countries, and region was the second major effort in the study of urbanization, done by Davis[29] in 1979. This volume constitutes a source book of worldwide statistics on urban and rural population, on the number and size of cities, and on indicies of urbanization and change, all made comparable in regard of time.'

'In 1972 Davis[30] published his second volume which represents a comprehensive effort to analyze the level and trend of world urbanization. In this volume Davis tried to focus on the relation between world urbanization and the growth of the world's urban and rural population, the distribution of population among cities of various size and the effects of cultural and economic development on urbanization.'

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28. Hoyt, Homer., "World Urbanization: Expanding population in a shrinking world", Washington, Urban Land Institute, 1962.

29. Davis, Kingsley., "World Urbanization 1950-1970, vol:I: Basic data for cities, countries and regions", Berkeley, Institute of International Studies, University of California, 1969.

30. Davis Kingsley, "World Urbanization 1950-1970: vol.II: Analysis of Trends, Relationship and Developments", Berkeley, Institute of International Studies, University of California, 1972.

UN has published a series of four papers using extensive set of data. The first paper (UN 1970)[31] followed the Population Commission mandate to use the urban definition of individual countries. The second major working paper (UN 1972a)[32] with a primary function of data production, showed estimates of urban-rural population by sex-age for the world; for MDC's and LDC's region. The third paper (1972b)[33] produced the estimates of the components of urban-rural population change. In the final paper (1972c)[34] provides useful information on the number, growth and geographical distribution of cities with one million or more.

(Berry (1962)[35] pointed out that economic association of the region exist between the level of Economic development of a country and degree or urbanization. These two things are the basic criteria for the overall development of any

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31. United Nation, "Urban and Rural Population: Individual Countries 1950-1985 and Regions and major areas 1950-2000", ESA/P/WP.33/RW, New York, UN.

32. United Nations., "The World's Million cities; 1950-1985", ESA/P/WP. 45, New York, UN, 1972.

33. United Nations., "Sex-age composition of the Urban and Rural population of the World; Major Areas Regions and Individual countries in 1960", New York, UN. 1972.

34. United Nations, "The components of urban and rural population charge: Tentative Estimates for the world and twenty from regions for 1960". ESA/P/WP.46, New York, UN. 1972.

35. Berry, B.J.L., "Same relation of Urbanisation and basic pattern of economic development", In F.R. Bryee (ed.) 1962, Urban System and Economic Development, 12 Eugene Oregon. 1962.

country or region. Berry[36] in his another study noted the rank size distribution, and says that cities perform essentially the same set of function as centres of transport routes, as centres of primary or secondary economic activities or as central places preparing tertiary economic functions.

Harris & Ullman[37] (1945) have given classical principles of urbanism, identifying three different types of cities. According to them cities are central place performing comprehensive services for surrounding areas. Hoselitz, B.F.,[38] recognises another set of cities on the basis of their role in the economic development of an area. A city can be called generative if its continued existence and growth in one of the factor, accountable for the economic development of the area. Breese[39] has done a very relevant study of urbanization in newly developing countries, which can help in making analytical framework for analysing urbanization pattern.

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36. Berry, B.J.L., "City size distribution and Economic development", in Economic Development and Cultural change, IX, July 1961, p.575.

37. Harris, C.D. & Ullman, E.L., "The nature of cities" in Annals of American Academy of political and social Science, XLII, Nov. 1945, pp.7-17.

38. Hoselitz, B.F., "Generative and Parasitic cities", in Economic Development and cultural change" III, April 1955, pp.284-94.

39. Breese, Gerald., "Urbanization in newly developing countries", Prentice Hall, New York, 1966.

Hauser and Gardner[40] (1980) have prepared paper for the East-West population Institute, and say that, to the extent the urbanism becomes the way of life of even half of the world's population by centgury's end. They also say that world may undergo, in the next several decades, the most radical changes in social economic and political life even experienced in so short of time.

In short "most of major research projects on urbanization have had as one of their primary objectives the production of estimates and projection of the population living in urban areas of the world. A second major objective of these studies has been an analysis of the level and trends of urbanization for the world and for countries grouped by regional or some other international".[41]

Major Studies done on Urbanization at National & Regional Level

In context of Indian urbanization the first pioneer attempt at international level was started in series of seminars held at Berkeley (California) in 1960.[42] In this

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40. Hauser, P. and Gardener W.R., "Urbanization, Urban growth and Intermediate cities: Trends and Prospects," Paper prepared for East-West Population Institute Workshop on intermediate cities, Honolulu Hawaii, July, 1980, pp.16-28.

41. Goldstein, S. and Sly, D.F. (eds.) "Patterns of Urbanization: Comparative country Studies". ORDINA EDITIONS, DOLHAIM, 1975, p.31.

42. International Seminar on Urbanization in India, "Sponsored by Kingsley Davis, Richard L. Park and Catherine Bourer Wurster" at Berkeley California in 1960.

series of seminar the problems of urbanisation in India were discussed for the first time. The papers show that the urbanization in India is rapidly getting momentum and new-dimensions. "Two tremendous forms have been unleashed in India today; a relatively rapid rate of population growth and increasingly rapid rate of urbanization."[43] observed by Ashok Mehta in the summing up of the seminar discussion.

Turner[44] (1962) feels that the urbanization is 20th century phenomenon and it has become dominat in economic processes of the world. He has connected urbanization processes with the increasing economic specialization and technological development.

Harris[45] (1959) in his book on urbanization presumed that Indian cities tend to have a long normal size distribution and which conform to rank size regularity organised in a system, comprising interacting interdependence parts.

Davis[46] (1951) has written a book on "The population of India and Pakistan". In this book Davis has provided with

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43. Ashish Bose, "Studies in India's Urbanization 1901-71", Studies in Demography, No.I, Institute of Economic growth, Tata Mcgraw Hill, New Delhi, 1973.

44. Roy Turner (ed.). "India's Urban Future", Berkeley, University of California Press 1962.

45. Harris, Britton., "Urbanization policy in India", "Paper and proceeding", The Regional Science Association, I, 1959.

46. Davis, Kingsley., "The population of India and Pakistan", New Jersey, Princeton University Press, 1951.

ample evidence to the effect that rural-urban migration is the most important function considering and contributing to urbanization in India. Bogue and Zachariach[47] (1962) also indicated that this rural to urban migration is directed not only towards the very large cities but also to hundres of medium size and small cities in almost all the region. But the degree varies according to levels of development of the different region and cities.

Sovani[48] (1966) in his book, basically deals with different characteristics of urban India. With the process of urbanisation, he says that "over urbanization" is a emerging problem in India, which has been created because, rural migrants have been "pushed" rather than "pulled" into urban areas as a result of great and mounting pressurein the rural areas.

Dr. Anderson[49] brings out clearly the close interdependence of urbanism and industrialisation in our civilization. He defines industrial urbanism as a non-agricultural way of work, social mobility and transiency of contact etc. Urbanization process, even if one takes East and West, is interlinked in the same global network.

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47. Bogue, D.J. & Zachariach, K.C., "Urbanization and Migration in India" In Roy Turner (ed.) India's Urban Future", Berkeley, University of California, 1962.

48. Sovani N.V., "Urbanization and Urban India", Asia Publishing House, New York, 1960.

49. Anderson Neels., "Our Industrial Urban Civilization", Asia Publishing House, New York, 1964.

Colin Rosser[50] in his survey under Ford Foundation has surveyed the Urban demographic facts and prospects for India. The main theme of this survey is to understand the national perception of the place of urban development in Indian developmental priority. The main emphasis of this survey is on urban administration and governmental policies on urbanization. This survey report tries to see national planning response towards industrial development and urban development.

Ashish Bose[51] has done the study on India's urbanization starting from 1901 to 1971. This book presents different aspects of urbanization, starting with an evaluation of the definition of term "Urban" adopted in Indian census and ends with a discussion of demographic implication of population and environment for developmental planning. In the last part of the book a series of statistical tables on urban India and rural-urban contrasts are presented.

Premi[52] in his study says that the problem of having a number of outmigrating towns is not peculiar to India, in

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50. Rosser Colin, "Urbanization in India", International Urbanization Survey. The Ford Foundations, 1974.

51. Bose Ashish, "Studies in India's Urbanization 1901-1973", Studies in Demography, No.I, Institute of Economic Growth, Tata McGraw Hill Publishing Co. Ltd., 1973.

52. Premi, M.K., "Urban Outmigration: its pattern and characteristic of outmigrants," Occasional Paper, Centre for Study of Regional Development, SSS, JNU, New Delhi, 1976.

fact most countries have to pass through this stage in the process of Urbanization.

Singh[53] observed that the administration for urban development has failed to cope with the problem created by rapid pace of urbanization, which has been causing the emergence of slums of Bombay, Madras, Calcutta and Delhi etc. He says "Urbandevelopment" means the creation of basic civic amenities in our cities.

Rakesh Mohan and Pant[54] have tried to trace out the components of unexpected urban growth. The 6th five year plan projected the level of urban population to be about 148 million in 1981, and level of urbanization 22.04%. In fact the 1981 census shows the level at about 156 million. They have explored that region where it is high and where it is low. One of the important point that emerges from the analysis is that India has had a very stable structure of settlement that most of the urban growth has been because of the enlargement of existing towns at every level and not so much because of addition of new towns.

Prakasha Rao's[55] book concerns the spatial dimension of India's towns and cities, taking into consideration social

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53. Prakasha Rao VLS., "Urbanization in India, Spatial Dimension"; Concept Publishing Company, New Delhi, 1983.

54. Singh Kamaldeo Narain, ½., "Urban development in India", Abhinav Publication, New Delhi, 1978.

55. Rakesh Mohan and Pant Chadrashekhar, "The Morphology of urbanization in India: Some result from 1981 Census". (Abstract), 1982.

and political aspects. The first part of book focuses on the complexities underlying the urbanization process, pattern and correlates. This is followed by an analysis of the structural and behavioural aspects of urban system and city system. Recognizing the increasing emphasis on the welfare cannotation of urbanization, the problem associated with the dispersal of urban infrastructure are analysed.

R.B. Mandal's[56] edited book "Urbanization and Regional Development" is also the collection of many articles written by different writers. This book aims to investigate the growth of urbanization and planning process in developed and developing countries. The concentration of population at one place due to migration accretion of workers engaged in secondary and tertiary sector gives rise to urban centres, urbanism and the continuation of the process of urbanization. This urbanization at one hand is a process of social transformation from rural to urban areas. Urban places as growth pole and centres are closely associated with the urban oriented resource development, transport and communication line, productive hinterland and industrial establishment, which are essential elements of urban system and regional development.

Hanumappa[57] in his book "Urbanization trends in India"

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56. Mandal R.B., & Peters G.L. (eds.), "Urbanization and Regional Development", Concept Publishing Company, New Delhi, 1982.

57. Hanumappa, H.G., "Urbanization Trends in India (case study of a medium town)", Ashish Publication House, New Delhi, 1981.

has studied the socio-economic structure of Hospet town (class II) which is functionally "primary activities" centre. Author says that planning of urban areas imply a thorough knowledge of both socio-economic and physical needs of not the town only but also of neighbouring villages. This is particularly true in case of small and medium size towns than the large towns or million cities.

Alam[58] has tried to put light on the distortion in the settlement system of developing countries and particularly that of India, when the present urban centres have an impact of direct outcome of the policy during colonial rule to concentrate investment and high order administrative and political function in a few large urban centres. Author is of the view that colonial capitalistic system also induced the growth of monopolistic production and finance capitalism which have taken control of private metropolitan hierarchy in India.

Dasgupta's[59] edited book "Urbanization, Migration and Rural Change: A case study of West Bengal" is a collection of articles. This book collected a wide spectrum of disciplines from Economics, Sociology and Anthropology to

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58. Manzoor Alam, "The national settlement system in India", in Bournse L.S. & others (eds.) Urbanization and settlement system: International Perspective, Oxford University Press., 1984.

59. Dasgupta Biplab, (ed.), "Urbanization Migration and Rural changes: A case study of West Bengal". A.Mukherjee & Co. Pvt. Ltd. Calcutta, 1988.

Urban Planning and Demography. The basic thrust of the book is to understand various facets of the process of urbanization in West Bengal. A major feature of this volume is its attempt to establish links between urban development and rural changes and to avoid consideration of urban issues in isolation from the rural reality and historical setting.

Study done by Kundu[60] gives correlated urban growth in all size class of towns for all the states and treat a valuable literature for doing study of urban growth for each state of India.

Sadsyuk[61] in her article "Urbanization and spatial structure of Indian Economy" tried to see the side by side, the growth of towns, and the process of economic regionalization. She says that India is at the phase of transition, where she is trying to build up her self-sustained growth structure through balanced development of the various regions. This balanced economic growth impart a special significance to the study of the ecology of urbanization in this country. She tried to visualize the focal point for socio-cultural, economic, administrative and

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60. Kundu, Amitabh., "Theories of city size distribution and Indian Urban structure: A Reappraisal, EPW, Weekly (Special Article) vol.XVIII, No.31, July, 1983, pp.1961-68.

61. Sadasyuk, V. Galina., "Urbanization and the spatial structure of Indian economy", in Economic and Socio Cultural Dimension of Regionalisation: An Indo-USSR Collaboration Study", Census Centenary, Monograph No.7, (edited), A. Chandrasekhar, Census of India 1971, Office of Registrar General, Ministry of Home Affairs, New Delhi.

other activities, which function as the centres for generating, as well as stabilising the process of region formation.

Bhattacharyay & Mazumdar[62] have attempted to do an intertemporal and inter-sectoral analysis of the occupational structure of the big cities and also a comparative study between cities. The time period of the study is a long one, namely 1901 to 1971. Further more they have tried to look at the degree of urbanization using several criteria and obtain a ranking of big cities according to the degree of urbanization.

Singh and Dabral[63] have taken five broad categories, primary, industry, trade and commerce, transport and services for the comparative analysis of population growth and functional characteristics for the towns of Ganga-Yamuna Doab (1901-61). Reddy[64] also took the study of Secunderabad Cantonment to observe the functional transformation. Same

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62. Bhattacharyay B.N. & Majumdar, K., "Changes in structure of Urbanization of big cities in India - An Inter-sectoral Comparative Analysis", Indian Journal of Regional Science, vol.XII, No.1, 1980, pp.1-18.

63. Singh R.P. and Dabral M.P., "A Comparative Analysis of the growth of functional characteristics of Towns of Ganga Yamuna Doab," Indian Geographical Journal, vol.XLV, 1&2, 1970, pp.40-45.

64. Reddy K. Vittal, "Functional Transformation of an Urban area: A case study of Secunderabad Cantonment," Deccan Geographer, 20,1, 1982, pp.197-201.

type of study for urban areas of Midnapur district has been done by Jana[65]

Bradrock[66] has introduced three new techniques for defining and measuring urban influences on rural areas which has been generally tackled through "flow analysis", "gradient analysis" and "urban field analysis". He used these three techniques in the study of Madras-Bangalore region. The concept of metropolitan dominance has been examined.

Chandna and Gopal Krishna[67] (1973), Munshi[69] (1975) and Mukherjee[69] (1973), all of them have studied the trends of urbanization and distribution pattern of urban population. But the "hyper-urbanization" traits which is very common in developing countries, is studied in Indian context by S.K. Munshi.

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65. Jana, M., "Decennial Growth and functional Characteristics of Urban areas in Midnapur district," Geographical Review of India, XXXVII, 4, 1975, pp.364-377.

66. Bradrock, R.W., "The Hinterland of Madras and Bangalore, "The Indian Geographical Journal, XLIX, I, 1974, pp.10-16.

67. Chandna, R.C., & Krishna Gopal., "Urbanization in Haryana (1961-71)", The Geographer Vol.XX, 1, 1973, pp.16-32.

68. Munshi, S.K., "The nature of Indian urbanization: A Review," "Geographical Review of India, Vol.XXXVII, 4, 1975, pp.287-99.

69. Mukherjee, A.B., "Levels of Urbanization in Uttar Pradesh, 1961, "Geographical Review of India" Vol.XXXV, 1, 1973, pp.31-42.

Lal[70] (1973) and Srivastava and Ramachandran[71] (1964) have also analysed the concept of rural-urban fringe in their studies. Deshpande[72] (1975) assessed the significance of suburbanization in its spatial demographic functional and ecological dimension in Indian context.

Raj Bala[73] worked out "urbanization in Rajasthan State 1981" with the hypothesis that the present state was formed by the merger of a number of erstwhile states, hence the dominance of one city is not visualized. The urban nodes which were capital of native state would make a multinodal pattern in the State Urbanization in Rajasthan has brought out mix-result of modern and traditional traits. Urbanization characteristics show that the state urbanization is struggling to come out of the inherited pattern and process given by the feudal set up.

Rao and Reddy[74] have assessed spatial centrifugal functions in a city region of 13 cities. According to them

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70. Lal, H., "Urban Fringe: An Analysis of the Concept," Uttar Bharati:Bhoogol Patrika, IX,2, 1973, pp.64-70.

71. Srivastava B. & Ramachandran R., "The rural-urban Fringe: A conceptual frame for the study of transformation of the fringe, "Indian Geographical Journal, Vol.XLIX, 1964, pp.1-9.

72. Despande, C.D., "Spatial Dynamics in the Indian Suburban Zone, "Indian Journal of Social Work, Vol. XXXVII, 3&4, 1975-76, pp.305-309.

73. Raj, Bala, "Urbanization in Rajasthan State, 1981", The national Geographical Journal of India, vol.30. pt.1, March 1984, pp.13-20.

74. Rao, D.S. and Reddy N.B.K., "Special Centrifugal function in a city region", The National Geographical Journal of India,Vol.28, 1&2, March-June, 1982, pp.79-87.

urbanization bring spatial problems. Rapid urbanization leads to inconsistant functional zoning with incompatible and intensification of land use. The study shows that nodality index of roadways, railways, airways, and sea port has indicated that the cities with higher nodality index have flourished better. In fact the origin growth and development of a city mainly depends on its site.

S. Banerjee and A. Charkrabarti[75] have studied spatial pattern of socio-economic characteristics in Calcutta Metropolitan district. The paper basically analyses the nature of the spatial pattern of socio-economic development in the surrounding area of Calcutta during 1961, when Calcutta metropolitan district was delimited. These socio-economic characteristics were mainly product of Calcutta's influence as well as the impact of Hooghly industrial belt which was further supported by the routway.

V. Pothana[76] in his study "urban growth in Andhra Pradesh: An Economic Analysis" attempts a macro-economic analysis of the process of urban growth exemplified on the basis of data from Andhra Pradesh for the period 1961-71. The focus of the study is explaining the growth of population in existing towns/cities. He hypothesize that

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75. Banerjee, S. & Chakrabarti, A., "Spatial pattern of Socio-Economic characteristics in Calcutta Metropolitan District", The National Geographical Journal of India, vol.28, Part 3&4, Sept-Dec, 1982, pp.152-159.

76. Pothana, V., "Urban Growth in Andhra Pradesh: An Economic Analysis", Indian Journal of Regional Science, Vol.XII, No.2, 1980, pp.113-120.

one process of urbanization is associated with industrial development, while the other is conditioned by continuous improvement in agricultural production efficiency.

Sharma[78] also did study on degree of urbanization and level of economic development. He says the economic development is an offspring of a composite function of primary, secondary and tertiary section of economic activities. He emphasises the association between the process of urbanisation and increase in secondary and tertiary activities. But urbanization is not divorced from primary activities in its entirity. Dasgupta and Basu[79] have taken only Agricultural yield to correlate with urbanization in a case study of West Bengal. Authors say that the economic political and cultural changes experienced by the cities have also been felt, to a certain extent, in the rural areas. Linkage effects of urbanization on agricultural regionalization by promoting high value and high yielding crops. These in turn increase land productivity.

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78. Sharma, N., "Degree of urbanization and level of Economic Development in Chotanagpur, A Study in nature of relationship" in Indian Journal of Regional Science, vol.IV, No.2, 1972, pp.142-153.

79. Dasgupta, M. and Basu, S., "Urbanization and Agricultural Yields - A case study of West Bengal" Indian Journal of Regional Science, Vol.XVII, No.1, 1985, pp.25-32.

Studies related to urbanization on the study region:

As it has been mentioned earlier that much work has been done on the hill region in the context of urbanization. Aggarwal (1962)[80] discussed urbanization in the U.P. state in the respective situation of vertical movement of towns during 1951-61. There are many studies on the urbanization on U.P. as a whole. Ganguli[81] has studied the urbanization with the help of demographic attributes of U.P.

Bhist and Tiwari[82] have done remarkable study on the history of urbanization of Almora, a town of U.P. hills. This town has specific location for tourism development. Tayagi[83] has studied the process of urbanisation in U.P. hills. She has tried to evaluate how the rugged topography of the region has influenced the overall process of urbanization. This rugged topography of the region forbidden the development of means of transport and communication upto great extent. The main concentration of the towns is found in the Tarai Belt of the region.

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80. Aggarwal, S.K., "Vertical movement of towns and growth of urban population in Uttar Pradesh between 1951-61," Bombay, IIPS, 1968, p.28.

81. Ganguli, D.M., "Some aspects of Urbanization in Uttar Pradesh", Geographical Review of India, 25(2), June 1962, p.107.

82. Bhist, H.S. and Tiwari, M.M.," A short history of urbanization of Almora", Geographical Review of India, vol.42, Sept 1980, pp.245-253.

83. Tyagi, Nutan., "Distribution and Character of Urban Centres of U.P. Himalaya," Urbanization and Regional development (Ref Mandal R.B. & Peters, G.L., Concept Publishing Co. New Delhi,1982 pp.79-94,

Sharma (1982)[84] has done a case study of urbanization in Uttarkhand. The main aim of this paper is to examine the impact of the impulses of socio-economic development in the creation of new-towns and in promoting the growth of indigenous urban places. The main findings of the study is that there has always been a time lag in the diffusion and the effects of the impulses of urbanization in the plains and in the region, secondly in contrast of the pattern of urban growth concentrated in one large city. Substantial contribution has been made by small towns in the urbanization of the region. Both these deviation are related to the physical constraints which have also controlled the distribution pattern comprised of linear belt of towns.

Saxena (1972)[85] has also analysed the changing patterns of demographic structure of Dehradun city. The density and growth direction of urban population is reflected in the core as well as in periphery.

Sharma[86] has made an attempt to visualize the

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84. Sharma K.D., "Endogenous and Exogenous Urbanization: A case study of Uttarakhand (U.P. Himalaya); in Singh, O.P. (ed.) The Himalaya Nature Man and Culture, Rajesh Publication, New Delhi, 1983. pp.272-290.

85. Saxena, P.B., "The Changing Patterns of Demographic Structure of Dehradun City" Deccan Geographer, Vol.X, 2, 1972. pp.51-71.

86. Sharma, J.P., "A note on the Temple Town of Himachal Pradesh: Chamba" The National Geographical Journal of India, Vol.XXIV, 1&2, March-June, 1978. pp. 93-98

"Evolution and Functional Morphology of a temple town of H.P. Chamba". The paper analyses the functional morphology of town in relation to the force and factors of growth. The nodality factor had been equally responsible for the development of the town scape. By virtue of its location at the junction of valley routes, it grew as an important centre of trade and commerce. From the viewpoint of morphology found distinct functional zones viz. the business zone, administrative zone, cultural zone may be identified in the towns.

Chand & Thakur[87] have given general changing scenario of population in Himalayan region. In this they have described the Himachal Pradesh and U.P. hills also, saying that with the economic development of region, urban population is continuously increasing. The small towns and cities of Himalayan region are trying their best to migrating population towards plain areas. Again in other article Chand and Thakur[88] have given the population structure of Himalaya with special reference to Uttara Khand (U.P. hills).

Singh and Singh[89] in the study of "urbanization in U.P.

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87. Chand, R. & Thakur, M.C., "Himalaya: Badalta Jansankhaya Paridrisay", Pahar-1, (ed.) 1982, pp.7-14.

88. Chand, Raghubir & Thakur, M.C., "Himalaya Ka Jansankhayatamak Swaroop", in PAHAR-2, 1983, pp. 1-12.

89. Singh, S.C. and Singh, B.N., "Urbanization in U.P. Himalayas", in Indian Journal of Regional Science, vol.XIX, No.2, 1987, pp.51-55.

Himalayas" tried to measure the linear relationship between urbanization and non-agricultural work; male and female. In the study, female's relation with urbanization has been demarcated from that of males because the influx of females into non-agricultural working population is different in relation to males due to different educational level as well as freedom of mobility. By applying Spear-man's Rank Correlation Coefficient, high and positive correlation (+0.80) is obtained between urbanization and non-agricultural workers and found highly significant. This is to be said that most of the non-agricultural workers are assisting the urban population making out migration from rural areas. In the light of literature survey it has been found that most of the studies have been done on the general characteristic and pattern of the urbanization on international and national level as well as on regional level. Many scholars have tried to relate urbanization with economic development also. On the city system and distribution of cities over surface, many studies have been taken up.

Reviewing the literature available on the study region, it is found that very few study has been done and they have been found inadequate. Specially on Himachal Paradesh very very few studies have been done and even those studies do not reflect the overall pattern of the state.

OBJECTIVES OF THE STUDY

(1) To study the spatial and temporal pattern of demographic and socio-economic profile of urban population for 1971 & 1981.

(2) To measure the different urban process through various measurement of urbanization

   (a) Degree of urbanization

   (b) Tempo of urbanization

   (c) Concentration and Dispersion of the Urban Population

(3) To explain growth in urbanization by the growth in non-agricultural and agricultural variables and identify the dominant explanatory variables.

HYPOTHESIS: In the light of above objective, same hypothesis are also postulated which are given below:-

(i) With the urban growth in urban population growth, there has been significant change in urban profile during 1971-81.

(ii) Urban system of the region is becoming more regular over time.

(iii) With the time, concentration of urban population is decreasing and dispersion of urban population taking place.

(iv) Agriculture and service sector has direct relationship with the growth of urban population.

(v) Growth in rural to urban migration plays a dominant role in the process of urbanization.

CHAPTER II

STUDY AREA, METHODOLOGY AND DATA-BASE

The area chosen for the study comprises U.P. hills and Himachal Pradesh. The choice of the region is guided by the folloiwng facts. The present study region is a backward region and has very low level of economic developmen in all three sectors of economy. The degree of urbanization is very low comparatively to other region of the Indian, 2 which attracts the attention of researches towards the region. Very little research has been done on the region, which is very clear from the literature survey in the preceding chapter.

The main reason selecting the Uttar Pradesh hill district and Himachal Pradesh together has the comparative similarity of both region in many aspects viz. physiography, population structure, urbranization and economic development and other social aspects. Spate has considered Uttar Pradesh hill districts and Himachal Pradesh under one meso region as central Himalaya 3, because of similar characteristic of both.

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1. Mitra A., Op. cit., p.48.
2. Premi M.K., "Urbanization", In India's Population" Monograph-10, United Nations, pp.56-58.
3. Spate O.H.K., "Indian and Pakistan; A General and Regional Geography", Methuen and Co. Ltd., London, 1957, pp.351-354.

Though Jammu-Kashmir also is economically backward and urbanization is also very low, but it has comparitively different political and economic setup.

When we see the similarity in Uttar Pradesh hill district and Himachal Pradesh, both region has got approximately equal area (Himachal Pradesh; 55673 sq.m., U.P. hills; 46277 Sq.Km.) and population (Himachal Pradesh; 4280818 and U.P. hills; 46277700 person). Urbanization lvel is almsot very close. Both, Himachal Pradesh and U.P. hilsl have been experiencing his out migration towards plain areas, which has lowered the sex ratio of the region.4 The nature of process of urbanization is very similar, most of the towns are dominated by service sector. 5 Industryal development is nil except some Tarai districts, viz., Dehradun and Nainital. The nature of origin of the towns is basically throug emergence of military township, i.e., Shimla, Delhousie, Nainital, Lansdown and Moosoorie, etc. Many towns have religous base fo their development like Chamba, Dharamsala, Uttarkashi, Badrinath etc. The number of towns decrease towards interior areas of the region. Tarai and Bhabhar belt of the region has got highest concentration of towns as well as urban population.

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4. Town Directory, Himachal Pradesh, Cencus of India 1981, p.35 and Rawat, A.S. and Sastri, C.S., "Demographic Profile of Kumaon-Garhwal hills in retrospect (1865-1931)", in O.P. Singh (ed), The Himalaya: Nature, Man and Culture Rajesh Publishers, New Delhi, 1983, p.152

5. Mitra A., Op.cit., pp.53-59.

Another major agreement can be given that very little is known about small towns anywhere and this is so especially in countries in the throes of urbanization. Hardly anything is knwn about the economic and social as well as demogrpahic characteristics of small towns, their developmental potential, their relationshi with one another, as well as with rural and larger urban areas.[6] It is far easier to study the comparatively few large cities than the multitude of smaller urban settlements, because of their very size, which produces particulr physical and social traits, big cities have common characteristic.[7] So or main aim of the study is to see the commulative characteristic of the urban centres in the region where more than 80% towns are in categoty of smal towns. This can be considered a good step towards the study of smal towns and region deficient of urban polulation.

STUDY AREA:

The present study is confined to Himachal Pradesh and hill district of Uttar Pradesh. There are eight districts of Uttar Pradesh hills and ten district of Himachal Pradesh.

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6. "Urban-rural difference in Southern Asia: Some Aspects and Methods of Analysis", Report on Regional Seminar, Delhi, 1962, UNESCO Research Centre on Social and Economic Development in Southern Asia, New Delhi, 1964, p.2.

7. Ibid., p.2.

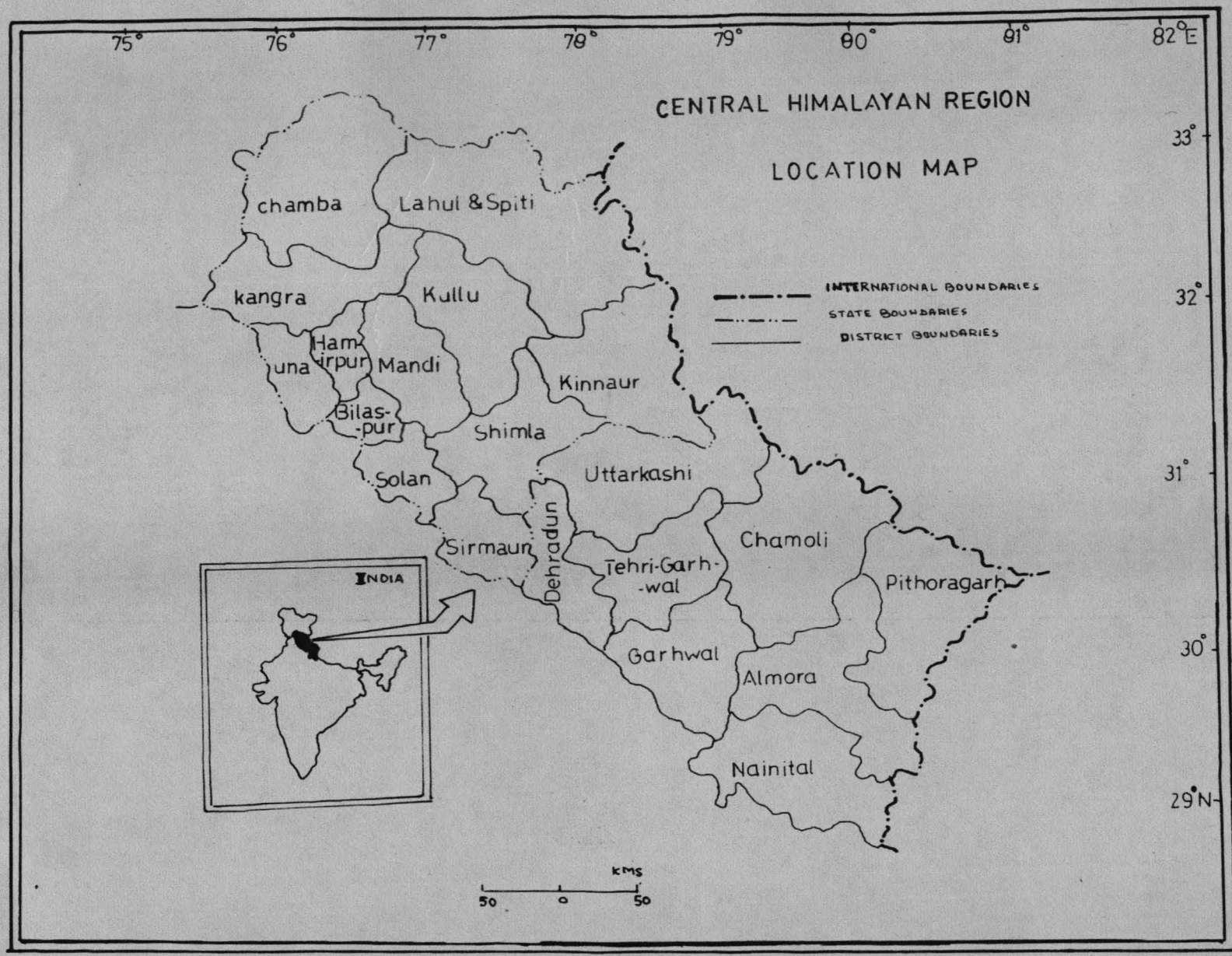
CENTRAL HIMALAYAN REGION
LOCATION MAP
75°
76°
77°
78°
79°
80°
81°
82°E
33°
32°
31°
30°
29°N
chamba
Lahul & Spiti
kangra
Kullu
una
Ham-
irpur
Mandi
Bilas-
-pur
Kinnaur
Shimla
Solan
Uttarkashi
Sirmaur
Dehradun
Tehri-Garh-
-wal
Chamoli
Pithoragarh
Garhwal
Almora
Nainital
INTERNATIONAL BOUNDARIES
STATE BOUNDARIES
DISTRICT BOUNDARIES
INDIA
KMS
50
0
50

FIGURE II·1

TABLE II:1

LIST OF DISTRICTS OF STUDY REGION

Himachal Pradesh	Uttar Pradesh hills
1. Chamba	1. Uttarkashi
2. Kangra	2. Chamoli
3. Hamipur	3. Teri-Garhwal
4. Una	4. Dehra Dun
5. Bilaspur	5. Garhwal
6. Mandi	6. Pithoragarh
7. Kullu	7. Almora
8. Shimla	8. Nainital
9. Solan	
10. Sirman	

This whole region of Himachal Pradesh* and U.P. hil districts[8] together from the Central Himalayan region. The extensionof this region is from 28° 5'N to 33° 13'N latutide and 75° 48'E to 81° E longitude. The area covered →

* In Himachal Pradesh there are 12 districts, but two districts namely Keinaur and Lahul spinti do not have urban population. Therefore these twodistricts are not considered for study.

8. Spate O.H.K., Op.cit., pp.351-554, and Butola B.S., Level of Regional development in central Himalaya, Unpublished Dissertation, CSRD/SSS, JNU, 1986.

by the region is 101950 square kilometre. Separately U.P. hils covers the ara of 46277 square km,[9] and Himachel Pradesh covers the areas of 55673 Sqare Km. This whole central Himalayan regionis surrounded by some other states of India and international boundaries. In the East, it is surrounded by rest of the U.P. State and Nepal, northern boundaries s surounded by Tibet andpart of Jammu & Kashmir State, Western boundaries are touchng the part of J&K and Pubjab. Southern boundary touches the Punjab, part of Uttar Pradesh. The total population of the region, according to the census of India 1981, is 911653 person). The density of populationis found 89.42 person per square kilometre in 1981 Cencus. The lowest densityof the region is found in Lahul & Spiti district (two person per square kilometre) of Himachal Pradesh in 1981 Cencus.

Changes in Jurisdication Boundaries (1971-1981)

During the decade 1971-81, no interstate jurisdictional changes took place in the region. However within the state of Himachal Pradesh the district of Mahasu and Shimla were reconsituted.[12] The name of district Mahasu after

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9. General Population Table, Himachal Pradesh and Uttar Pradesh, Part II-A, Cencfus of India, 1981.

10. Ibid.,

11. Primary Cencus Abstract, Himachal Pradesh, Series 7, Part II-B(i), Cencus of India 1981.

12. General Poulation Tables, Himachal Pradesh, Series 7, Part II-A, Cencus of India, 1981, page-65.

reconsitution was changed to Solan with effect from 1st September 1972. Mahasu district totally lost its entity during 1981 cencus and the areas of ths district were partly transferred to Solan district. Similarly, Una and Hamirpur were carved out from Kangra district in 1972.[13] In this way the number of districts during 1981 cencus increased to 12 as agaisnt 10 in 1971.

In case of Uttar Pradesh hill district, there were no interstate jurisdictional charger during 1971-81 cencus. Only minor and onemajor change has been observed within the state. One village was transferred from Tehri.Garhwal's Devaprayag tehsil to Dehradun Tehsil of Dehradun district.[14] This change is not so effectiv ein the populationof district. Major change is observed in Pithoragarh and Almora district. Champawal Tehsil of Almotra district is added in Pithoragarh district during 1971-81. This transfer of champawat teshil from almora to Pithoragarh, has added 1039.33 Square Kms. area n Pithoragarh district and Almora district has lost same area.[15] There are no other changes have been taken place.

METHODOLOGY:

The study is mainly related to analyze and measure the spatial and temporal variation in the level and tempo of urbanization in the central Himalayan region. The study further attempts to identify the responsible factors for the process of urbanization. To study the characteristic, pattern

and measurement to the urbanization several statistical and Cartographical techniques have been used as follows:

(a) Degree of Urbanization:

As degree of urbanization can be viewed in various ways, four commonly used measures of degree of urbanization have been woked out.

(i) Precentage of Urban Populationto to total population[16] :-

$$PU_t = \frac{U_t}{T_t} \times 100$$

where PU_t is precentage of urban populationto total population at time t, U is the urban population and This population of the district or region.

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13. Ibid., page.66.

14. General Popualtion Tables, Uttar Pradesh, series 22 Part II-A, Cencus of India 1981, p.

15. General Population tabes, Uttar Pradesh, Series 22, Part II-A, Cencus of India 1981.

16. Arriage, E., "Selectd Measures of Urbanization" in Goldstein S. & Sly F. David (eds.), Measurement to Urbanization and projection of urban population, IUSSP Committee on Urbanization and Population Redistribution Brown University, 1975, p. 21.

(ii) Ratio of Urban-Rural Population :-

$$UR^t = \frac{U^t}{R^t}$$

where, UR^t is urban-rural ratio at t time, U^t and R^t are urban and rural population figure respctively at time t.

(iii) Size of Locality of Residence of the Median Inhabitant[18] :

$$MI = Qi + (Qi+1 - Qi)\ \frac{50 - PPi}{PPi+1 - PPi}$$

Where, PPi is the cummulative percentage of population for the locality-size category just under 50 per cent ppi+1 = Cumulative percentage of the next locality size category.

Qi and Qi+1 = Upper limit of the locality size Category i and i+1

(iv) Mean City Size[19] :

$$MC = \frac{\sum_{i=1}^{m} c_i^2}{p}$$

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17. Ibid., p.23.
18. Ibid., pp.25-26.
19. Ibid., p.30.

where MC is Mean City size.

Ci is the population of city i, P s the total urban population of the distict or region, and m is the total number of Urban centres.

(b) Tempo of Urbanization:

Tempo urbanization can also be looked in various ways. Five such commonly used methods have been adopted to calculate the tempo of urbanization.

(i) Annual Change of percentage point[20] :-

$$TA = \frac{1}{n}\left(Pu_{t+n} - Pu_{t}\right)$$

where TA is tempo or ubanization, n is the number of years and PU is the percentage of urban populationto total population at years t and t+n.

(ii) Annual Average rate of exponential change of the percentage urban[21] :

$$TRe = \frac{1}{n} \ln \frac{Pu_{t+n}}{PU_{t}}$$

where TRe is the tempo of urbanization under the assumption of exponential growth in percent urban, n is the number of yeas, PU is the percentage of urban population to total

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20. Ibid., p.37

21. Tbid., p.41

population total populationat yeat t and t+n.

(iii) Urbgan-Rural Growth Diffeential (URGD)[22]

$$W = \frac{1}{n} \ln \frac{UR_{t+n}}{UR_t}$$

Where 'W' is an annual riate of exponential change in the Urban-rural ratio, UR s the Urban-rural ratio at t and t+th years and n is the number of years.

(iv) Change in Median Size of Towns :[23]

$$TMI = \frac{I}{n} \ln \frac{MI_{t+n}}{MI_t}$$

where TMI is the tempo of urbanization under the assumption of exponential growth of median size of town, n is the years of between two time t and t+n, MI is the median size of towns at t and t+n years.

(v) Change in the Mean City poplulation size:[24]

$$TMC = \frac{I}{n} \ln \frac{MC_{t+n}}{MC_t}$$

where TMC is the tempo of urbanization under the

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22. Ibid., p.46.

23. Ibid., p.51.

24. Ibid., p.51.

assumptionof exponential growth of mean city populationsize, n is the year, MC is the mean city populationsize at t and t+n years.

(c) Distribution of Urban Population :

There are several method measuring the distribution of population, here rank-size rule is considered for the distribution pattern of towns in the region. This method is widely used method among the geographer in the study of urbanization.

(i) City Distribution (Rank size rule)[25]

$$C_K = C1.K^{-Z}$$

when applying the least squre principle

$$Z = \frac{\ln \frac{Ci}{Ck} \ldots \ln K}{(\ln k)^2}$$

where Z is constant, C represent the population of city ranked in place, K from the largest to the smallest in size. C1 is the largest city and K is the rank order of towns and cities.

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25. Ibid. Page 58 and Berry, B.T.L., "city size distribution and Economc Development" in Economic Development and Cultural Change, vol. IX. NO.4, 1961" pp. 573-588.

(d) Concentraction and Dispersion of Urban Population:

To see the concentraction and dispersion following method has been considered.

(i) Gini's Coefficient of Concentration[26]

$$G = \frac{1}{100 \times 100} \left| Exi Yi+1 - (Exi+1 yi) \right|$$

Where G is the Gini's Coefficient of Concentration

Xi = per cent urban population in the ith district to total urban populationof the region.

Yi = per cent populationin the ith district to total population of the region.

(ii) Lorenz Curve: Above given Gini's Coefficient of concentration[27] can be shown graphically. The steps invoived in preparation of Lorenz Curve are following:

(A) Firstly arrange the districts according to the ascending order of their percentage of urban population to total population.

(B) Calculate the percentage of the total population each district to total population of the region.

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26. Mohamood Aslam, "Statistical Methods in Geographical Studies," Rajesh Publication, New Delhi, 1977, pp.112-114.

27. Ibid., pp.109-110.

(C) Similarly, calculate the percentage of urban population of each district to total urban population of the region.

(D) Find out the commulative percentage of obtained in step (B) and (C), where chummulative percentage of each column will be 100,000 percent.

(E) Plot each of the value of urban population on X-axis and total pupulation on Y-axis and join all the points from startig to end. It will givea curve shape, which will show the concentration of urban population relative to total population, away from the line of equal distribution, which runs diagonal inthe graph.

(iii) Index of Location Quotient[28]

$$LQi = \frac{Pij/Pi}{Pj/p}$$

where Pij = number of urban population in jth

(= 1,2,.....m)

category of district i (=1,2,.....m)

$Pi = \sum_{j=1}^{m} Pij$ = total populationin all the districts.

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28. OP.cit. pp.101-107.

$P_j = \sum_{m}$ Pij = Sum of urban population in the category j in all the n disticts i.e., urban Population of the region under category j

(vi) The Primary Index[29] : while considering the four largest cities, we use the formula:

$$PI_4 = \frac{C_i}{\sum_{K=2}^{4} C_K}$$

where Ci is the poulation of largest city and C_k for K=2,3 and 4 represents the population of the second, third and fourth ranked cities respectively.

When we consider 11 largest citie then Primary Index is:

$$PI_{11} = \frac{2Ci}{\sum_{k=2}^{11} C_K}$$

Again Ci is the populationof largest city and Ck for K=2,3, 4.....11 represents the sum of urban population of cities from 2,3,4.....11th rank.

(E) Multiple Correlation and stepwise Regression:-

For correlation coefficient following method has been used[30]

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29. Arriaga, E., Op. cit, pp.63-65.

30. Mohmood Aslam, op.cit., p.53.

$$r_{xy} = \frac{\Sigma xy - \frac{\Sigma x \Sigma y}{N}}{\sqrt{\Sigma x^2 - \frac{(\Sigma x)^2}{N}} \sqrt{\Sigma Y^2 - \frac{(\Sigma Y)^2}{N}}}$$

where r_{xy} = correlation coefficient between X and Y variables.

X and Y are the variables for which correlation has been found; N is number of observation.

Significiance test of correlation coefficient has been worked out by student 't' distribution test with (n-2) degree of freedom.

$$t = r \sqrt{\frac{n-2}{1-r^2}}$$

where r = corelation of coefficient

n = number of observation

In order to see the influence of explanatory variables on the growth of urban pupulation and urban rural growth differential, the statistical technique of multiple linear regression has been used. The technique gives the overall explanaory power of the regression model (R^2), it gives the rate of change in dependent variable with he respect to individual variable (regression Coefficient). Multiple linear

it are available in many standard book on econometric.p31

In the use of multiple linear regression technique, the problem of multicollinearity arises.[32] In the general linear model, the explanatory variable should be independent of each other. The reason for this assumption is that is some or all independent variables are perfectly correlated the matrix S' can not be inverted or in such case determinant of X'x = 0. A less extrme but still very serios ase arises when some or all of the explanatory variables are highly but not perfectly correlatd.

Here in case of our study, to avoid the multicollinearity among the independent variable and its consequences, two or more of the variable are intercorrelated hghly, the safest solution adopted is to remove one or few f them from the regression analysis.

Except, the techniques given in preceding pages, many mnor techniques has been used to study the basic characteristic of urban population are following:

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31. Johnston, J., "Economic Methods", McGraw Hill, New Delhi, 1960, pp.121-169 and Hoel, P.G., "Introduction to Mathematical Statistics", John Willey and Sons, 1954 pp. 228-240.

32. Johnston J. ibid., pp.225-249.

(1) Dependency Ratio[33] :

$$DR = \frac{\text{Population under 15 years + Population 60 years and above}}{\text{Population aged 15-59 years}} \times 100$$

(2) Work participation rate[34] :

$$WPR = \frac{\text{Total number of workers}}{\text{Total Population}} \times 100$$

(3) Child-Women Ratio[35] :-

$$CWR = \frac{\text{Population of Children under the age group of 0-4}}{\text{Total population of women in age agroup of 15-49.}}$$

(4) Effective Literary Rate[36] :

$$ELR = \frac{\text{Total literate population}}{\text{Total poplation, excluding 0-4 population.}}$$

Many other minor calculations have been done, which is commonly used by social scientist, therefore there is no need to discuss those method.

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33. Premi M.K., "An introduction to social demography," Vikas Publishing House Pvt Ltd., 1983, p.45.

34. Ibid, p.56.

35. Misra, D. Bhaskar, "An Introduction to te Study of Population", South Asian Publishers Pvt Ltd. New Delhi, 1980, pp.175-178,

The present study is based on secondary data obtainng from different publication of the Government of India and the State Governments. Before talking about the source of data, one should discuss about the rationals for he choice of variable aken for the study.

For the study of pattern and characteristic and measurement of te urbanization, the variables related to urban population have been collected. In many studies it has been found that urbanization and economic development is interrelated and interdependent. Economic development is related with sectoral distribution of the work force.[37] Directly secondary and tertiary sectors are related with the process of urbanization, but urbanization is not divorce from primary sector in its entirity.[38] It has been said that one canfind the urban attributes in rual areas and rural attributes in urban area. "Urbanixation therefore involves the transformationof the rural attributes to urban one."[39]

In the lightof above statements and keeping in view of the low levels of economic development of the study region,

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37. Kuznets S., Eldridge, H.T.., & Thomas D.S., "Poulation Redistribution and Economic Growth, United States, 1870-1950," American Philosophical society, Philadelphia 1964, p.23.

38. Sharma, N., op.cit., p.143.

39. Prakashrao, VLS, op.cit. p.13.

consideration has been given to all the three sectors of economy of the region to study the process of the urbanization.

For explainng the process of urbanization the variables from the tree sectors of economy have been taken along with other variable related with economic, demographic and social characteristic of the districts. These variable have been chosen because these variables are directly or indirectly related with the process of urbanization.

For the study of process of urbanization dependent and explanatory variable has been taken yp, are given below.

(1) Dependent variable

a) Urban population growth

b) Urban rural population growth differential

Above given dependent variables have been taken from cenus of India.[40]

(2) Explanatory Variables

(i) Primary sector

(a) percentage growth in gross area Irrigated

(b) percentage grwoth in Gross area sown

---

40 General Poplation Tables, series-22, Part II-A, Uttar Pradesh, and Genral Population Tables, series - 7, Part II-A, Himachal Pradesh, Cencus of India, 1981 & 1971.

(c) Percentage growth in crop intensity.

(d) Percentage growth in Area udner fruit & Vegetables.

(e) Percentage growth in labour productivity

(f) Percentage growth in yield er hectar.

(g) Percentage growth of workers in Agriculture.

(h) Percentage growth in workers in livestock, foresty etc.

(ii) Secondary Sector

(i) Percentage growth of workers in Mining and Quarrying

(j) Percentage growth of workers in house hold & other than household industry

(k) Percentage growth in number of non-agricultural enterprises

(l) Percentage growth in number of agriculturual enterprises

(iii) Tertiary Sector

(m) Percentage growth of workers in trade & commerce

(n) Percentage growth of workers in constuction

(o) Percentage growth of workers in the transport, storage and communication

(p) Percentage growth of workers in other services

The variables related to agricultural production and

area has been taken from different publication of state government and Indian government.[41]

Other variable related to workers in nine industrial category has been taken from cencus of India.[12]

(iv) other variables

(q) Percentage growth in Male literacy

(r) Percentage grwoth in rural to urban migration

(s) Percentage growth in number of electrified villages.

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41. a) Statistical Abstract, U.P. 1970-71 & 1980-81, Economics & Statistics Division, State Planning Institute, U.P. Lucknow.

b) Statistical Abstract of Himachal Pradesh, 1980-81 & 1970-71, Directorate of Economics & Statistics, Himachal Pradesh, Shimla, Govt. of H.P.

c) Season and Crop Report, Himachal Pradesh and Uttar Pradesh, 1970-71 & 1980-81, Directorate of Economics and Statistics, Minstry of Agriculture, Government of India.

d) Agricultural Statistics of India, Volume II, 1970-71 & 1980-81, Directorate of Economcs and Statistics, Ministry of Agriculture, Government of India.

42. a) General Economic Tables, Series-22, Part III A&B, Uttar Pradesh, Cencus of India, 1971 & 1981.

b) General Economic Tables, Series-7, Part-III A&B, Himachal Pradesh, Cencus of India, 1971 & 81.

Above given variable have been taken from different volume of Cencus of India.[43]

In this chapter, "Pattern and characteristic of urban population Demographic[44], economic and social variables have been takenfrom vairous voume of cencus of India.[45] These same demographic variables have been used for the measurement of urbanization.

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43. a) Social & Cultural Tables, Series-23, Part IV-A. Uttar Pradesh, Cencus of India, 1971 & 81

b) Social & Cultural tables, series-7, Part IV-A, Himjachal Pradesh, Cencus of India, 1970-71.

c) Migration Tables, series-22, Part V-A&B, Uttar Pradesh, Cencus of India, 1971 & 81.

d) Migration Tables, series-22, Part V-A&B, Uttar Pradesh, Cencus of India, 1971 & 81.

e) Analytical Report and Administrative Statistics & Cencus tables, series-22, District Cencus handbook, Part X-C, Uttar Pradesh, Cencus of India, 1971 & 81.

f) Full Count Cencus tables on village Directory & Primary Cencus Abstracts & Departmental Statistics, District Cencus Handbook, series-7, Part X-2, Himachal Pradesh, Cencus of India, 1971 & 81.

44. a) General Population Tables, op.cit.

b) Primary Cencus Abstract, series 22, Part II-B, Uttar Pradesh, Cencus of India, 1971 & 81.

c) Primary Cencus Abstract, series-7, Part II-B, Himachal Pradesh, cencus of India 1971 & 81.

d) Migration tables, op.cit

e) District Hand books, op.cit.

f) Town Directory, Himachal Pradesh & Uttar Pradesh Cencus of India, 1971 & 81.

45. General Economic Tables, op.cit.,
46. Social & Cultural Tables op.cit.,

Chapter III

Pattern and Characteristic of Urban Population

Heterogenity of geographical environment in Himalayan region has been reflected in patterning of cultural landscape through human adaption and resources utilization[1]. There are variations in distribution of population on unit areas as well as in demographic, and socio-economic characteristics over space. There is "strong differentiation and marked social individuality from one district to other and from one valley to the next, despite its prevailing similarity of local geographical condition .....A mountain region gets its population from diverse sources"[2].

The percentage of urban population of the region was only 11.15% in 1971 and 13.42% in 1981 census, which is below the national average in both censuses. This urban population is most unevenly distributed within the districts and region as well. The imbalance in urban

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1. K. Kumar., "Population structure of U.P. Himalay" in O.P. sigh (ed.); The Himalaya; Mature, Man and culture" Rajesh Publication, 1983, New Delhi.P.117

2. Semple, E.C., (1947), "Influences of Geographical Environment," New York, P. 596.

development is primarily accounted by geographical environment in which accessibility and production and consumption pattern are important factors and only this factors make the urban population of this region quite different from that of homogeneous and productive areas.[3]

Present chapter deals with the pattern and characteristics of urban population in the region. The chapter has been divided into three part namely Demographic, Economic and Social.

A. Demographic Characteristic of urban Population

(i) Urban Population as Percentage to total population

According to 1981 census, 13.42% population is urbanised in the region. Percentage of urban population in 1971 was 11.15% to total population of the region. The district wise proportion of urban population given in the table III.1 shows that only three districts namely Dehradun Nainital of W.P. hills and Shimla of Himachal Pradesh has the higher urban percentage to total population thanregion's average urban percentage (13.42%).

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3. K. Kumar, op.cit., p-140.

Table No. III.1

Percent Urban to total population

(1971 & 1981)

Districts	Years 1971	1981
Chamba	7.50	6.84
Kangra	4.32	4.94
Hamirpur	1.38	4.98
Una	3.94	7.72
Bilaspur	4.88	4.68
Mandi	9.36	7.33
Kullu	5.59	7.09
Shimla	14.59	15.69
Solan	10.09	10.76
Sirmaur	8.45	8.74
Uttarkashi	4.07	6.95
Chamoli	4.17	8.01
Tehri-Garhwal	2.65	4.13
Dehradun	47.08	48.86
Garhwal	6.30	9.82
Pithoragarh	3.81	5.52
Almora	5.21	6.82
Nainital	22.13	27.49

Source : General population table, cencus of India 1971 & 1981

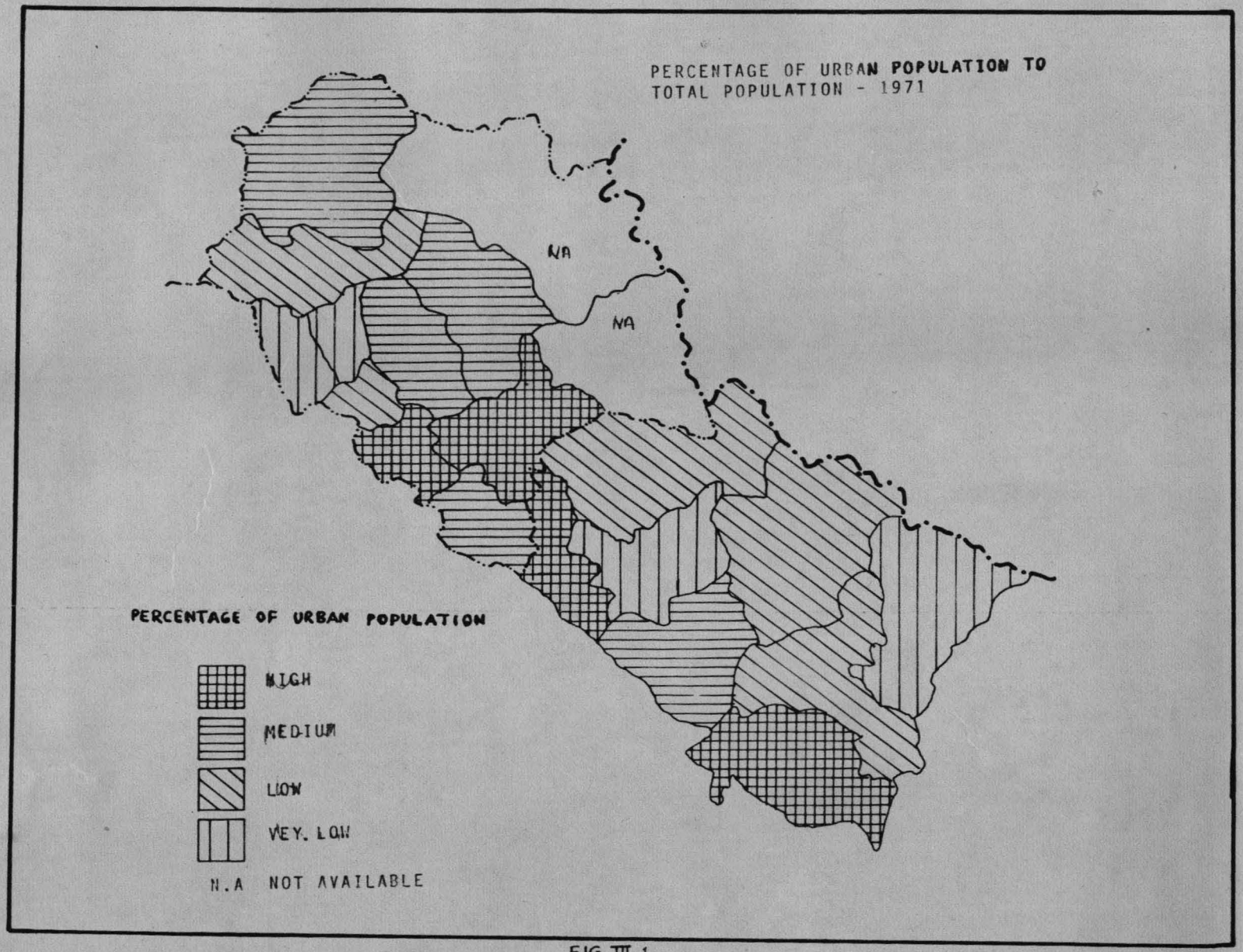
PERCENTAGE OF URBAN POPULATION TO
TOTAL POPULATION - 1971
NA
NA
PERCENTAGE OF URBAN POPULATION
HIGH
MEDIUM
LOW
VEY. LOW
N.A NOT AVAILABLE

FIG.III.1

Among these three districts Dehradun and Nainital have much higher percentage of urban population. Shimla has just above the average : There are 15 districts. Below average among these district lowest percentage of urban population is found in Tehri-Garhwal followed by Kangra, Hamirpur, Bilaspur, Pithoragarh, Almore, Uttarkashi and Chamba. Other districts namely Una, Mandi, Solan, Sirmam, Chamoli, Garhwal, Almora have percentage of urban population between 7.0% to 11% to total population.

The main question arises why few districts have high percentage of urbanisation and other district has very low. If we examine the causes of this variation than we find there are some factors which affects this phenomena. In Himachal Pradesh Shimla has highest percentage of Urban Population, it is one of the factor is that a capital city and second factor is that it is oldest city in Himachal Preadesh. In colonial period British had developed this city as a summer resort and as well as a capital for summer season. Which has given a continuous incentive for the growth of this town.

In U.P. Hills, Dehradun and Nainital has highest Percentage, even in the region. These two cities also developed during colonial period. Second important factor is, these two districts have more than 50% of its areas

as a plain, which has very rich agriculture. This such a good agriculture base is a pre-requistic for urban grwoth. Third important factor may be to the major cities of plain area. These towns have grown as a service centre for whole hill region for the last several decades.

On the other hand, low level of urbanisation in most of the district of the region may be due to physical conditions of the region. The hilly terrian does not permit easy transport and communication. Many towns of these districts have come up after independence. So they do not have long history of urbanization. Agricultural development as well as industrial development is very low. This under development does not permit a vast urban population in the interior region.

In 1971, the percentage of urban population to total population as an average for whole region is found to be 11.15%. The situation of different districts were almost same, which has been observed in 1981. These districts namely Dehradun, Nainital and Shimla were above average. Rest of district were below to average. In some district percentage of urban population was higher than 1981 census. These districts are Chamba [6.84 (1981), 7.50(1971)], Bilaspur [4.88(1971); 4.68(1981)] and Mandi District [9.36 (1971); 7.33 (1981)]. In these district

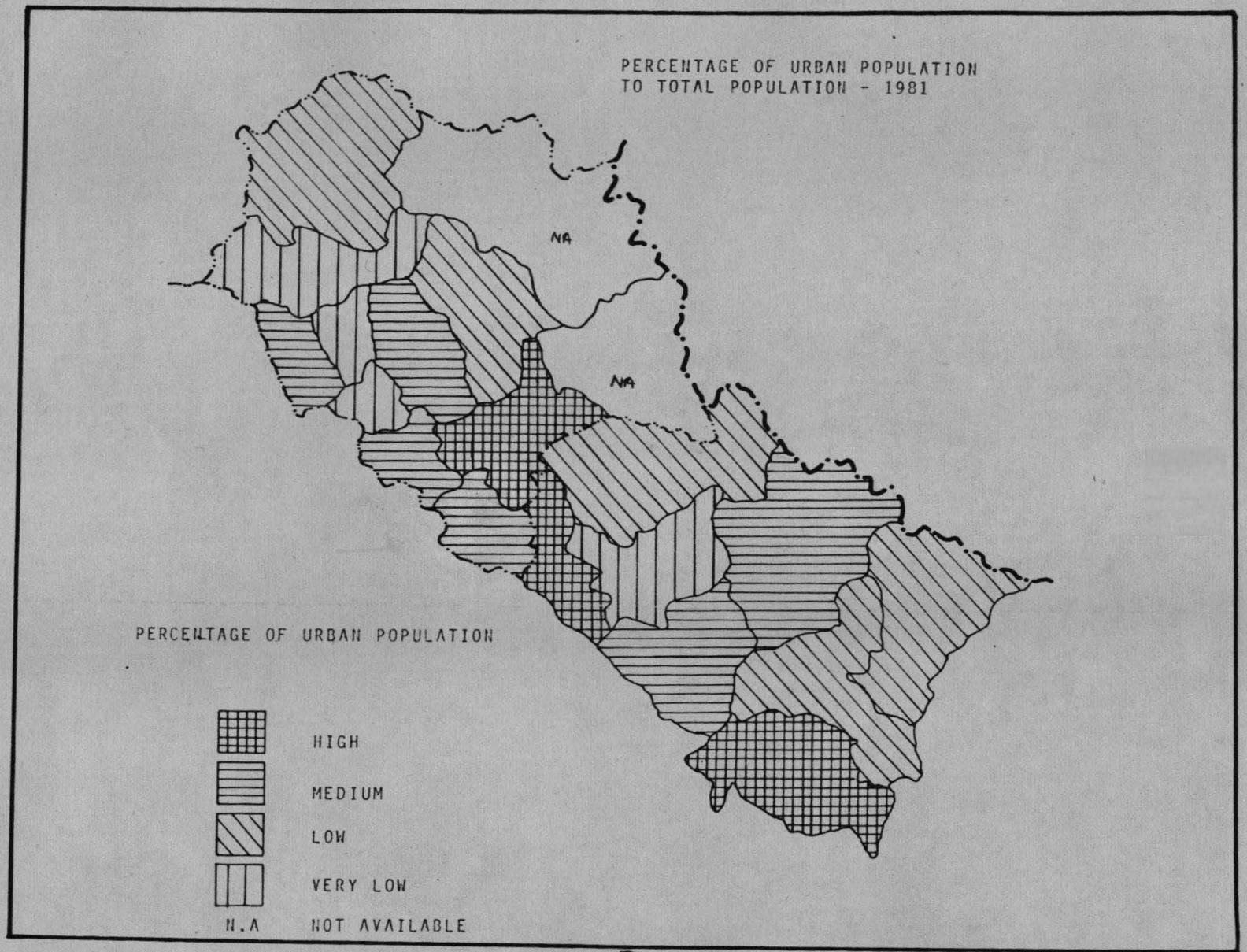
PERCENTAGE OF URBAN POPULATION
TO TOTAL POPULATION - 1981
NA
NA
PERCENTAGE OF URBAN POPULATION
HIGH
MEDIUM
LOW
VERY LOW
N.A
NOT AVAILABLE

FIG. III. 2

total urban population has increased, but percentage of urban population has decreased except Mandi district. It is because of completion of Project work in Pandoh and Sundarnagar towns. One reason for decrease in percent urban in district Bilaspur and Chamba can be given, is that, rural growth rate was very high than urban growth.

In two district Hamirpur and Una, the change in percent urban has been observed very high. In Hamirpur it was about three times, from 1.38% to 4.98%. It was because two new towns have come up in 1981, in which about 20 village fully and 3 village partly included in towns, which increased the urban percent in 1981 than 1971 census. Same thing happened in Una District. The spurt in the urban population of Un district is not only due to the expansion of industrial and trade and commercial activities but is also due to the conversion of certain villages in the urban areas.[4]

In Chamoli, Pithoragarh district also, percent urban has increased because of inclusion of number of new towns in 1981 census, where only one or two towns were in 1971 census in the district.

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4. Town Directory, series 7, Part-A, Himachal Pradesh. Census of India, 1981, page. 35.

(ii) Distribution of Urban Population

The lower level of urbanisation of the region has another spatial dimension also. To investigate the spatial pattern of urban population of each district has been calculated in the percentage of total urban population of the region given in table III.2 for 1971 and 1981 census year. The distribution of urban population has been found to be very unequal over the space. According to 1971 census highest proportion of total urban population of region is found in the Dehradun District (33.84%) followed by Nainital (21.77), Shimla (7.63%) and Mandi (6.00%), while lowest proportion has been found in the district Hamirpur (0.46%). Among Uttar Pradesh hill district Uttarkashi has lowest proportion of urban population to total urban population of the region, these districts are share of urban population to total urban population of region, whereas many district has experienced loss in percentage share of urban population to total urban population of the region.

The districts, which have improved the percentage share of urban population are Nainital, Pithoragarh, Garhwal, Tehri-Garhwal, Chamoli, Uttarkashi, Kullu, Un and Hamirpur. The districts, which have

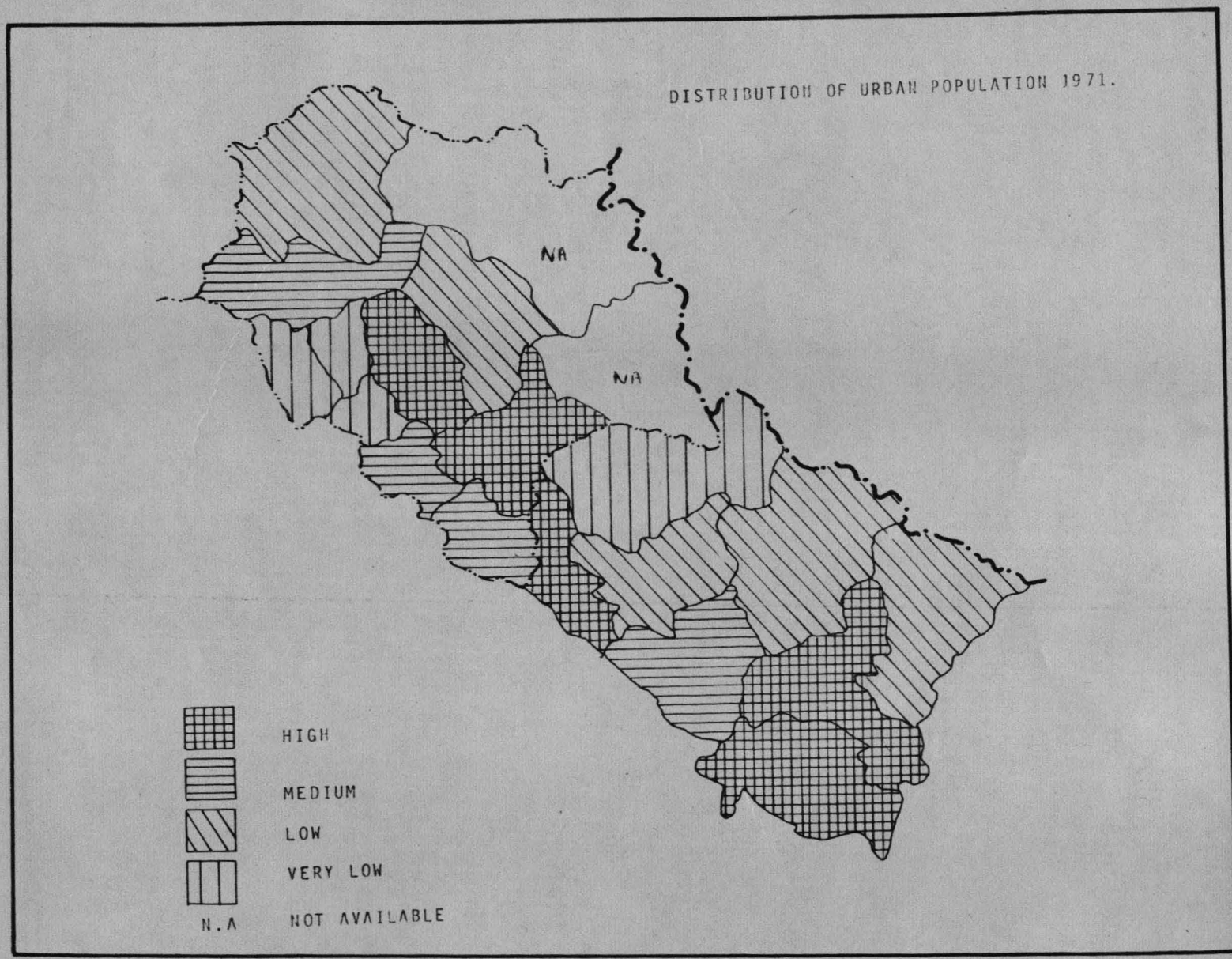
DISTRIBUTION OF URBAN POPULATION 1971.
NA
NA
HIGH
MEDIUM
LOW
VERY LOW
N.A
NOT AVAILABLE

FIG. III. 3

Table No. III.2

Distribution of Urban population (1971 & 1981)

(% urban population to total urban population in the region)

Districts	1971	1981
Chamba	2.35	1.76
Kangra	4.31	4.04
Hamirpur	0.46	1.31
Una	1.29	2.02
Bilaspur	1.18	0.96
Mandi	6.00	3.90
Kullu	1.34	1.40
Shimla	7.63	6.62
Solan	2.98	2.69
Sirmaur	2.58	2.21
Uttarkashi	0.75	1.10
Chamoli	1.52	2.41
Tehri-Garhwal	1.31	1.70
Dehradun	33.84	30.73
Garhwal	4.34	5.17
Pithoragarh	1.49	2.23
Almora	4.87	3.93
Nainital	21.77	25.80
	100	100

Source : General population table, cencus of India, 1971 & 1981

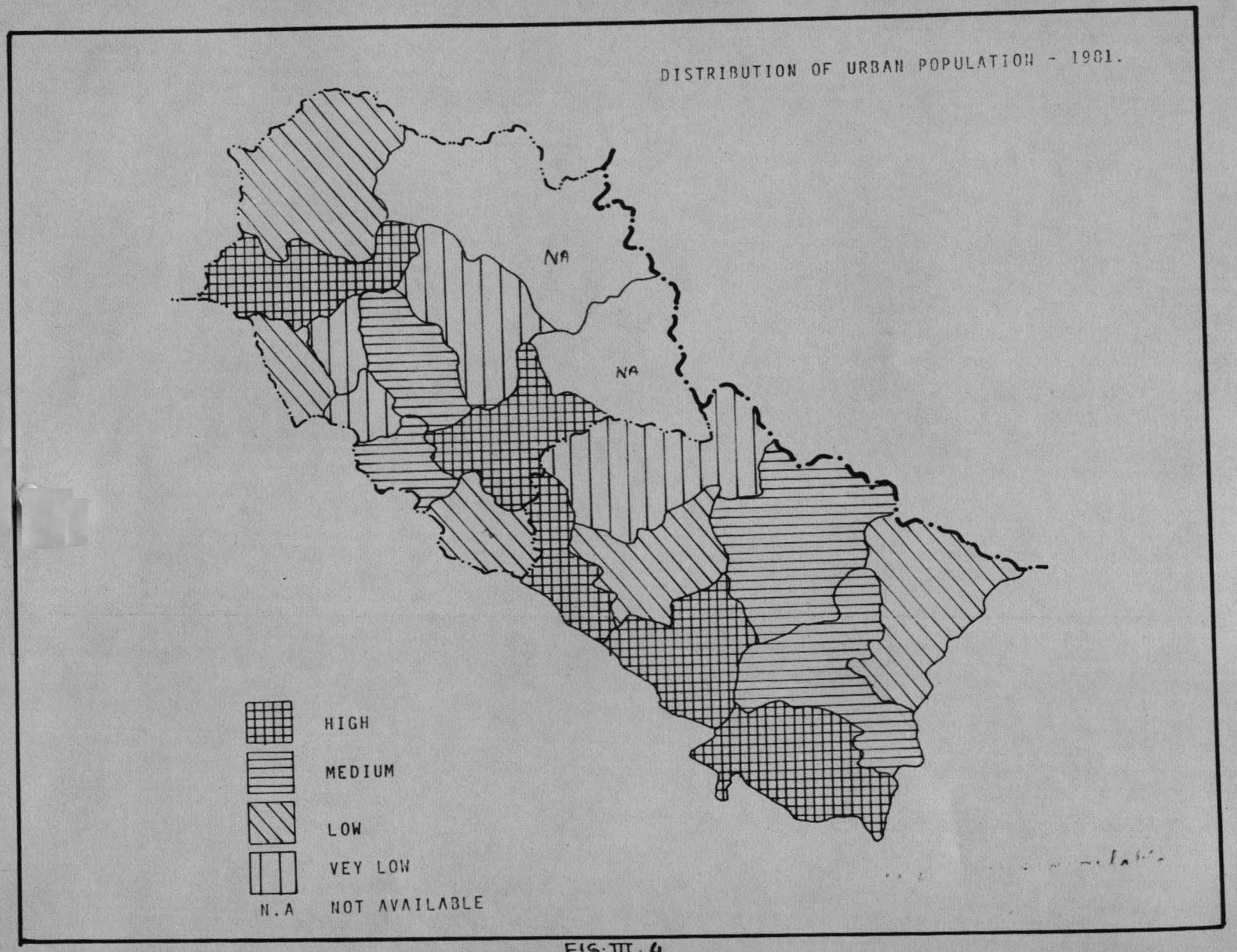
DISTRIBUTION OF URBAN POPULATION - 1981.
NA
NA
HIGH
MEDIUM
LOW
VEY LOW
N.A
NOT AVAILABLE

FIG. III. 4

experienced loss in percentage share of urban population are Dehradun, Almora, Sirmam, Solan, Shimla, Mandi, Kangra and Chamba. This ups and downs are because of higher growth of urban population in the districts which have gained the percent share of Urban population in the region. The district which have experienced loss in share of urban population has low growth of urban population.

If we take the U.P. hills and Himachal Pradesh, than in 1981 census about 70% urban population of the region has been found in U.P. hill district and rest in Himachal Pradesh. In 1971 census U.P. hill district had 73% of urban population of the region and rest 27% were found in Himachal Pradesh. So in 1981, the share of urban population of region has been increased in Himachal Pradesh Tehri-Garhwal (1.31%), Chamoli (1.52%) and Pithoragarh (1.49%). In the Himachal Pradesh, after the Hamirpur, Una (1.29%) Bilaspur (1.18%), Kullu (1.34%) and Chamba (2.35%) has low proportion of urban population to total urban population of the region.

In 1981 census, again Dehradun district has highest proportion of urban population to total urban population of the region, accounted 30.73%, Dehradun district is followed by Nainital (25.80%), Shimla (6.62%) Garhwal (5.17%) nd Kangra district (4.04%). Lowest proportion of

urban population of the region is found in the district Bilaspur (0.96%). Other districts where low proportion has been found in Uttarkashi (1.10%) Hamirpur (1.31%), Tehri-Garhwal (1.70%), Chamba (1.76%) Kullu (1.40%) and Una (2.02%). More than 60% of urban population is concentrated in the three districts of the region namely Dehradun, Nainital and Shimla. This shows very unequal distribution of urban population among the districts of the region.

Examining the charges in distribution of urban population over space during the 1971 to 1981, it has been found that many district has improved their percentage.

(iii) Population distribution in Different size class of towns.

This distribution of urban population in different size class of town shows that whether the urban process is going in balance or not. Because in most of the situation the most of urban population concentrate in class I cities. For example, in 1971 census, country's 52.4% urban population was concentrated in class I cities[5] and, this percentage

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5. Bose, Ashish,- "Urbanisation in India", A Demographic Perspective", in Goldstein & Sly (eds); pattern of Urbanisation : Comparative country studies vol.I Ording Edition, Dohhain (Belgium) 1975, page - 295.

Table No. III.3

Percent distrubution of urban population in different size class of town - 1971

District/State	Class I	Class II	Class III	Class IV	Class V	Class VI
Chamba	-	-	-	62.50	-	37.50
Kangra	-	-	-	31.58	40.39	28.03
Hamirpur	-	-	-	-	-	100
Una	-	-	-	-	61.21	38.79
Bilaspur	-	-	-	-	74.10	25.90
Mandi	-	-	44.19	34.95	12.55	8.31
Kullu	-	-	-	-	83.27	16.73
Shimla	-	90.37	-	-	-	9.63
Solan	-	-	-	40.13	-	59.87
Sirmaur	-	-	-	77.32	-	22.68
Uttarkashi	-	-	-	-	100.0	-
Chamoli	-	-	-	-	100.0	-
Tehri-Garhwal	-	-	-	-	52.08	47.92
Dehradun	63.19	-	12.80	18.10	5.01	0.9
Garhwal	-	-	-	33.05	60.43	6.52
Pithoragarh	-	-	-	100	-	-
Almora	-	-	-	85.88	-	14.12
Nainital	-	29.85	47.24	17.54	3.43	1.93
Total	20.87	13.52	17.29	25.27	13.37	9.68
U.P. Hills	30.06	9.45	21.04	24.50	11.58	3.36
Himachal Pradesh	-	22.76	8.76	27.03	17.42	24.03

Source : Town Directory, cencus of India, 1971

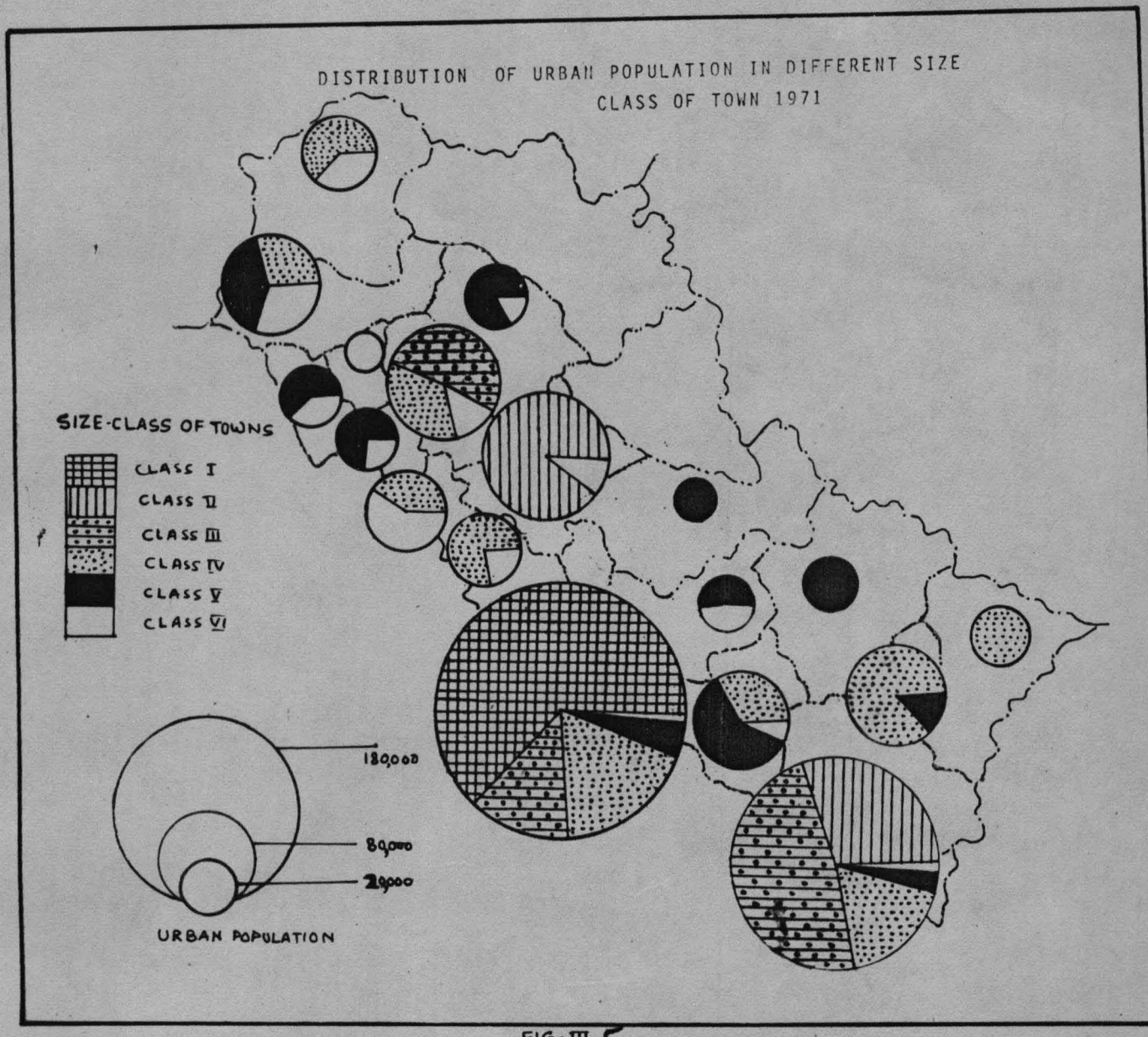
DISTRIBUTION OF URBAN POPULATION IN DIFFERENT SIZE CLASS OF TOWN 1971
SIZE-CLASS OF TOWNS
CLASS I
CLASS II
CLASS III
CLASS IV
CLASS V
CLASS VI
180,000
80,000
20,000
URBAN POPULATION

FIG. III. 5

has increased in 1981, claiming about more than 55%.[6] But this imbalance is not prevailing in our study region. There is a very Balanced Distribution of urban population in all class town size.

Evaluating Table III.3 situation of 1971 census in the region, there was only one class I towns namely Dehradun, and it had about 20.87% of total urban population. In the category of class II towns there were only two towns one in H.P and another in U.P., namely Shimla and Kashipur, respectively. These two towns were making the 13.52% urban population to total urban population in class II town category. In the category of class III towns, there are four five towns in the region constituating the 17.29% urban population to region's total urban population. The highest percentatge of urban population to total urban of region is found in class IV category, constituating the 25.27%. Here, the number of towns is found. Fourteen, maximum number of towns were in Dehradun (3 towns) followed by Nainital (2) and Almora (2). In the category of Class V towns, the urban population have 13.37% to total urban population of the region. Here the number of towns were seventeen, second highest after class VI towns. The smallest category of towns class VI, had highest no. of towns , and had lowest urban population percentage to total urban population, because many

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6. Primary census Abstract, census of India, 1981.

towns have population in hundreds only. The category constitutes the 9.68% of urban population which is lowest in all classes of towns. In case of H.P. this category constitutes about 24.05% of total urban population in the state, and in case of U.P. Hill it has only 3.36%, which is very less, it is because here no. of class VI towns are very low compared to Himachal Pradesh where it is highest. In case of U.P. Hills only Dehradun district have 30.06% urban population to total U.P. hill urban populations, followed by class IV (24.50%), Class III (21.04%) and class V (11.58%), Class II and VI has the urban population 9.45% and 3.36% respectively.

If we see the district wise pattern which is very clear by above given figure III.3, shows that only one district Dehradun has class I city. Only two districts are having class II towns (Shimla & Nainital). Mandi, Dehradun and Nainital have Class III towns, rest do not have any class III urban population. Uttarkashi and Chamoli district have only Class V towns. Table shows that there is no district which has all the category towns. This pattern of class towns size shows a very different nature than to other regions of plain area. This can be considered as a Unique Pattern of Himalayan region.

Table No. III.4

Percent distribution of urban population in different size class of towns - 1981

Districts/State	Class I	Class II	Class III	Class IV	Class V	Class VI
Chamba	-	-	-	64.62	-	35.38
Kangra	-	-	-	29.67	45.25	25.08
Hamirpur	-	-	-	-	55.55	44.45
Una	-	-	-	-	37.37	62.63
Bilaspur	-	-	-	-	69.60	30.40
Mandi	-	-	43.97	39.58	10.65	5.79
Kullu	-	-	-	70.13	-	29.87
Shimla	-	88.06	-	-	-	11.94
Solan	-	-	-	40.24	17.31	42.45
Sirmaur	-	-	74.87	-	21.62	3.51
Uttarkashi	-	-	-	75.67	-	24.33
Chamoli	-	-	-	-	62.79	37.21
Tehri-Garhwal	-	-	-	72.26	-	27.74
Dehradun	56.93	-	18.77	14.93	8.10	1.27
Garhwal	-	-	-	73.23	16.24	10.53
Pithoragarh	-	-	-	65.35	-	34.65
Almora	-	-	45.93	36.72	-	17.45
Nainital	-	41.31	34.16	7.99	10.65	5.88
Total	18.10	16.40	19.95	20.87	12.86	11.81
U.P Hills	24.72	14.47	22.66	20.43	10.32	7.40
Himachal Pradesh	-	21.66	12.54	22.10	19.83	23.90

Source : Town Directory, cencus of India, 1971 & 1981

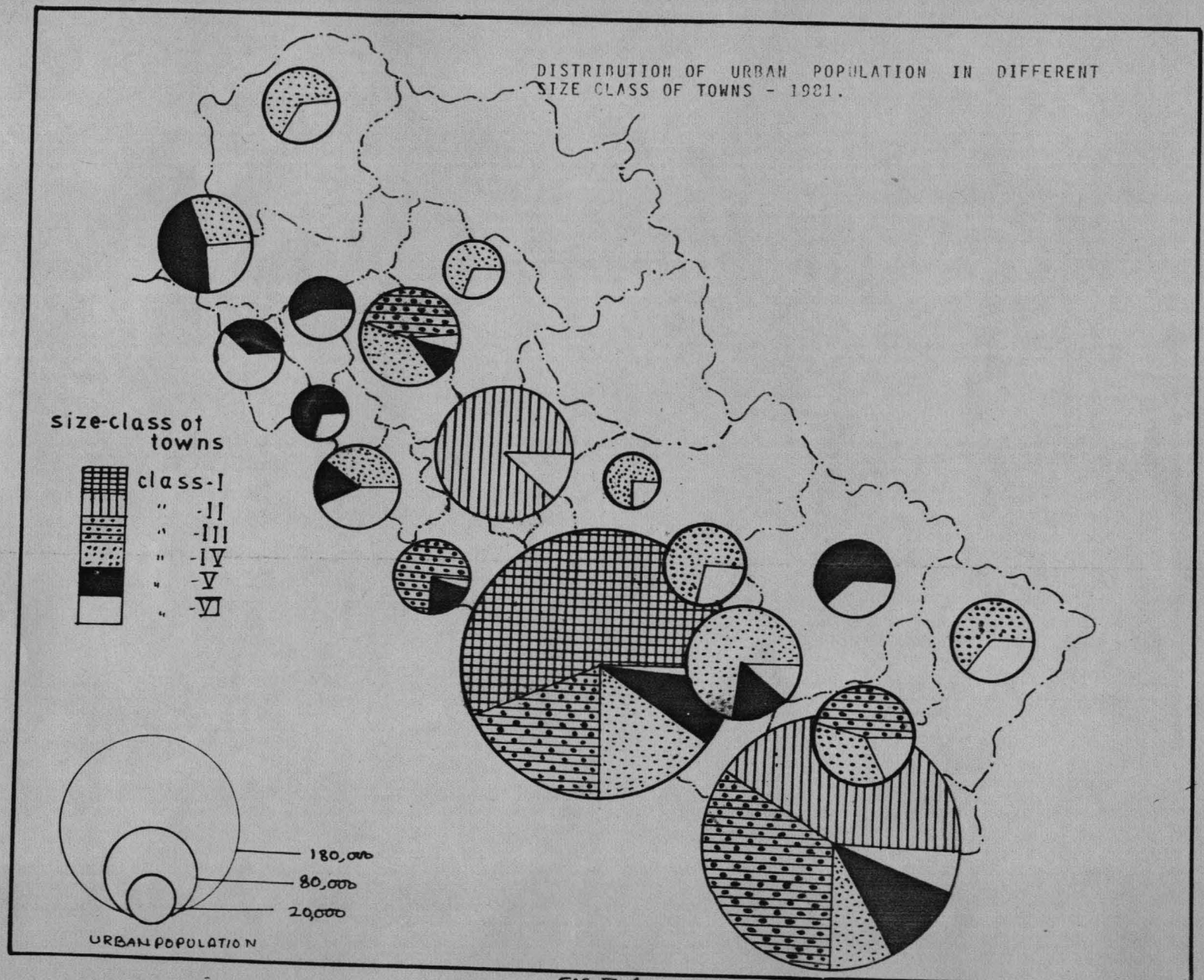
DISTRIBUTION OF URBAN POPULATION IN DIFFERENT SIZE CLASS OF TOWNS - 1981.
size-class of towns
class-I
" -II
" -III
" -IV
" -V
" -VI
180,000
80,000
20,000
URBAN POPULATION

FIG. III. 6

Table III.4 shows that in 1981, the proportion of Urban population in class I cities has decreased about 3% than that of 1971, and proportion has increased in Class VI category from 9.68% to 11.81% in 1981. In 1981 census the distribution of urban population in different category of towns become much balanced than that of 1971. There was an increase in the proportion of urban population in Class I, Class II, Class III and Class V towns and also an increase in class IV and Class VI category of towns. Examining the situation of U.P. hills and Himachal Pradesh separately the situation of distribution of urban population has become slightly more balanced than that of 1971.

In 1981 census, there are many towns, appeared first time in census of India. These towns were mostly class VI and Class V type, which have improved the proportion of urban population in class V and VI categories. But still there is not even a single district which have all type of class towns in 1981. Dehradun does not have class II town and Nainital does not have class I town. Same situation pervails in every district; they have certain class towns, and some class towns are missing.

Table III.5 shows that the growth pattern in urban population and proportion of urban population to total urban population in each class towns, we find that during

Table No. III.5

Percent growth in the urban population and proportion of urban population to total urban population of the region in different class-size towns 1971-81

Region/sub region	Class I		Class II		Class III		Class IV		Class V		Class VI	
	1	2	1	2	1	2	1	2	1	2	1	2
Central Himalayan region	321179	-13.27	85.62	21.30	76.68	15.38	26.46	-17.41	47.35	-3.81	86.87	22.00
U.P. Hills	32.79	-17.76	147.25	53.12	73.90	7.70	34.71	-16.61	43,90	-10.88	255.70	120.24
Himachal Pradesh	-	-	27.52	-4.83	91.84	43.15	9.50	-18.24	52.58	13.83	33.24	-0.54

1. Growth in urban population

2[1] Growth in proportion of urban population to total urban population of region in different class size towns.

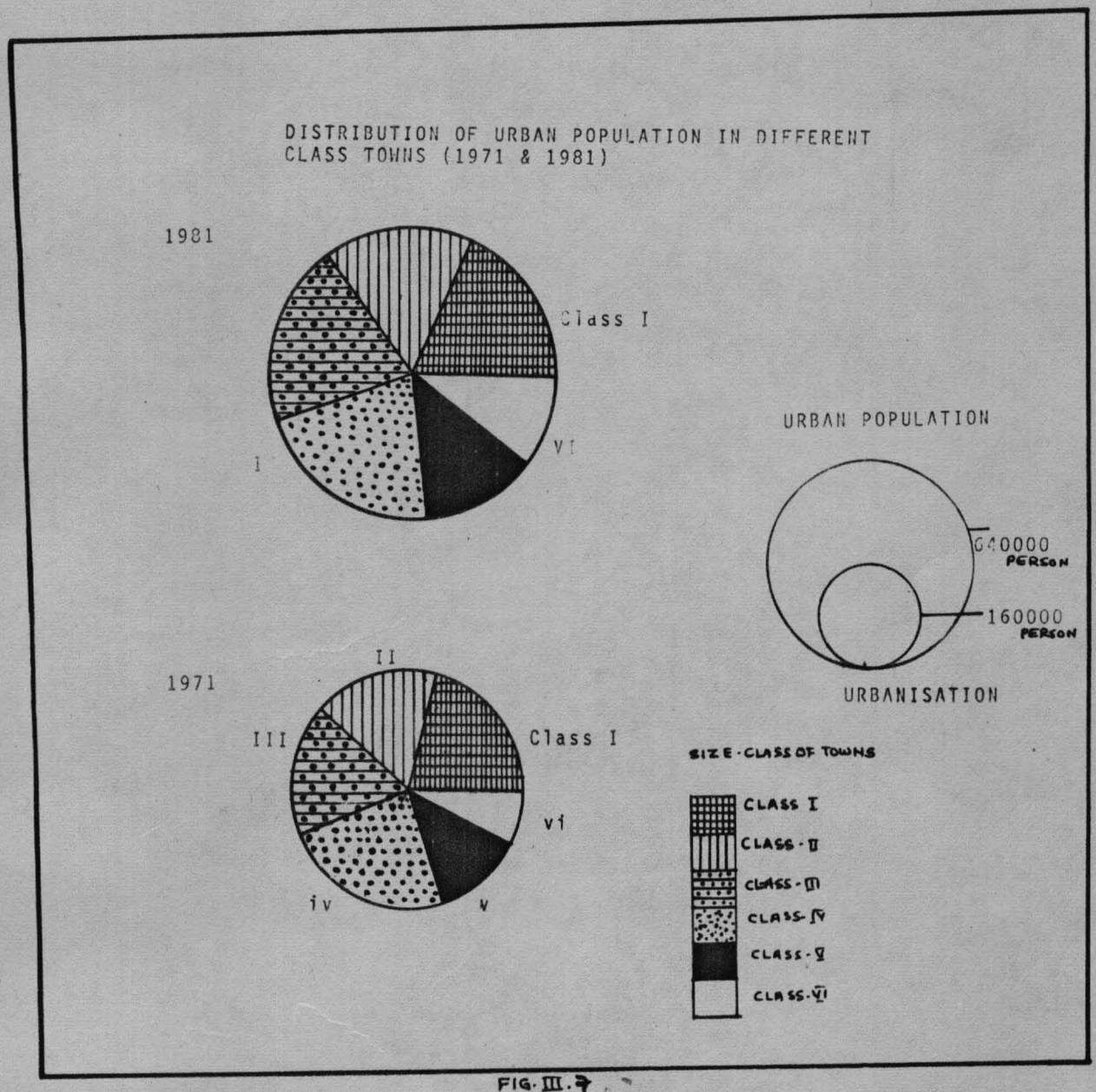
DISTRIBUTION OF URBAN POPULATION IN DIFFERENT CLASS TOWNS (1971 & 1981)
1981
Class I
VI
I
URBAN POPULATION
640000 PERSON
160000 PERSON
URBANISATION
1971
II
III
Class I
vi
iv
v
SIZE-CLASS OF TOWNS
CLASS I
CLASS-II
CLASS-III
CLASS-IV
CLASS-V
CLASS-VI

FIG. III.२

1971 to 81 there were many ups and downs. Following table gives the growth pattern in different class towns. If we see the whole region, there is 32.79% growth rate in Class I urban population, but on the other side negative growth rate is found (-13.27%) in proportional distribution of total urban population in different class towns. The positive growth rate in urban population in different classes of towns have been found postive, it varies from Class I, to Class VI. Highest growth in urban population is found in class VI towns (86.87%) followed by class II towns (85.62), class III towns (76.68%), Class V towns (47.35%), Class I towns (32.79%) and class IV towns (26.46%)

But proportion of total urban population has decreased in some class towns and in some towns it has increased, which shows the positive and negative growth rate in proportionate distribution of total urban population. This increase and decrease is basically because of inclusion of new towns and shifting of the towns from one class to next class. Highest netative growth rate has been observed in class IV towns (-17.41%) followed by class I (-13.27%) and class V (-3.81%). Positive growth rate has been observed in class II towns (21.30%), followed by class VI towns (22.00%) and class III towns (15.38%). This positive growth in proportion of total urban population was because, in 1971, in class II, type towns there were only two towns, it has increased to 3 towns in 1981 census, in

class III it has increased from 5 towns to 9 towns in 1971-81. In class VI category, the number of towns has been increased from 34 to 58 during 1971-81 (see appendix). There have been an increase in other class towns, but compare to class VI and Class III, it was less and do not make much difference in proportion and hence the growth has been negative.

Finally we can say that our study region shows a significant and balanced pattern of urban population in different class towns unlike other regions of the country.

Table No. III.6

Distribution of Urban Population in Different size class of towns 1971-81.

	Large Size		Medium Size		Small Size	
	1971	1981	1971	1981	1971	1981
U.P. Hills & H.P	20.87	18.10	13.52	16.40	65.61	65.49
U.P. Hills	30.06	24.72	9.45	14.47	60.49	60.81
H.P	-	-	22.76	21.66	77.24	78.34

Above Table III.6 shows the distribution of urban percentage in different size classes of towns reveals the changes in the distribution of urban population in

different size class during 1971 & 1981. Taking account of the region 20.87% of the urban population was in large size cities (100000 & above population). In 1971 census, which has decreased to 18.10% in 1981. Highest urban concentration is found in small cities in both the censuses. The proportion has slightly decreased by 0.12%. In the medium size class the proportion of urban population has been increased by 2.88%. It is because some more towns has been included, which have shifted from small size to medium size class.

Looking separately at U.P. hills it is found that in 1971, there was 30.06% of urban population concentrated in large scale class, but in 1981 this percentage has decreased to 24.72%. But in the case of medium size class towns, percentage has increased from 9.45% in 1971 to 14.47% in 1981 census, because in Nainital district one class II town had emerged in 1981 census. Percentage has also increased in small size class by 0.32%, because many new towns has came up in 1981 census, but they have not affected much this distribution of urban population in different size class.

Himachal Pradesh has also experienced small changes in the percentage distribution of urban population in size class. In medium size class, there was a decrease of

1.1% in urban proportion during 1971 to 1981, but this decrease in urban proportion is transferred to small size class experiencing 1.1% increase during 1971 to 1981 census. In 1981, there was only one town in 1971 in medium size class, it remained again only one in 1981 also. But in the case of small towns there has been an increase of 11 more towns (see appendix) which has increased the proportion of urban population in small size class.

(iv) Indices of Growth in Urban Population (1901-1981)

The growth in urban population is being reflected by the relative values taken 1901 value as base of 100. This index of population growth is given in Table III.7 for various decadal points. The table shows the historical development of urban population in the districts of the region. There are some districts, who did not have any urban population in 1901 census, there are Hamirpur, Kullu, Uttarkashi Chamoli and Pithoragarh district; so here considering the 1901 census as base, it is not possible to give the indices of growth of urban population for above given districts.

Table No. III.7

Indices of growth of urban population 1901-1981

District	1981	19/1	1961	1951	1941	1931	1921	1911	1901
Chamba	205.6	181.9	165.9	76.8	128.7	109.5	115.0	103.0	100
Kangra	302.4	214.1	237.56	239.5	59.66	39.30	30.3	42.8	100
Hamirpur	NO URBAN POPULATION EXIST IN 1901								
Una	516.3	217.8	108.8	113.9	113.65	92.7	-	-	100
Bilaspur	362.9	297.6	242.6	117.3	90.0	74.8	-	-	100
Mandi	457.8	466.9	208.6	156.6	130.84	154.0	91.29	76.5	100
	NO URBAN POPULATION EXISTS IN 1901								
Shimla	511.9	391.2	306.8	309.6	133.50	119.5	175.55	123.9	100
Solan	307.3	225.6	197.6	181.1	117.6	63.4	70.05	74.9	100
Sirmaur	428.9	331.6	228.1	165.8	126.9	124.8	92.01	101.4	100
Uttarkashi	DID NOT EXIST AS A SEPERATE DISTRICT IN 1901								
Chamoli	Do								
Tehre-Garhwal	Do								
Dehradun	942.94	688.63	501.28	434.80	237.49	163.16	168.02	141.02	100
Garhwal	887.29	493	389.32	254.04	154.95	96.55	134.66	133.92	100

.....2/-

three sctors of economy viz, Prmary, secondary and tertiary, and see the changes during 1971-81 censuses.

Table III:20 reveals the distribution of workers clasified in three industrial category of urban populationof the region for 1971 Cencus. The overall patternof all districts show the high concentratio of work force in tertiary sector. Highest proportion of work force in tertiary sector is found in the distict Tehri-Garhwal (91.31% followed by Almora (86.59%) and Pithoragarh (84.12%) While lowest proportionis foundin the district Una (52.67%), otherdistricts where low proportion is found are Chamoli (55.99%), Kangra (68.60%), Sirmaur (69.59%), Uttarkashi (69.85%) and Nainital (69.85%).

Examining the workforce in secondary sector highest proportion is found in, Sirmaur District (22.25%) followed by Una (1904%), Nainital (17.8%) and Solan (17.31%), while lowest is found in Pithoragarh (6.80%). In Himachal Pradesh porportion of secondary worker to total workers is found comparatively higher than U.P. hill districts. Among U.P. Hill districts except Dehradun and Nainital proportion of work force is secondary sector is found low.

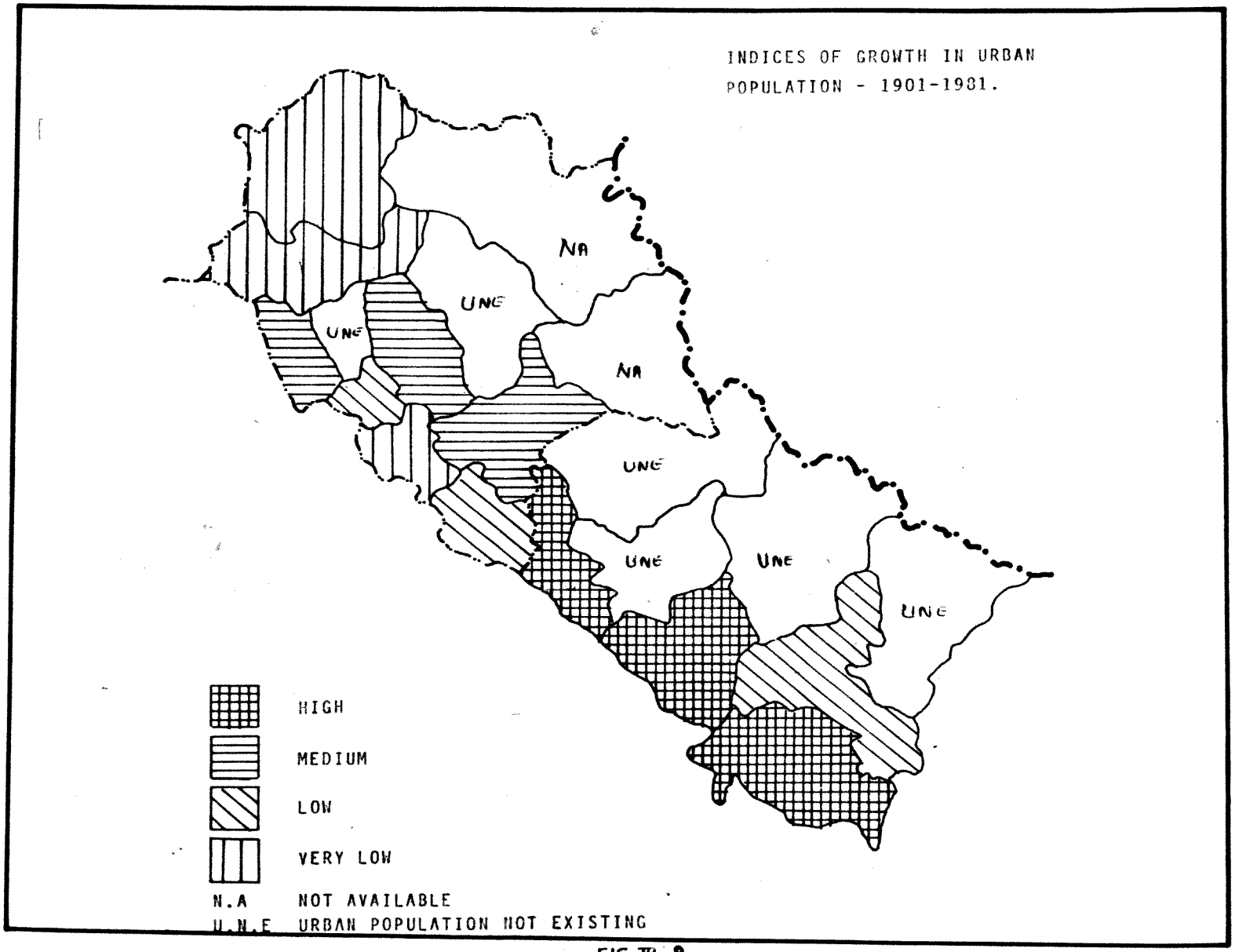
INDICES OF GROWTH IN URBAN POPULATION - 1901-1981.
N.A
U.N.E
HIGH
MEDIUM
LOW
VERY LOW
N.A NOT AVAILABLE
U.N.E URBAN POPULATION NOT EXISTING

FIG-III.8

Examination of the indices given in table III.7 reveals that Dehradun district has experienced highest growth of urban population accounting the 942.94% growth from 1901 to 1981, followed by Garhwal (887.29%), Nainital (799.78%) Una (516.3%) and Shimla (511.9%). Lowest index of growth has been observed in Chamba (205.6%). Other districts which have experienced low growth are Kangra (302.4%) Bilaspur (362.9%), Solan (307.3%) etc. In the district of Mandi, Sirmam and Almora there has been an increase of four times in urban population during 1901 to 1981. The increase of urban population can be attributed by the increase in number of towns along with the low urban begin 1901. Almost in all the districts, number of towns has been increased (see appendix), secondly the increase in urban population of towns, which had already existed in 1901 census.

In some districts, urban population has decreased during 1901 -1921. Almora district had observed decrease in urban population during the 1911 - 1921, other districts are Kangra, Mandi, Solan and Sirmam district. In Kangra, Sirman and Solan district had observed subsequent decrease in urban population in two census 1901 and 1921. This decrease in urban population was due to plague in these areas, this epidemic has scattered to town folks.[7] In

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7. Census of India (1911) vol. 15, part 1, Report by E.A.H. Blent, p. 71, United Provinces of Agra and Oudh.

Almora district decrease in urban population was due to decline of of the Cantonments - Ranikhat, this decline was because of massive outmigration of military personnel during second world war.[8]

At the time of census of 1931, the urban population decreased in Dehradun District, Shimla and in Chamba. This decline in urban population was because of introduction of the Lee Commission free passage scheme which permitted a large number of European army officers and officials to take leave and send their families home in summers. This seems to have considerably affected the growth of Mussourie, the most popular hill which declined by 40.1 percent.[9] Same thing happened with Shimla also.

After independence only Mandi district has observed the decline in urban population in 1981, it was because of completion of project work in the district, which decreased the urban population in 1981 census. Other districts had observed the continuous growth in urban population since independence.

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8. Sharma, K.D., "Endogeneous and Exogeneous Urbanisation A case study of Uttarakhand (U.P. Himalaya)," in O.P. Singh (ed) Himalaya: Man, Nature and Culture Rajesh Publication, 1983, p. 283.

9. Census of India (1937), vol. XVIII, United Provinces of Agra and Oudh, Part I Report compiled by A.C. Turner, p. 68.

(v) URBAN DENSITY :- With the process of unbari ation the density in urban places increase, because of high rate of rural to urban migration and naturl increase of urban population, than density increase may not be seen. In the region of our study, urbanization process started very late, only after independence it has been accelerated. This can be reflected in the density pattern of the region in urban population. Still many new towns are emerging in every census. They have enough space for their expansion, because they are newely recognised as a town. Even in old city or towns high density in not found.

If we see the density pattern of urban population district wise as given Table III:8 than we find that density is very low in many district in the both census of 1981 and 1981, in comparision to the towns of the plain areas of the country. In 1981 census highest density of urban population is found in Naintal district (3769 person/Km^2). This is not worthy that maximum towns of Nainital district are in Tarai region this shows that plain areas has higher density pattern than mountainous region. Nainital district is followed by Mandi (2496 person/Km^2) and Tehri Garhwal (416 person/Km^2). In Himachal Pradesh almost every districts,

Table No. III.8

Urban Densities

1971 & 1981

Districts	Density in person/km^2		growth in density 1971-81
	1971	1981	
Chamba	1133	1135	0.18
Kangra	1169	1320	12.92
Hamirpur	2660	1520	-42.86
Una	2349	699	-70.24
Bilaspur	778	933	19.92
Mandi	2582	2496	-3.33
Kullu	1610	1449	-10.00
Shimla	1855	2308	24.42
Solan	1651	1856	12.42
Sirmaur	1355	1732	27.82
Uttarkashi	418	760	81.82
Chamoli	406	389	-4.19
Tehri-Garhwal	226	416	84.07
Dehradun	1696	2124	25.23
Garhwal	564	911	61.52
Pithoragarh	1846	757	-58.99
Almora	1476	1264	-14.36
Nainital	3851	3769	-2.13

Source : Town Directory,cencus of India 1971 & 1981

Dehradun and Nainital, other districts of U.P. hill has low density of urban population. In Himachal Pradesh only two districts have density below than 100 person/KM^2 in Chamba, 2496 person/Km^2 in Mandi district. This difference in density pottern in Himachal Pradesh and U.P. hill is because of inclusion of new towns, which is very few in H.P. and comparitively higher in U.P. hill. In 1981 in Himachal Pradesh 9 towns were added. Second important thing is that in some districts, first time in 1971 urban population came into existence, before that in 1961 there were no urban population in these district. These have emerged first time in 1981, will suppose not have high density.

Regarding to urban density it is found that in many districts growth of urban density has been decrease tremendously during 1971 to 1981 cencus. Uttarkashi district has observed highest growth rate of 81.82% in 1971-81, followed by Garhwal (61.52%), Sirmaur (27.82%) and Dehradun (25.23%). Other district like Shimla (24.42%) Bilaspur (19.92%) and Kangra (12.92) has also observed a encouraging growth in urban density. Lowest positive growth rate has been observed by the district of Chamba (0.18%). If we

indifferent districts than one cause is very clear, that in these districts where the growth rate is positive and found very high, has got very few new towns included in 1981 cencus. Ths has given the way to rural people to migrate to those towns, which are already existing since long time resulted high density in the districts. If we see the Uttarkashi district, only 1 more town has included in 1981 census and these 2 towns are very small (VI types), In sirmaur district no new town has been included. In sirmaur district no new town has been included. In Dehradun about 4 new towns are added, but it does not affected much to density of whole urban population of the district because of Dehradu city whch has hgh density in the district. In Garhwal district only 1 more new touns are added and in Bilaspur district no new town has been added. So we can say that in case of positive growth rate very few new town are added and in Bilaspur distict no new town has been added. So can say that in case of positive growth rate very few new touns were added, which caused less increase in area and high increase in urban population which has been already taken place in early time.

There are good number of district where negative growth rate in urban density has been

observed during 1971-81 cencus. There are nine district, among them . The district which has highest negative growth rate is Una (-70.24%) followed by Pithoragarh (-59.00%) and Hamirpur district (-42.86%). Other districts have low nagative growth, lowest is in Naintal district recorded -2.13% only. In Himachal Pradesh, four districts (Hamirpur, Una, Mandi, Kullu) and in U¨P¨ hills our districts (Chamoli, Pithoragarh, Almora ad Naintal) have recorded negative growth in density during 1971-81 cencus. The causes of this negative growth rate is the main question. If we analysi the dat of urban population and urban area as well as number of new towns emerged in 1981 cencus, then the cause of the negative growth becomes very clear. In most of thecases increase in the area and urban population was not proportionate. The example in Una district Urban population has grew just 2.4 time of 1971 in 1981 but the increase in area was about 8 times of 1971 in 1981 cencus. Same thing can be observed in all the districts of region where density grwoth has been found negative. Second point, we can not be ignored and very much related with this dereease in density is the number of new towns added in 1981 cencus. In most of cases the many new towns are added in district, where the density is very very

low and created negative density in 1981. In Nainital district about 9 more towns have been added and number became just double than 1971 cencus. In Pithoragarh there are 5 towns compard to only one town in 1971. In Hamirpur and Una district there were only 1 and 2 town respectively in 1971, have became 3 and 5 in 1981 census respectively, So this increase in number of towns increased the urban area tremendously, but urban popultion does not increased proportionally.

So, overall pattern of densities shows that still Himalayan region of U.P. hills and Himachal pradesh is that juncture from where it has to cover a lot of distance to reach the level of other plain region where density is continuously increasing.

vi MIGRATION

Rural to urban migration plays are important role in the process of urbanization[10]. The role of natural growth in urban population is not very much significant, this fact has been shown is 1951-61 cencus, where migration as a factor pushing up urban growth was found more important than natural increase[11]. The choice in defining internal migration must usually be among three levels[12].

i) Provincial or state boundaries

ii) District boundaries and

iii) The boundaries of civil division, like city, towns, village etc.

Above given three levels are further divided in four streams: (a) rural to urban migration (b) urban to urban migration (c) rural to rural migration, and (d) urban to rural to rural migration.

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10. Davis kingsley, "Urbanisation in India." in Roy Turner (ed) India's urban future. Berlely university california 1962, P-5.

11. Bogre and Zachayia K.C., "Urbanisation and migration in India," in Roy Yurner (ed) India 's urban future. Berkeley univesity, califonia, 1962, P.28.

12. Premi M¨K¨ An introduction to social demogropy. Vikas Publishing house Pvt. Ltd. New delhi, 1983, P_106.

In the context of the process of urbanization we are only concern about two main stream viz. rural to urban and urban to urban migration Urban to rural migration is very rare, so we will not consider this in our this part of study.

The rural to urban migration within Indian has had a profound impact on the nature of urbanization, which is Characterised neither by its level nor by its speed but the emergence of larger cities at an early stage of economic development[13]. India's small terms experienced slow growth rate where the big cities grew at a much faster rate[14]. Big cities get migrants from rural areas as well as from the small urban centres. Urbanization at present day developing countries is not matached with the pace of urban development and industrilization, as was the case in the developed countries. At the same time we find that two-third of the population growth of the cities is contributed by natural increase and only one third by the migration, yet migration phenomenon is highly justified because

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13 - Davic Kingsly, "Asia's cities; Problems and options" Population and Development Review, Vol 1, No. 1. Sept 1975, P.71.

14 - Ashish Bose, "Nigration Streams in India", in Ashish Bose (ed). India's urbanziation, 1901-2001, 2nd ed., Tata Mcgraw Hill, N.Delhi, 1978, P-111.

Table No. III.9

Percent growth in Urban Migrant (comprises rural to urban and urban to urban migration)

(1971-81)

Districts	Total urban migrant 1971	1981	% growth 1971-81
Chamba	6983	8449	20.99
Kangra	15328	21911	42.95
Hamirpur	2581	8917	245.48
Una	4330	11183	158.27
Bilaspur	5049	5776	14.40
Mandi	28208	24717	-12.37
Kullu	6256	9358	49.58
Shimla	42386	50196	18.42
Solan	9954	19818	99.10
Sirmaur	9202	12472	35.53
Uttarkashi	4267	9218	116.03
Chamoli	7652	18026	135.57
Tihri-Garhwal	6840	15847	131.66
Dehradun	116395	152609	31.11
Garhwal	21521	38044	76.78
Pitharagarh	6681	13063	95.52
Almora	22043	26353	19.55
Nainital	100865	126437	25.35

Source : Migration table, cencus of India, 1971 & 1981

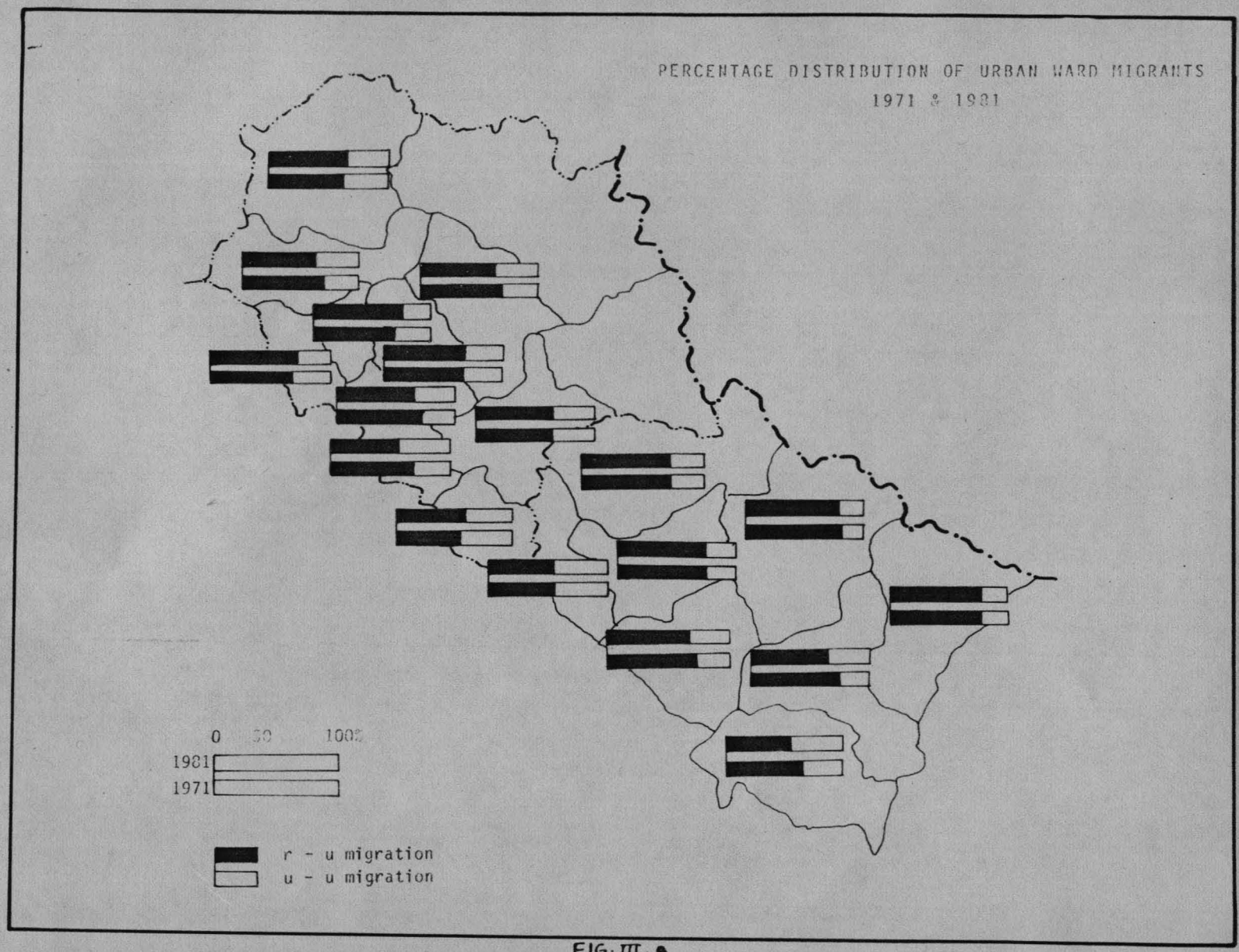
PERCENTAGE DISTRIBUTION OF URBAN WARD MIGRANTS
1971 & 1981
0
50
100%
1981
1971
r - u migration
u - u migration

FIG. III. 9

"It easier to attribute many of the ills of lagindly growing cities to the daily influx of migrants than to the daily births of babies"[15].

From the table, it is found that every district has got positive growth in migration except Mandi district where grwoth of urban migration (urban to urban migration and rural to urban migration) is fond to be negative (-12.37%. This negative growth in urbanward migration may be due to urban out migration from the Pandoh and Sundarnagar towns where some major project work has been completed before 1981 cencus enumeration, which has given the negative growth in urban in migration[16]

The highest growth in urbanward migration is found in th district of Hamipur (245.87%), followed by the district of Una (158.27%) Chamoli (135.57% and Tehri-Garhwa district (131.66%). This high growth rate in these districts have certain cause which has been given major influx of urbanward migration in Hamirpur and Una has became the seperate district in 1972 just after 1971 cencus, Hamipur and Una has became the administrative head quaters of the distict and with

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15 Myron Weives, "Internal Nigration Poliaes purpose interest instruments and effects", in warren Ilchman et. al. (eds.) Policy Sciences and population, Lexington Books, mass, 1975, P.65-66.

16 Town Directry, Himachal Pradesh, cencurs of India 1981 & 1971

the introduction of new district many new establishment has came up which has given incentive to growth of migration towards in these towns of newely formed district.

In Chamoli, in 1971 there were only 2 towns in district, which has increased upto 7 districts in 1981 cencus.[17] This emergence of 5 more new towns in these towns of the districts. In Tehri-Garhwal ony one more town has been introduced in 1981 cencus, but the major cause of high growth of migrats in urban area is because of Tehri-Dam project, which is very huge project of its type. The project has attracted good number of population toward urban centre of Tehri where in 1971 urban population was only 5480 person and it has reached to 12249 person in 1981 Cencus.[18]

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17 Town Directory, U.P, cencus of Indian 1981 & 1971

18 idid, 1981-1971

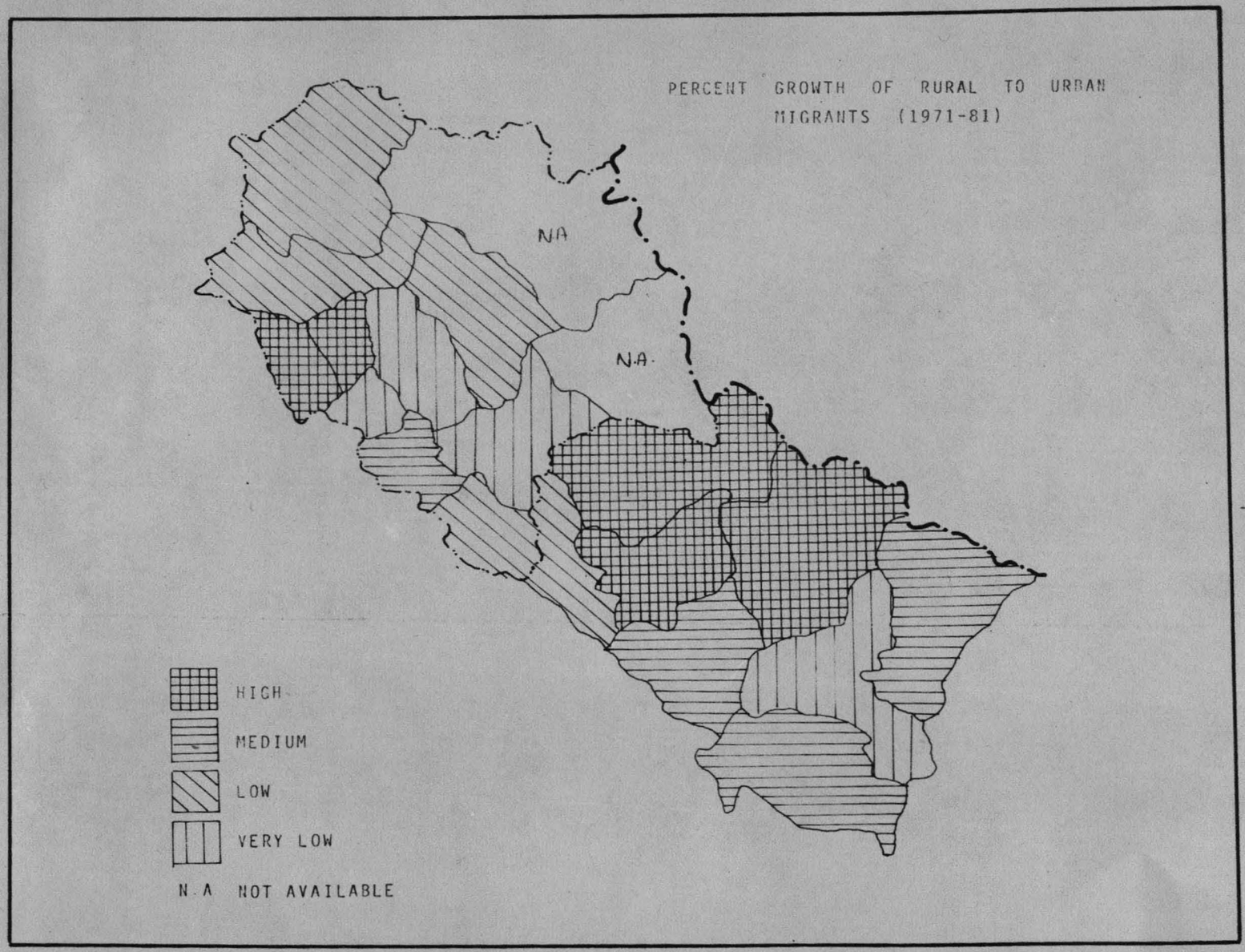
PERCENT GROWTH OF RURAL TO URBAN MIGRANTS (1971-81)
NA
N.A.
HIGH
MEDIUM
LOW
VERY LOW
N.A NOT AVAILABLE

FIG. III.12

Losest growth rate of migrants in urban centres in found in Bilaspur (14.40%) Almora district (19.55%) Chamba (20.99%) and Nanital (25.35%). In these district number of towns also have been increased and urban growth is also found but the growth was not very high, comparatively to others. High growth rate in migrants districts of Hamirpur and Una etc. Shimla, Solan, Uttarkashi, Garhwal and Pilloragash district has obtained medium growth of urban in-migrant to their towns.

The basic feature wich is most visiable in the case of growth urban in migrant is that the district, where in 1971 cencus very few towns were there, has high growth rate. This growth of urban population is through the emergence of large number of towning during 1971-81 this can be seen in case of Hamirpur, Una, and chamoli districts, except Tehri-Garhwal where Tehri dam project is going on. Pithoragah and Uttarkashi district also expenienced rise in number f towns just doubled or and in growth in urban in migrant in district.

Table III:10 gives the percentage distribution of migrants in two streams rural to urban migration and urban to urban migration for 1971 Censuses. If we study the 1971 situation, than it is very clear that

Table NO. III.10

92

Urban Migration Streams

(1971)

Percent Distribution of Migrants in different streams.

Districts	Rural to Urban	Urban to Urban	Total
Chamba	61.37	38.63	100
Kangra	68.35	31.65	100
Hamirpur	67.97	32.03	100
Una	68.05	31.95	100
Bilaspur	71.17	28.83	100
Mandi	67.77	32.23	100
Kullu	69.91	30.09	100
Shimla	61.72	38.28	100
Solan	69.03	30.97	100
Sirmaur	58.69	41.31	100
Uttarkashi	71.18	28.82	100
Chamoli	82.60	17.40	100
Tehri-Garhwal	73.86	26.14	100
Dehradun	56.96	43.04	100
Garhwal	74.15	25.85	100
Pitharagarh	77.65	22.35	100
Almora	76.43	23.57	100
Nainital	65.74	34.26	100

Source : Migration table, cencus of India, 1971

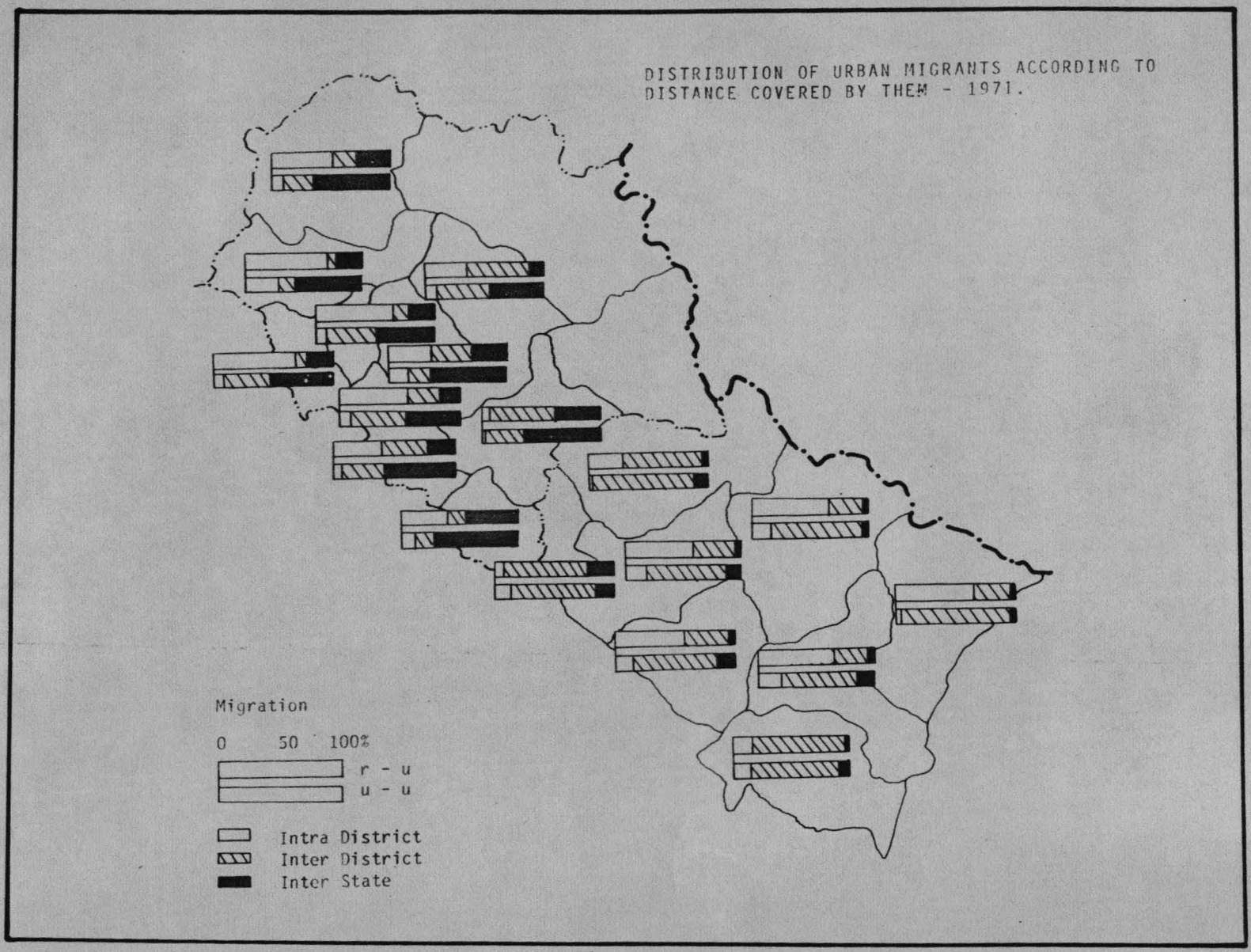
DISTRIBUTION OF URBAN MIGRANTS ACCORDING TO DISTANCE COVERED BY THEM - 1971.
Migration
0 50 100%
r - u
u - u
Intra District
Inter District
Inter State

FIG. III.10

in urban migrant population of all the districts the higher proportion is the rural to urban migrants. In Chamoli district the proportion of rural to urban migrant to total urban migrant is found very high about 82.6%. Except Dehradun in Garhwal Division all four district has very high proportion of rural to urban migrants. Dehradun is large city so it gets good proportion of migrant through urban to urban migration (43.04%). Same situation is in Nainital district of Kumaon division, here Almora nd Pithorgarh has very high proportion towards urban centres can be altribute with the increasing urban density and increasing agricultural worker and cultivators on agricultural land. In the hill region productivity is also very less in comparison to plain area of the country because of high rate of soil erosion and low level of technology in agriculture.

Table III:11 reveals the percentage distribution of two migration stream to total urban ward migration viz, rural to urban migration and urban to urban migration for 1981 cencus has been found highest in Chamoli (79.93%) followed by Pithoragarh (76.08%), Hamirpur (74.18%), Una (73.5%) and Uttarkashi (72.15%), While lowest proportion has been

Table No. III.11

Urban Migration Streams

1981

% Distribution of Urban migrants in different stream

Districts	Rural to Urban	Urban to Urban	Total
Chamba	65.05	34.95	100
Kangra	62.30	37.70	100
Hamirpur	74.18	25.82	100
Una	73.50	26.50	100
Bilaspur	68.97	31.03	100
Mandi	69.08	30.92	100
Kullu	64.23	35.77	100
Shimla	63.05	36.95	100
Solan	57.61	42.39	100
Sirmaur	57.83	42.17	100
Uttarkashi	72.15	27.85	100
Chamoli	79.93	20.07	100
Tehri-Garhwal	71.00	29.00	100
Dehradun	52.93	47.07	100
Garhwal	66.99	33.01	100
Pilharagarh	76.08	23.92	100
Almora	66.35	33.65	100
Nainital	55.46	44.54	100

Source : Migration tables, cencus of India, 1981

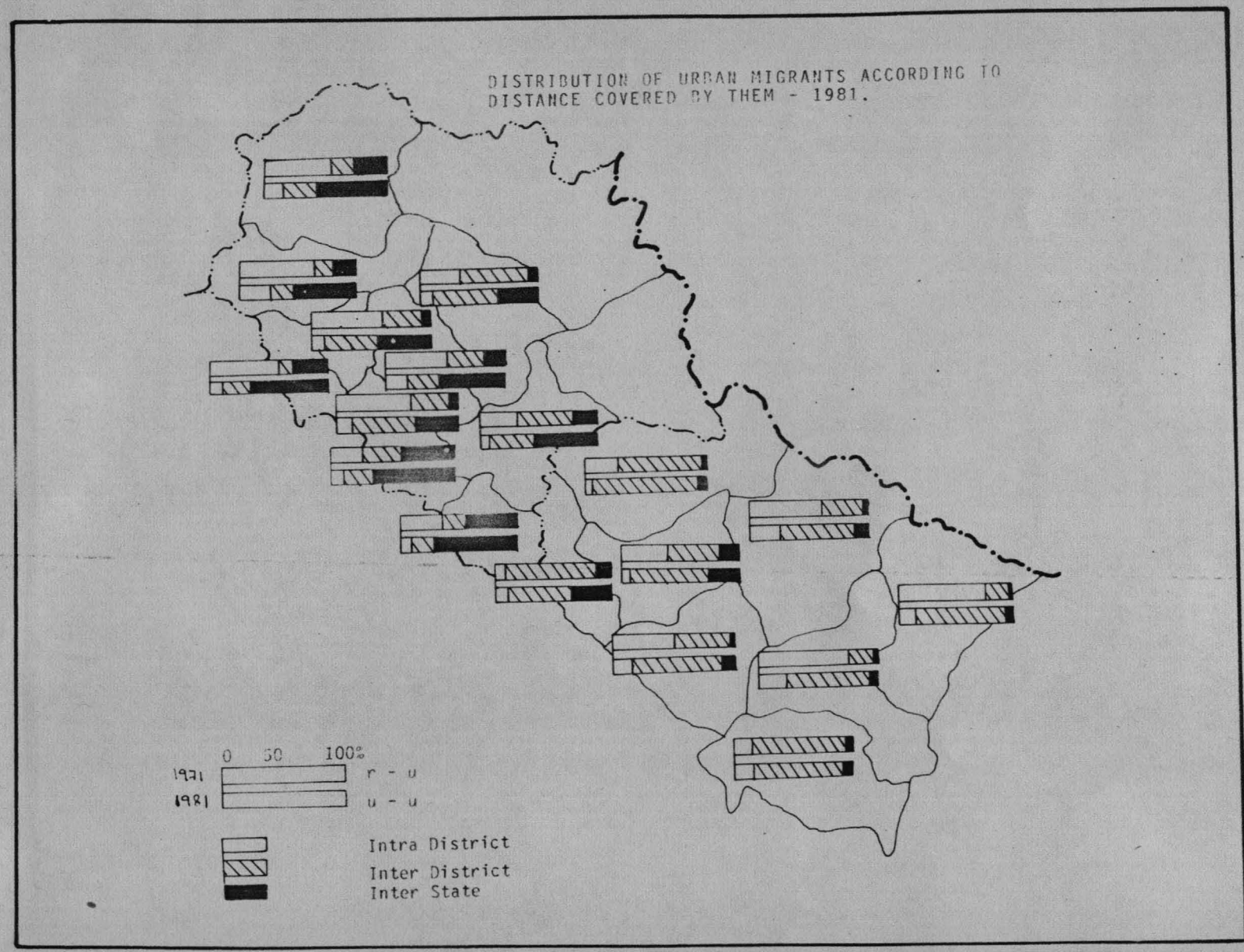
DISTRIBUTION OF URBAN MIGRANTS ACCORDING TO DISTANCE COVERED BY THEM - 1981.
0 50 100%
1971
1981
r - u
u - u
Intra District
Inter District
Inter State

FIG. III.11

found in Dehradun (52.93%) Nainital (55.46%) and Solan (57.61%). Dehradun, Nanital and Solan are most developed districts of the region and attarcts the urban population of other towns.

Examining he urban to urban migration highest proportion is found in Dehradun (47.39%) and Sirmam (42.17%). Lowest proportion has ben found in Chameli (20.07%), Pithoragarh (23.92%), Hamirpur (25.82%) Una (26.5%) and Uttarkashi (27.85%). The high proportion of urban to urban migration in Solan and Sirman district may be attributed to the coming up of new towns as well as increased industrial activities in the new towns of Mahtpur Badsehra and Parwanoo[19]. Dehradun and Nainital districts are already most developed district in region. Where maximum number of towns have come up in 1981 cencus[20].

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19 Towns Directory, Himachal Pradesh, cencus of India, 1981, p.35

20 Town Directory, Uttar Pradesh, Cencus of India 1981

Table No. III.12

Distribution of urban migrants according to distance covered by them

	1971						1981					
	Rural to Urban (R - U)			Urban to Urban (U -U)			Rural to Urban (R - U)			Urban to Urban (U - U)		
	Ir.D	I.D.	I.S.	Ir.D	I.D.	I.S.	Ir.D	I.D.	I.S.	Ir.D.	I.D.	I.S.
Chamba	52.98	16.40	30.61	10.12	25.43	64.44	55.62	18.47	25.91	14.19	27.87	57.94
Kangra	72.19	5.72	22.10	28.66	11.39	59.95	66.85	13.52	19.64	23.64	23.66	52.70
Hamirpur	66.81	12.59	20.60	9.37	49.08	41.55	58.11	33.92	7.95	11.99	42.05	45.96
Una	68.35	10.07	21.58	8.79	37.32	53.89	59.21	12.63	28.14	11.31	22.41	66.28
Bilaspur	56.83	30.86	12.30	9.41	44.37	46.22	60.05	30.74	9.21	12.05	50.47	37.48
Mandi	36.62	34.58	28.80	14.36	19.31	66.34	50.56	29.63	19.82	16.91	27.22	55.87
Kullu	35.81	53.83	10.40	9.13	44.66	46.20	32.56	57.10	10.34	9.92	53.32	36.36
Shimla	7.34	59.92	32.74	4.62	27.14	67.96	30.68	47.90	21.42	6.23	38.27	55.49
Solan	35.48	40.86	22.66	5.10	33.26	61.65	27.47	27.70	44.82	9.88	22.99	68.13
Sirmaur	40.25	13.13	46.62	11.47	17.92	70.61	37.76	16.25	45.97	10.38	18.58	71.04
Uttarkashi	29.31	67.40	3.29	3.66	80.49	15.85	28.54	66.68	5.38	5.61	83.33	10.56
Chamoli	66.27	30.25	3.48	17.28	74.83	7.89	60.04	34.23	5.74	25.60	63.10	11.30
T. Garhwal	58.87	37.67	3.46	17.00	67.62	15.38	38.58	42.38	19.04	8.71	63.13	28.16
Dehradun	9.78	68.55	21.67	9.66	51.99	38.85	9.13	76.92	13.94	10.02	55.56	34.62
Garhwal	59.24	36.97	3.79	14.83	69.63	15.55	50.50	43.87	5.63	14.22	73.07	12.71
Pithoragarh	65.51	33.53	0.96	5.69	88.62	5.69	74.65	23.84	1.51	14.75	79.14	6.11
Almora	64.96	26.94	8.10	21.76	60.72	17.52	73.74	22.36	3.90	23.65	68.37	7.98
Nainital	16.37	78.54	5.03	16.54	72.44	11.02	15.55	77.80	6.65	16.70	71.71	11.59

Ir.D. = Intra District
I.D. = Inter District
I.S. = Inter State

Source : Migration table, cencus of India, 1981 & 1971

APPENDIX - II

DISTRIBUTION OF TOWNS IN DIFFERENT SIZE-CLASS (1971)

DISTRICTS	Total No. of Towns	SIZE - CLASS I	II	III	IV	V	VI
Chamba	4	-	-	-	1	-	3
Kangra	6	-	-	-	1	2	3
Hamirpur	1	-	-	-	-	-	1
Una	2	-	-	-	-	1	1
Bilaspur	3	-	-	-	-	1	2
Mandi	4	-	-	1	1	1	1
Kullu	2	-	-	-	-	1	1
Shimla	5	-	1	-	-	-	4
Solan	6	-	-	-	1	-	5
Sirmaur	3	-	-	-	1	-	2
Uttarkashi	1	-	-	-	-	1	-
Chamoli	3	-	-	-	-	2	1
Tehri-Garhwal	4	-	-	-	-	1	3
Dehradun	9	1	-	1	3	3	1
Garhwal	6	-	-	-	1	3	2
Pithoragarh	1	-	-	-	1	-	-
Almora	4	-	-	-	2	-	2
Nainital	9	-	1	3	2	1	2

Source : Primary Census Abstract, Census of India, 1971

APPENDIX - III

PROGRESS IN THE NUMBER OF TOWNS (1901 - 1981)

DISTRICTS	YEARS 1981	1971	1961	1951	1941	1931	1921	1911	1901
Chamba	5	4	4	2	4	4	3	3	3
Kangra	8	6	6	6	1	1	1	1	3
Hamirpur	3	1	-	-	-	-	-	-	-
Una	5	2	1	1	1	1	-	-	1
Bilaspur	3	3	2	1	1	1	-	-	1
Mandi	4	4	3	3	3	3	2	1	3
Kullu	3	2	1	1	-	-	-	-	-
Shimla	6	5	5	3	4	3	1	1	4
Solan	7	6	6	10	6	4	4	4	5
Sirmaur	3	3	2	2	2	2	1	1	1
Uttarkashi	3	1	1	1	-	-	-	-	-
Chamoli	7	3	-	-	-	-	-	-	-
Tehri-Garhwal	5	4	3	5	-	-	-	-	-
Dehradun	12	9	8	8	7	7	7	7	6
Garhwal	8	6	6	5	3	3	4	3	3
Pithoragarh	5	1	-	1	1	-	-	-	-
Almora	5	4	3	3	3	3	2	2	2
Nainital	18	9	8	7	7	8	8	6	7

Source : Primary Census Abstract, Census of India, 1971 & 1981

APPENDIX - IV

PERCENTAGE GROWTH OF DEPENDENT AND INDEPENDENT VARIABLES (1971 - 81)

S.No	DISTRICTS	Y1	Y2	X1	X2	X3	X4	X5	X6	X7	X8	X9
1	Chamba	13.00	-1.0	-5.3	3.84	1.25	41.1	15.7	0.7	-10.9	5.0	402.4
2	Kangra	41.3	1.4	-19.8	11.3	1.82	-30.0	1.9	9.7	7.9	149.4	323.3
3	Hamirpur	331.4	13.2	20.0	3.28	-2.3	1944.0	20.4	21.2	4.11	150.2	350.0
4	Una	137.1	7.14	60.6	6.8	5.6	0.6	33.8	23.2	5.12	-46.0	-87.9
5	Bilaspur	21.9	-0.44	36.9	9.3	2.51	25.1	74.1	48.9	-7.0	53.2	200.0
6	Mandi	-2.0	-2.7	3.5	6.8	1.4	3.3	-5.2	10.5	22.7	-23.5	112.4
7	Kullu	57.3	2.5	-10.0	5.8	2.8	47.9	7.1	122.0	12.1	11.9	877.0
8	Shimla	30.9	0.8	-24.7	-17.2	-6.6	10.6	-11.0	12.5	-1.7	-38.5	46217.6
9	Solan	36.2	0.7	18.1	6.7	4.2	3.7	6.0	87.3	92.2	47.6	19221.0
10	Sirmaur	29.5	0.4	31.7	7.0	1.2	98.7	47.2	60.9	25.7	2.9	667.5
11	Uttarkashi	120.5	5.6	-6.0	26.8	-4.7	1437.1	63.7	20.2	-2.2	63.4	-64.7
12	Chamoli	139.0	6.9	3.4	-16.4	-8.7	343.4	17.2	27.4	-10.3	193.6	216.7
13	Tehri-Garhwal	95.3	4.6	7.2	-3.9	0.7	331.8	22.9	29.8	0.3	-30.8	233.3
14	Dehradun	36.9	0.7	41.1	8.0	6.6	70.2	53.4	70.4	1.6	22.5	345.8
15	Garhwal	79.8	4.8	-7.7	11.4	-14.7	36.8	31.7	13.5	-16.2	- 1.2	-48.6
16	Pithoragarh	126.3	3.9	-8.9	11.8	4.7	93.6	52.9	27.2	45.1	123.8	908.9
17	Almora	21.7	2.0	13.9	-27.8	-3.8	-33.7	16.3	16.5	-27.2	13.4	399.2
18	Nainital	78.7	2.9	60.8	4.9	4.5	28.3	60.9	101.0	23.3	-23.2	19.1

Contd... 2

S.No	X10	X11	X12	X13	X14	X15	X16	X17	X18	X19
1	51.5	68.7	52.4	65.5	672.1	100.8	60.5	57.0	28.3	108.6
2	59.1	85.3	37.5	98.6	72.4	92.8	-3.2	37.9	46.5	359.4
3	59.0	82.1	15.1	98.6	72.8	93.0	-3.2	32.6	121.5	919.8
4	56.5	80.9	82.2	98.7	72.4	93.0	-3.2	35.7	183.7	365.1
5	46.9	44.4	70.6	63.5	64.5	39.2	1.6	43.0	10.8	71.7
6	25.2	46.7	88.5	54.2	-22.8	47.8	17.6	40.9	12.0	233.2
7	48.0	20.4	78.6	66.7	23.2	50.0	21.8	48.0	37.5	196.3
8	6778.6	26.5	12.6	-40.2	1741.2	18.1	-98.0	37.8	20.9	106.0
9	9653.1	48.5	52.7	-47.8	3206.5	-8.9	-98.1	23.7	66.1	194.6
10	27.3	64.9	66.3	56.5	12.7	94.1	30.4	41.8	33.5	183.3
11	54.1	23.6	30.6	123.8	116.2	397.8	48.0	25.0	118.8	7633.3
12	70.1	38.6	104.1	146.6	751.8	159.7	-12.8	17.1	127.9	1214.8
13	21.9	31.7	51 .6	89.2	1769.9	336.3	33.0	28.3	122.7	7725.0
14	95.4	38.4	14.6	73.8	205.3	42.1	-12.3	16.6	21.8	228.0
15	73.9	41.8	40.1	119.9	543.9	111.0	-13.7	12.9	59.7	20266.6
16	117.8	62.9	62.2	187.7	192.5	212.9	18.8	23.9	91.6	27400.0
17	63.7	45.4	141.5	53.5	383.2	63.7	-1.5	22.1	3.8	5121.1
18	52.5	47.9	47.9	56.9	66.6	17.3	45.1	11.8	50.5	285.4

Second important study may be done on urban migrant, is th distribution of migrant among intra district interdistrict and interstate movements. Examining the table III.12, rural to urban migration is found very high at the level of intradistrict, except two district Dehradun and Nanital of U.P. hills and Shimla in Himachal Pradesh. These three districts have highest concentration of urban population of entire region. In these above given three districts have accounted highest migrants towards urban centre from rural area at inter district level of movement. this only because of being biggest urban centres of the region and maximum concentration of economic activities in these district. Seeing the inter-state level migration, Solan and Sirmaur has accounted highest percentage of migrant in this category, 44.82% and 49.97% respectively in 1981 cencus followed by Una (28.14%) Shimla (21.42%), Mandi (1982%) Kangra (19.64%) T.Garhwal (19.04%). Solan and Sirmaur has highest inter state migration, because both district has common boundary with two states each. Solan district has boundary with Punjab and Haryana State and Sirmaur has boundary with Haryana and Uttarpradesh state whch give impetus to increase the interstate migration towards urban centres of the districts. Una, Kangra has also foundary with Pubjab state, from where they get good number of migrant, busy in trade and commence in these districts.

Shimla is capital city of the Himachal Pradesh so these are good number of central and state government offices and establishment, which has population from different states. Tehri-Garhwal, in U.P. hills has highest percentage of interstate migrants, because of Tehri-Dam Project, in which engineers, teechnician and labourer : different states, increases the inter state migrants. This project is going on since last 18 years and still not finished.

In regard of urban to urban migration, highest percentage of migrant is found ininter-state category except few district like Bilaspur, Kullu in Himachal Pradesh and in U.P hills, Highest percentage of migrant were found in inter district category. In sirmaur district and Solan district have observed highest percentage of inter state migrant in urban to urban migration stream accounting 71.04% and 68.13% respectively. This is because of increasing industrial activities and introduction of new towns[21]. Pitheragarh has lowest inter state migration accounting about 6.11% only followed by Almora (7.98%). Uttarkashi (10.56%) and Chamoli (11.30%) these distictsdo not have boundary with any state

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21. Town Diectory Himachal Pradesh census of India 1981, page-35.

except Uttarkashi which has common boundary with Himachal Pradesh but in this district urbanization is very low, so inter state migration does not take place at very high degree.

Urban to urban migration is lowest at interdistrict level in all the districts of the region except in chamoli where percentage is found 25.60%. But in case of many districts inter district migration is found highest, these districts are Pilthoragarh (79.14%), Garhwal (73.07) Nainital (71.71%), Uttarkashi (83.33%), Tehri Garhwal (63.13%) Chamoli (63.10%) and Dehradun 55.56% etc. All the districts of U.P. hills has highest percentage of migrants (urban to urban) at inter district level, because again theydo not have common boundary with other state except Uttarkashi and Dehradun. Uttarkashi has boundary with shimla district of Himachal Pradesh and Shimla is more developed than Uttarkashi so Uttarkashi could not attract urban population of Shimla and Kinnaur district of H.P. towards her towns. Dehradun also has boundary with Himachal Pradesh, but there ae no facilities of transport and communication between Dehradun and H.P., Which can be the main cause of less migrant at interstate level in Dehradun district.

(iv) URBAN SEX RATIO: Urban sex ratio is one of. the important characteristic in urban studies because it highly different from rural sex ratio. It also differs from hill region to plain area. It we study the table III:13, the sex ratio of 1971 and 1981 lot of variations are observed during 1971-81.sex ratio in U.P hill and H.P. has increased by a good number. In U.P hills in 1971 urban sex ratio was 821 per 1000 male which has increased to 846 female per 1000 male in 1981. In H.P. it was 749 in 1971 and it has reached to 795 in 1981. So it shows that with the increasing urbanization sex ratiois also increasing. So we can make a statement that with the increasing urban population the female migration also increased to urban centres.

Regarding sex ratio there are 795 females for very 1000 males in the town of H.P. the corresponding figures for 1871 cencus was 749 which shows an increase of 46 females per 1000 males in 1981, like other states the urban sex ratio in H.P and U.P is significantly lower than the rural sex ratio of 989 per 1000 males. "The significant imbalances in sex ratio is because of higher cost of living in urban areas, predominance of non agricultual occuptation, migration of male working population to urban areas in

Table No. III.13

Urban sex ratio (1971 & 1981)

(female per 1000 male)

Districts	1971	1981	Percent growth 1971-81
Chamba	862	902	4.64
Kangra	890	917	3.03
Hamirpur	648	818	26.23
Una	876	926	5.71
Bilaspur	775	805	3.87
Mandi	669	802	19.88
Kullu	696	713	2.44
Shimla	664	667	0.45
Solan	792	780	0.12
Sirmaur	821	851	3.65
Uttarkashi	579	571	-1.38
Chamoli	601	623	3.66
Tehri-Garhwal	584	555	-4.96
Dehradun	726	783	7.85
Garhwal	642	682	6.23
Pilharagarh	720	717	-0.42
Almora	592	649	9.63
Nainital	773	821	6.21

Source : Primary cencus Abstract cencus of India, 1981

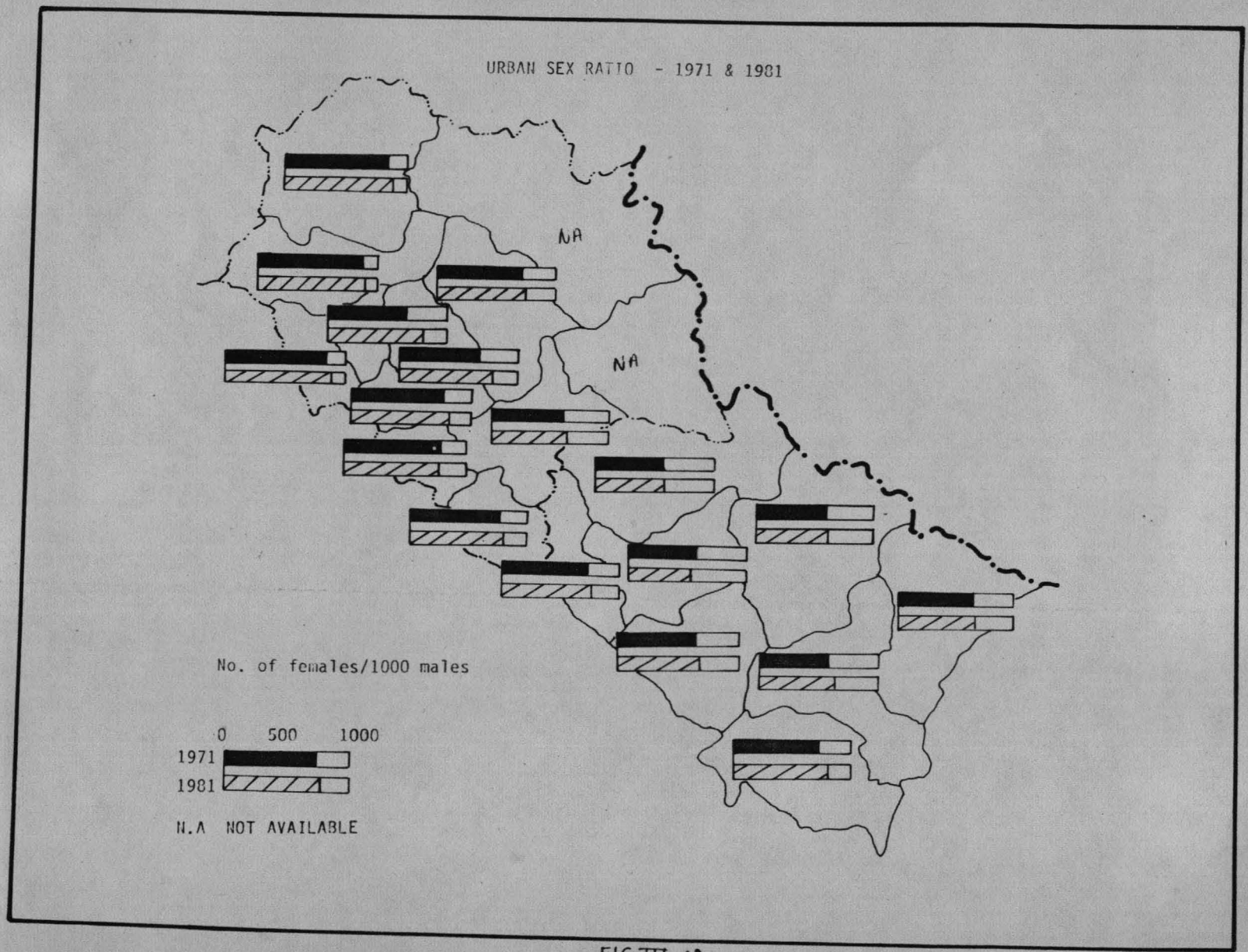
URBAN SEX RATIO - 1971 & 1981
NA
NA
No. of females/1000 males
0 500 1000
1971
1981
N.A NOT AVAILABLE

FIG III.13

insearch of emplyment, and prevalance of joint family system due to the pre-dominance of agricultural economy in rural areas, which holds back femals to tend the agricultural operation."

Looking on the district wise urban sex ratio it has been found that in certain distict the growth of sex ratio is very high. In some district it has negative growth also. In four district namely solan (-15%) Uttarkashi (-1.38%), Tehri-Garhwal (-4.96%) and Pithoragarh -0.42%) negative growth rate has been found*. Slight positive growth in sex ratio foundin Mandi district where male out migration has taken place during 1971-81 cencus because of completion of the project work in Pandoh and sundarnagar towns. Another high growth in sex ratio is found in Hamirpur. It is because in 1981, Hamirpur came into existance as a seperate district and two more towns are added in town are which has increased the sex ratio termendously from 648 to 818 females per 1000 males. Dehradun, Ninital, Almora, Chamba and Una district has experienced a moderate growth in sex ratio. In these district urban population growth has been foundhigh also. Lowest growth in sex ratio is found in Shimla, Kullu, Kangra, and Sirmaur districts.

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* In the hill areas females are more in agricultural activities, so mostly male migrates to carban area for work. In the Uttarkashi and solan district decrease in workers in agricultural activities has been decreased in urban areas of between 1971-81.

We can say that with the increasing urbanization there has been improvement in sex ratio in the region.

(viii) Child Women Ratio :-

Child women ratio is indirect method of fertilty. this measure helps incomparing fertility performance of different groups of females punely on the basis of cencus data. These comparisions are vlaid only under the assumption that the infant and child mortality is the same in different group[23]. Here in this, our main focus is on urban child woman ratio. In study region there are significant variations in ratio during 1971-81, Even variation among the districts is also very clear.

Table III:14 reveals the child women ratio for 1971 & 81 and growth during 1971-81 cencus. In 1971 highest Child-Women ratio is found in Chamoli (823) and Garhwal (689), While lowest ratio is found in Shimla (501). Other district where low ratio is found anre Chamba (554), Una (549), Hamirpur (567) and Kangra (579).

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23 Premi M.K., op.cit., page-85

Table No. III.14

Child - Women Ration (1971 & 1981)

(Childern per 1000 females)

Districts	1971	1981	Percent growth rate 1971-81
Chamba	544	474	-12.87
Kangra	579	495	-14.51
Hamirpur	567	520	-8.29
Una	549	511	-6.92
Bilaspur	615	502	-18.37
Mandi	606	489	-19.31
Kullu	555	468	-15.67
Shimla	501	417	-16.77
Solan	533	528	-0.94
Sirmaur	628	469	-25.32
Uttarkashi	669	606	-9.41
Chamoli	823	565	-31.35
Tehri-Garhwal	722	460	-36.29
Dehradun	727	464	-36.18
Garhwal	689	556	-19.30
Pilharagarh	645	504	-21.86
Almora	590	442	-25.08
Nainital	651	611	-6.14

Source : Social and Cultural Table cencus of India, 1971 & 1981

found in Nainital (611) folowed by Uttarkashi (606), chamoli (565), Garhwal (556) and Hamirpur (520), while lowest is found in Shimla (417). Other district where ratio is found low are chamba (474), Kangra (495), Mandi (489), Sirmaur (469), Tehri Garhwal (460) and Almora (442).

Examining the growth rate in child women ratio it has been found that all the districts have observed negative growth rate. The cause for this declining child-women ratio in urban population can be the increasing female work participation rate, which has been increasing almost in every district during 1971-1981. In Shimla district child women ratio is lowest in both censuses, it is because of high female work participation rate in economic activity and second important point is that, this is largest city of Himachal Pradesh and literacy rate is very high, which affect the fertility rate directly.

(IX) AGE-SEX STRUCTURE OF URBAN POPULATION

Population pyramid is a widely used graphical divice to show the age-sex composition of a population. Population are generally clasified in terms of their age structure and growth characteristics.[24] A young population is one which has a relatively high proportion of children, adolescents and young adults and a relatively low proportion of middle-aged and aged persons. In case of urban centres it has been found that high percentage of population is of young adults and middle aged persons.

Table III : 15 reveals the age and sex structure of urban popoulation district wise for 1971 year. The table shows that higher proportion of the population is found in 0-14 age group which constitutes of children and adolescents population.

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24 - Premi M.K., Op.Cit. p.43.

Table No. III.15

Central Himalayan Region

Age and sex structure of urban population

1971

Districts	0 - 14		15 - 24		25 - 34		35 - 44		45 - 54		55 - 64		65 +	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Chamba	35.40	39.65	20.13	23.11	15.04	15.46	12.14	8.36	8.69	5.09	5.23	4.51	3.37	3.82
Kangra	37.34	39.22	19.54	21.67	13.29	14.55	11.49	11.2	9.38	6.94	5.30	3.90	3.67	2.55
Hamirpur	37.34	39.22	19.54	21.75	13.29	14.55	11.49	11.2	9.38	6.94	5.30	3.90	3.67	2.55
Una	37.34	39.22	19.54	21.75	13.29	14.54	11.49	11.2	9.38	6.94	5.30	3.90	3.67	2.55
Bilaspur	33.64	39.77	21.74	20.64	17.6	16.66	12.13	9.69	7.89	5.62	4.33	4.42	3.35	3.21
Mandi	28.51	39.73	22.63	21.95	21.72	17.56	14.12	10.15	7.60	5.47	3.26	2.96	2.09	2.07
Kullu	27.86	37.74	26.56	22.93	18.65	16.78	12.73	11.53	8.08	5.96	3.84	2.83	2.27	2.22
Shimla	29.74	38.4	22.56	24.36	18.22	16.29	13.77	11.34	9.7	5.84	4.15	2.37	1.78	1.40
Solan	29.19	38.04	27.13	24.78	18.55	15.98	11.87	10.51	7.41	5.60	3.71	3.15	2.14	1.92
Sirmaur	36.42	40.10	21.67	22.25	15.25	14.97	10.83	10.1	7.56	6.2	4.45	3.92	3.27	2.46
Uttarkashi	31.17	46.11	22.04	17.52	19.07	17.26	13.43	8.74	9.13	6.65	3.18	2.3	2.00	1.40
Chamoli	30.40	44.40	24.52	18.24	19.99	17.15	13.7	8.32	6.72	5.3	3.55	4.95	1.74	1.61
Tehri-Garhwal	29.50	39.55	24.13	19.2	17.09	16.21	12.47	9.63	9.81	7.39	4.63	4.46	2.29	3.40
Dehradun	31.33	44.79	25.01	18.65	15.15	14.49	11.96	9.78	8.19	6.19	5.75	3.05	2.58	2.08
Garhwal	34.36	45.92	20.84	18.8	17.66	13.01	12.17	9.89	8.01	6.39	4.18	3.54	2.76	2.42
Pithoragarh	34.65	40.22	22.35	21.26	16.46	15.12	13.59	9.8	7.41	5.32	3.04	3.14	2.39	2.80
Almora	28.47	38.62	27.33	21.51	18.39	14.64	11.54	10.08	7.09	6.84	4.59	5.44	2.59	3.06
Nainital	37.04	41.03	19.05	19.80	15.52	15.63	11.81	10.22	7.91	6.79	5.57	4.36	3.09	2.17

Source : Social and cultural tables, cencus of India, 1971

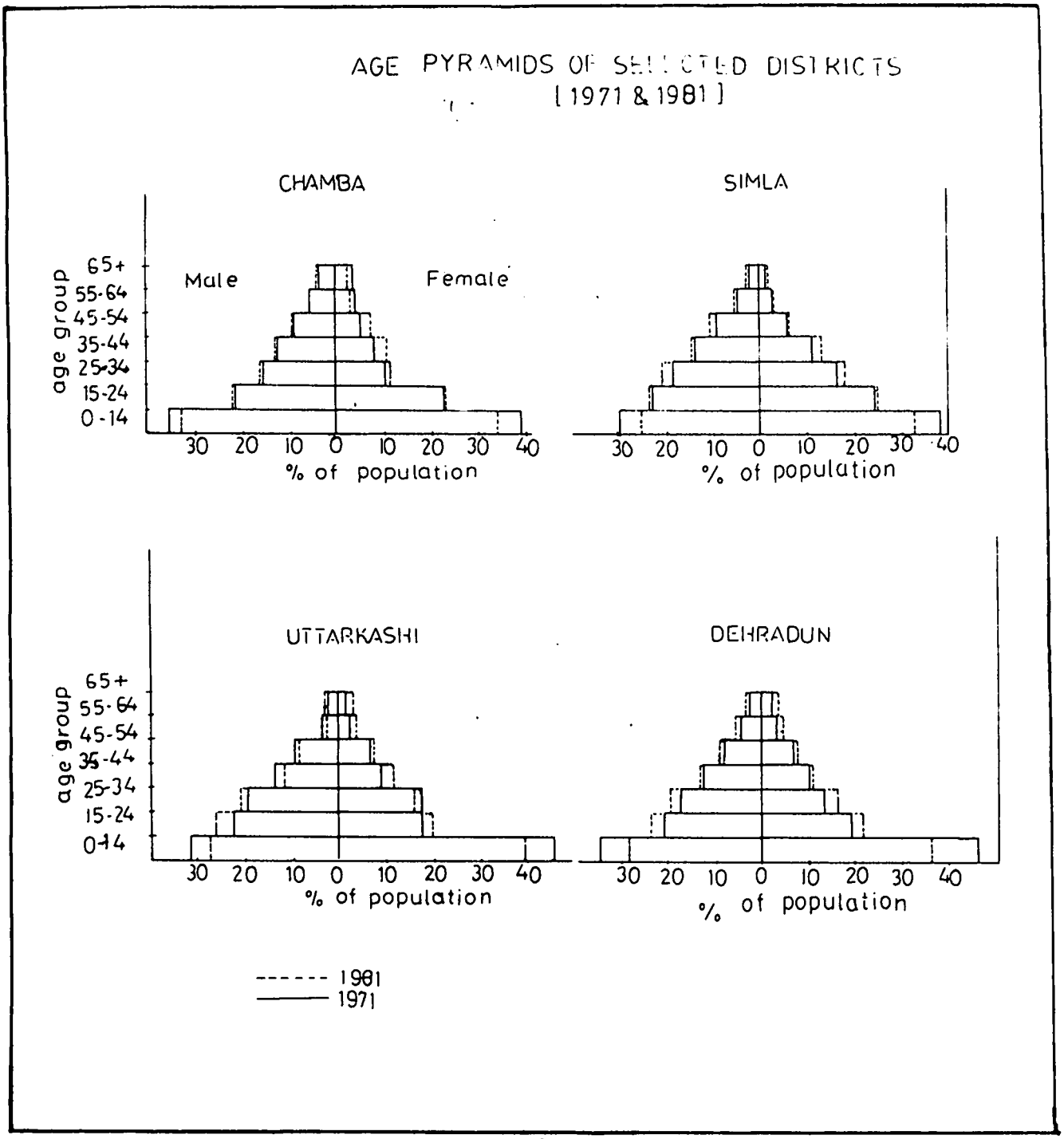

FIGURE III.14

This high proportion has been found in case of male and female both. Female has slightly higher proportion than male in this 0-14 age group. This proportion of population is lowest in the old age group of 65+. When we move from the age group 0-14 to 65+ the proportion is decreasing in every subsequent age group. This shows that the base of pyramid is broader but when we go upward it becomes narrower. Table shows that in the district Uttarkashi Chamoli, Garhwal, Dehradun, Nainital, Pithoragarh and Sirmaur have more than 40% urban female population in age group of 0-14. In most of the districts of Himachal Pradesh this proportion is found less than 40%.

Table III : 16 shows the situation of 1981 year. Here again the highest proportion of population has been found in 0-14 age group in male as well as in female. Lowest proportion is in the age group of 65+, where it varies from 1% to 4%. Female has higher proportion than male in age group 0-14 as a whole. But one main observation is that there has been a significant decrease in proportion of male and female population in age group of 0-14 from 1971 to 1981 census. Almost all the districts have observed this decrease. But there has been increase in male and female proportion in next age group of 15-24. Again

Table No. III.16

Central Himalayan Region

Age and sex structure of urban population

1981

Districts	0 - 14		15 - 24		25 - 34		35 - 44		45 - 54		55 - 64		65 +	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Chamba	33.06	34.56	21.12	23.69	15.66	16.62	12.68	10.98	8.94	7.28	5.18	4.07	3.34	2.75
Kangra	34.61	36.03	20.28	22.39	14.75	16.29	11.32	10.31	9.22	7.47	5.67	4.29	4.04	3.14
Hamirpur	34.59	37.26	20.80	20.21	14.81	15.54	11.90	11.10	13.25	7.26	5.12	4.35	4.04	4.29
Una	36.47	95.77	20.04	20.82	13.80	14.74	10.67	9.74	7.98	8.45	5.56	5.50	5.40	5.13
Bilaspur	31.82	35.54	21.92	21.32	15.61	16.38	12.96	11.11	9.50	6.99	4.71	3.91	3.44	4.34
Mandi	30.99	31.67	20.22	19.58	17.09	15.61	14.25	9.70	9.80	6.50	4.55	3.49	3.00	2.79
Kullu	27.46	35.67	24.50	22.63	19.56	17.52	13.16	11.34	8.48	6.84	4.32	3.20	2.45	2.72
Shimla	24.09	32.80	22.86	24.64	21.59	18.20	14.11	11.78	10.38	7.59	4.9	3.11	2.02	1.82
Solan	29.65	36.11	23.71	23.15	19.19	17.86	12.17	10.30	8.10	6.78	4.17	3.33	2.84	2.31
Sirmaur	34.36	36.93	21.74	21.30	15.28	16.21	12.16	11.16	8.85	6.75	4.07	3.72	3.51	3.27
Uttarkashi	27.51	39.58	26.22	19.87	21.58	15.54	11.27	11.57	8.32	7.01	2.57	3.38	2.47	3.05
Chamoli	30.16	39.23	24.83	22.31	18.72	15.83	12.67	10.48	8.01	5.51	3.68	3.61	2.20	2.35
Tehri-Garhwal	22.16	37.14	26.89	26.11	23.96	17.09	12.80	983	8.03	4.34	3.32	2.50	2.81	2.93
Dehradun	28.49	36.10	19.76	21.68	15.49	16.07	11.86	10.76	8.42	7.60	4.82	4.23	3.22	3.49
Garhwal	30.21	40.20	23.48	21.45	18.84	15.24	12.32	10.38	8.89	6.40	3.89	3.43	2.71	2.81
Pithoragarh	30.07	36.75	23.35	24.14	17.99	15.32	12.89	9.93	8.82	6.88	4.15	4.82	2.68	2.98
Almora	26.27	38.46	23.55	22.17	15.81	14.39	14.69	9.52	9.15	8.43	5.43	4.13	3.08	2.85
Nainital	37.39	42.72	20.80	19.81	15.16	14.81	11.38	10.01	8.39	6.39	3.99	3.48	2.89	2.71

Source : Social and cultural tables, cencus of India 1981.

in other age groups have also improved the proportional share as average to whole region. There one still many variations found in the age-sex distribution of population during 1971-81. Over all increase in old population's proportion has also experienced in both sex, specialy in districts of Himachal Pradesh, whereas not much change has been experienced by U.P. hill districts.

ECONOMIC CHARACTERSTIC

(i) Work Participation Rate :- "A worker" was a person whose main actvity was participation in any economically productive work by his physical or mental activity. Work involved not only actual work but also effective supervision and direction of work.[25] This definition has given by cencus of India in 1974. In 1971 cencus dividend all persons into two broad streams workers and new-worker according to the main activity of a person. In 1981 cencus information on workers has been collected at two levels: firstly mani-acivity and secondly marginal activity . Under the main activity the definition of a worker was similar to one adopted in the 1971 ceneus. Thus the question on main activity is expected to provide comparative data on workers in the 1981 cenus according to the 1971 concept.[26]

Table III:1 shows the work participation rate of region. District wise work participation rate shows that chamoli district has highest work

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25 Ministry of Home Affairs, office of Registar General and Cencus Commissioner of India, the population of India, 1974, World population year, CICRED Services, N.Delhi 1974.

26 Premi M.K., 'An Introduction to Social Demugraphy', Vikas Publishing House Pvt Ltd, 1983, p.56.

Table No. III.17

Work Participation

(1971 & 1981)

Work participation ratio per 100 population in working age group.

Districts	1971	1981
Chamba	28.22	31.43
Kangra	29.54	30.28
Hamirpur	36.07	31.26
Una	26.77	26.38
Bilaspur	34.21	33.24
Mandi	38.66	28.84
Kullu	37.12	37.56
Shimla	38.56	38.30
Solan	29.63	36.22
Sirmaur	29.43	29.33
Uttarkashi	41.16	38.71
Chamoli	46.79	41.18
Tehri-Garhwal	33.89	47.09
Dehradun	32.88	29.68
Garhwal	35.04	35.40
Pilharagarh	29.20	33.38
Almora	35.33	34.73
Nainital	29.26	28.22

Source : General Economic Table, census of India, 1971 & 1981

participation rate of 46.7% followed by Uttarkashi (41.16%), Mandi (38.66%) followed by chamba (28.22%), Kangra (29.54%) Nainital (29.26%), Garhwal (29.20%) etc,

In 1981 cencus highest work participation rate is shifted to Tehri - Garhwal (47.09%) followed by Chamoli (41.18%), Uttarkashi (38.71%) Shimla (38.30%) and Kullu (37.56%). Una (26.38%) has experienced again lowest work participation in 1981 followed by Nainital (28.22%) and Sirmur (29.33%) etc. The decrease can be associated with the increase of children population and females population in urban areas. Unemployment can be other cuse for this decrease in participation rate, because own urban areas are "over populated" where pull facter does not work which is the case of western world. In our country population is pushed from rural area, not pulled by urban areas .

In regard of female and male work participation rate, (Table III:18) increased in rate has been observed from 1971 to 1981 cencus. Specially female participation rate has increased in all the districts except solan and Nainital chamoli, and Garhwal district, but this decrease is very less. This is because in Tarai region female participation rate is less than to mountainous interior region. In Garhwal district, major town

Table No. III.18

Work Participation Ratio

(1971 & 1981)

Work participation ratio per 100 population in working age group.

Districts	Male		Female	
	1971	1981	1971	1981
Chamba	46.75	50.59	6.89	10.28
Kangra	34.54	48.74	5.44	10.13
Hamirpur	54.67	49.14	4.75	9.40
Una	47.60	47.39	2.63	3.62
Bilaspur	51.63	50.26	11.74	12.08
Mandi	60.41	51.00	6.15	8.20
Kullu	56.32	56.85	9.54	10.50
Shimla	53.78	60.82	6.52	12.24
Solan	69.86	56.73	10.61	9.94
Sirmaur	48.46	48.11	6.25	7.26
Uttarkashi	55.56	56.07	1.63	8.31
Chamoli	58.62	55.85	27.13	17.63
Tehri-Garhwal	51.23	57.00	4.23	6.18
Dehradun	51.87	51.26	4.18	4.88
Garhwal	54.82	51.20	4.50	3.61
Pilharagarh	46.38	49.84	5.32	10.42
Almora	54.04	55.04	4.99	7.06
Nainital	49.23	48.80	3.40	3.17

Source : General Economic Tables, çencus of India, 1971 & 1981

kotdwara is also found in Tarai Bhabhar region, where female participation rate is less. Highest increased in female participation is observed in Uttarkashi (from 1.63% to 8.31%) followed by Shimla (6.52% to 12.24%), Kangra (5.44% to 10.13%), chamba (6.69% to 10.28%) and in Almora (49.99% to 7.06%). Other districts have also observed a nominal increase in female participation rate. The main cause of this increase in female participation rate is inclusion of new towns where agricultural percentage of population is slightly higher than other towns. For example in Shimla district in 1981 cencus, 37 village fully and about 15 village partly included in towns. In Kangra, Chamba, Mandi, also inclusion of number of village in towns in 1981 Cencus, which has increased the female work participation rate, because in Agricultural sector mostly females are working in hill areas[27]. This same cause can be said in case of U.P. hills also, because there also new towns have been introduced in 1981 census. Another reason of increasing female partici'pation rate is that males migrate towards the big cities of plain areas[28], which decrease the

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27 Cencus of India. 1981, Town directly, Service 7 H.P. Part X-R, p.35.

28 Kamlesh Kumar, pph structive of the U.P. Himalaya in O.P. Singh (ed.) Himelaya: Nature Man & Culture and Rajesh publication, 1985. p.139.

male work participation rate in urban area and increases the female participation retio because female are left over there and male miglate to big cities.

Looking on spatial as well as Tempral variation of male work participation rate, there are much variation. If we use the table, the spatial variations are very clear. Highest male work participation in 1971 census has been found in Solan district (69.86%) followed by Mandi (60.41%), Chamoli (58.62%) and Kullu (56.32%) Uttarkashi (55.56%). Dehradun and Nainital districts have observed 51.87% and 49.25% of male work participation, these two districts have highest proportion of urban population to the total population as well as highest urban populations's Concentration in the region. Lowest male work participation (MWPR) has been observed in Kangra district of Himachal Pradesh (34.54%). Other districts have MWP more than 45%.

In 1981 census slight decrease in MWPR has been observed (Table NO.III 18). The first place has been shifted from solan to shimla (60.82% in 1981). Second highest MWPR is observed in Tehri Garhwal district (57.00%), followed by Solan (56.73%), Uttarkashi (56.07%) and so on. Eight district of the region have experienced highest

increase in participation rate about 14.20% increase in 1981 to 1971. Second districtis Tehra-Garhwal where increase was arround 5.77% in 1981 to 1971. Nainital, Dehradun, Garhwal, Chamoli, Mandi, Bilaspur, Una and Hamirpur districts have experienced decrease in MWPR. Highest decrease has been observed in Mandi district arround 9.41% in 1981. This is because of the completion of project work in Pandoh and Sunder Nagar (here in this district there is declinein urban propulation by 1.97% during the decade 1971-81).

What are the main causes of this decline and increase of MWPR in different districts. According to data there is increase in male worker in absolute term, but in percentage to total population it has decrease, so we can say that employment generation is very less in the economy of the region, which has lower the MWPR. The industrial development is very less, which could not generate the needed employment. In case of Tehri-Garhwal where the increase has been observed, is because of Tehri-Dam project in the district.

(ii) Dependency ratio :- Dependency ratio is the ratio between working age group pupulation (15-64) and non-working age group population (0-14 & 65+). There is much difference of dependency ratio between rural and urben. In rural areas dependency

Table No. III.19

Dependency Ratio (1971 & 1981)

(Dependent per 100 person in working age group)

Districts	1971	1981	Percent growth rate 1971 - 1981
Chamba	693	583	-15.87
Kangra	705	637	-9.64
Hamirpur	695	665	-4.32
Una	709	685	-3.38
Bilaspur	657	595	-9.44
Mandi	541	563	+4.07
Kullu	519	502	-3.27
Shimla	730	419	-42.60
Solan	532	541	+1.69
Sirmaur	694	638	-8.07
Uttarkashi	624	528	-15.38
Chamoli	596	567	-4.86
Tihri-Garhwal	561	436	-22.28
Dehradun	719	580	-19.33
Garhwal	639	588	-7.98
Pilharagarh	655	554	-15.42
Almora	539	516	-4.27
Nainital	708	719	+1.55

Source : Social and Cultural Table, census of India, 1971 & 1981

always higher than urban. In our study region dependency ratio has been found very low except some district. Here in our study there are variation in dependency ratio between district as well as between two time period. In many case it have been decrease and in other cases it have been increased.

Firstly we will study the variation among district in 1971 and 1981 cencus given in Table III:19. In 1971 Cencus, highest dependency ratio is found in the district of Shimla (730), Dehradun (719), Nainital (708) and Kangra (705). These all district are highest unbanized. Shimla district has highest percentage of urban population in over all Himachal pradesh and Kangra district has less than Shimla district's urban percentage. In U.P. Himalaya Dehradun has (47.0%) high urban population and second is Nainital having about 25% population unbanized.. so with the increasing urbanization process, the dependency ratio has been increased.

The lowest dependency ratio is found in Kullu (519), Almora (539), Mandi (541), Tehri-Garhwal (561) and Chamoli (596), rest of districts falls in between of highest and lowest dependency ratio; where dependency ratio is between 600 to 700 per 1000 working age-group population.

In 1981, situation of dependency ratio has been stightly changed. In many district it have been decline and in many it have been increase. But over all variation has been almost same. In Nainital district dependency ratio has been found very highest (719). But in case of district very drasticaly. The main causes of decling dependency ratio in shimla is increased work-force in agricultural section in urban area. In the region participation rate of female in agricultural sector is very high, so when the work force increased in agriculture sector of urban area, it has decrease the dependency ratio at a significance level. In Dehradun number of new towns has been introduced in 1981 cencus, which can be the major factor in decliming the dependency ratio, because the new towns are basically big villages, which become the towns in subsequent period of time and the agricultural activities are still predominant in these towns, we decreases the dependency ratio as a whole for districts urban population.

There are four district who have the dependency ratio between 600-700 per ratio less than workforce age group population. These are Kangra, (637), Hamirpur (665), Ura (685), Sirmaur (638). Other districts have devpendency ratio less

than 600. Lowest despendency ratio is found in Shimla district (419), where in 1971 depending ratio was the highest among the all districts of the region. This decreasing dependency ratio can be attributed by female participation rate which has been increased during the two censuses, 1971 to 1981.

Examining the growth pattern in dependency ratio we found in almost all the districts have negative growth rate except few districts. These few districts where growth ratio is positive are Mandi (+4.10%). Solan (+1.69%) and Nainital (+1.55%) respectively. Mandi district has highest positive growth rate it is because after completion of project, there good number of male working population has gone to their place, which decreased the number of working age group (15.64) population has gone to their place, which decreased the number of working age group (15.64) population from urban areas of Mandi. In solan and Nainital district very less increased have been observed, which can be said a normal process.

Taking account of negative growth in dependency ratio, highest negative growth rate is found in Shimla (-42.60%) followed by Tehri-Garhwal

(-22.46%), Dehradun (-19.33%), chamba (-15.87), Pitheragarh (-15.42) and Uttarkashi (-15.38%). These is because in 1981, the female participation rate has been increased drastically in many district for example in Shimla it has increased from 6.52% to 12.24%, accounting just double increase. In Uttarkashi it has reached from 1.63% to 8.3%. Same increase has been observed in other districts where negative growth is found.

Here is study of dependency ratio we found that in some district it has been icnreased as well as in some district it has been decreased. In case of negative growth it has been observed in many distictsis due to increasing female participation in urban areas and no of towns increasing during the period, where good proportion of agricultural population is associated and where females are almost all in agricultural sector as working force increases participation rate as a whole for districts.

(iii) Industrial Classificationof urban workforce:-

In the reval population heavy concentration of workforce is found in primary activities. But in Constrast of rural population, urban population has very high proportion of work force in secondary and tertiary sectors. Now the aim of the study is to analyze the distribution of workforce among the

Table No. III.20

Distribution of workers classified by Industrial category

(Urban) (in percentage)

1971

District	Primary*	Secondary**	Teritiary***	Total
Chamba	6.89	13.38	79.73	100
Kangra	17.72	13.68	68.60	100
Hamirpur	11.93	14.50	73.57	100
Una	28.29	19.04	52.67	100
Bilaspur	18.84	10.10	71.06	100
Mandi	7.27	7.27	85.46	100
Kullu	12.14	14.15	73.71	100
Shimla	4.62	8.85	86.53	100
Solan	5.26	17.31	77.43	100
Sirmaur	8.16	22.25	69.59	100
Uttarkashi	20.91	9.24	69.85	100
Chamoli	34.85	9.16	55.99	100
Tehri-Garhwal	1.21	7.48	91.31	100
Dehradun	3.10	13.18	83.72	100
Garhwal	4.54	9.62	85.84	100
Pilharagarh	9.00	6.88	84.12	100
Almora	4.93	8.48	86.59	100
Nainital	12. 34	17.81	69.85	100

Source : General Economic Table, census of India 1971

* Comprises of cultivator, Agricultiral Labours and workers in Live stock, corestry, fishery orchard etc. activities.

** Comprises of workers in Mining and querrying, household and other than household industrial activities.

*** Comprises of workers in construction, Trade and Commerce, Transport, Storage and communication and other services.

three sctors of economy viz, Prmary, secondary and tertiary, and see the changes during 1971-81 censuses.

Table III:20 reveals the distribution of workers clasified in three industrial category of urban populationof the region for 1971 Cencus. The overall patternof all districts show the high concentratio of work force in tertiary sector. Highest proportion of work force in tertiary sector is found in the distict Tehri-Garhwal (91.31% followed by Almora (86.59%) and Pithoragarh (84.12%) While lowest proportionis foundin the district Una (52.67%), otherdistricts where low proportion is found are Chamoli (55.99%), Kangra (68.60%), Sirmaur (69.59%), Uttarkashi (69.85%) and Nainital (69.85%).

Examining the workforce in secondary sector highest proportion is found in, Sirmaur District (22.25%) followed by Una (1904%), Nainital (17.8%) and Solan (17.31%), while lowest is found in Pithoragarh (6.80%). In Himachal Pradesh porportion of secondary worker to total workers is found comparatively higher than U.P. hill districts. Among U.P. Hill districts except Dehradun and Nainital proportion of work force is secondary sector is found low.

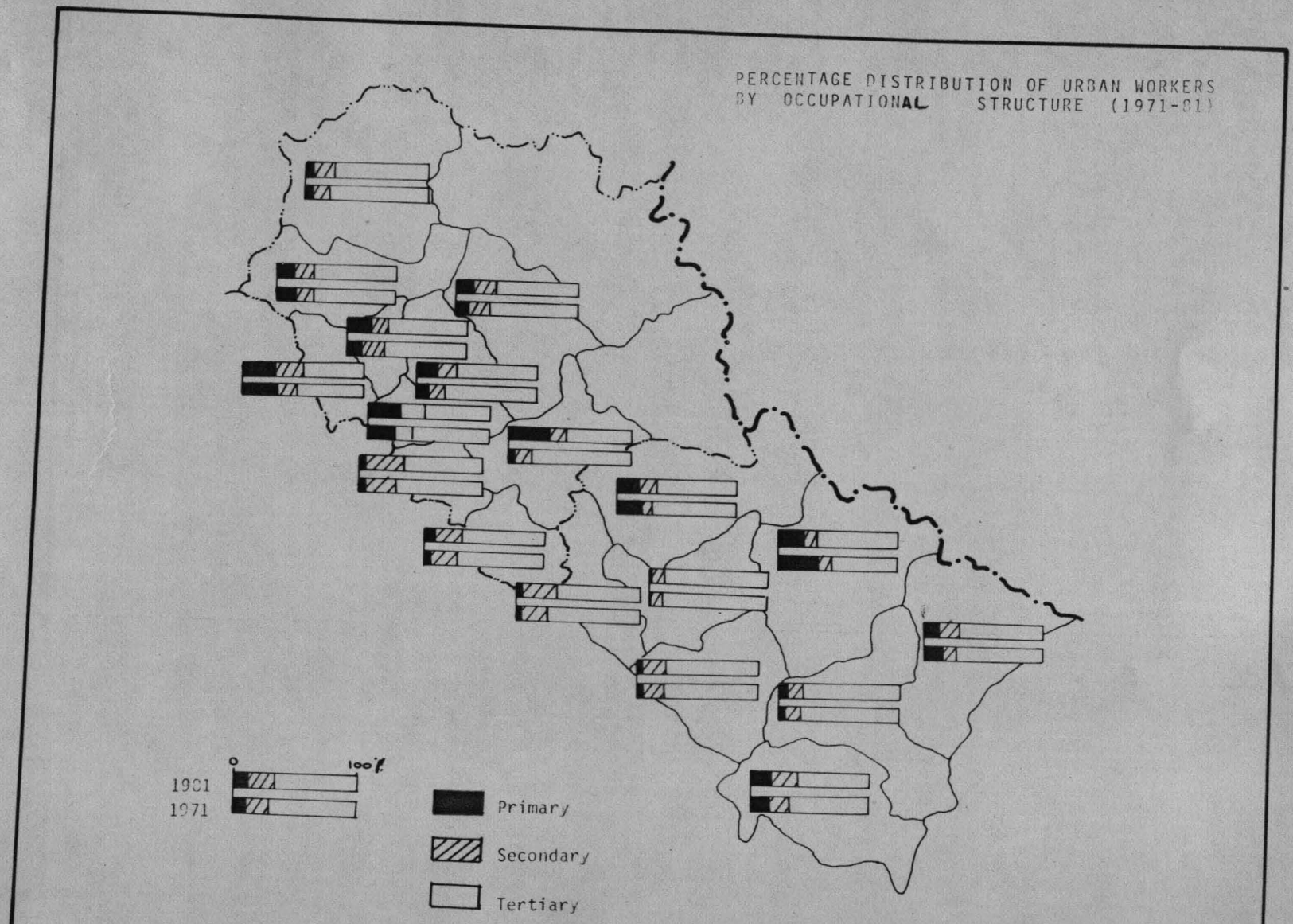
PERCENTAGE DISTRIBUTION OF URBAN WORKERS
BY OCCUPATIONAL STRUCTURE (1971-81)
0
100%
1981
1971
Primary
Secondary
Tertiary

FIG. III. 15

In case of primary sector, proportion is found in cha moli district (34.85%) followed by Un (28.29%) Uttaskashi (20.91%) and Bilaspur (18.84) and Kangra (17.72%), While lowest is found in Tehri-Garhwal (1.21%). Among U.P. hill districts except chamoti and Uttarkashi all the district have low proportion workforce in primary sector. Table III:21 reverals the 1981 situation in the region all the districts have more than 50% of workforce in tertiary activities. In some district viz, Tehri Garhwal (90.98%), Garhwal (84.3%), Almora (81.04%) have very high percentage of workers in tertiary activities. In these district industrial workers percentage is very less, as well as in primary sector. Lowest percentage of workers in tertiary sector is found in Shimla district, it is because here in ths district about 39.75%. Workers are engages in primary activities in 1981 cencus. If we compare the U.P. hills and H.P., than in case of U.P. hill, the percentage of workers in tertiary sector is very high in all the districts except Nainital where it is 62.34% of total urban work force. Other all the districts have workers in tertiary more than 70% In Himachal pradesh Una and Shimla have about 50% and other districts have

Table No. III.21

Distribution of workers classified by Industrial Category (urban)
(in percentage)
1981

Districts	Primary*	Secondary**	Tertiary***	Total
Chamba	8.05	14.61	77.34	100
Kangra	13.77	16.69	69.54	100
Hamirpur	18.14	13.35	68.51	100
Una	27.41	20.15	52.44	100
Bilaspur	19.06	14.99	65.75	100
Mandi	10.06	11.50	78.44	100
Kullu	11.05	16.42	72.53	100
Shimla	39.75	10.05	50.20	100
Solan	4.69	22.39	72.92	100
Sirmaur	8.80	19.95	71.25	100
Uttarkashi	14.54	11.21	74.25	100
Chamoli	20.90	8.51	70.59	100
Tehri-Garhwal	2.81	6.21	90.98	100
Dehradun	4.55	21.50	73.95	100
Garhwal	4.85	10.85	84.30	100
Pilharagarh	12.86	16.41	70.73	100
Almora	7.00	11.96	81.04	100
Nainital	16.33	21.33	62.34	100

Source - General Economic Table, cencus of India, 1981

* Primary sector comprises of cultivators, Agricultural Labour and Live stock fishing orchasts etc. Activities.

** Secondary sector comprises of Mining and querrying and household and other than household activities.

*** Tiirtiary sector comprises construition, Trade & Commerce, Transport, Storage and communication and other services.

approximately 70% or more tha 70%, highest is foundin Mandi District (78.44%). In these districts where percentage of workforce in tertiary sector is companitendy low, there is high percentage of workforce is in agricultural activities.

In the Secondary sector highest percentage of work force is found is solan (22.39%), Second highests in Dehradun (21.50%), followed by Nainital (21.33%), Sirmaur (19.25%), Kullu (16.42%), Pithoragarh (16.41%), Kangra (16.69%) in 1981 census. Lowest percentage is formal in Tehri Garhwal (6.21%), Chamoli (8.51%), Uttakashi (11.21, Garhwal (10.85%).

The common feature, which helps to give some conclusion, that most of the district who has high percentage of worker in secondary sector are situated in Tarai Belt of he region or adjoining the plain area to Mountainous region. And where service sector has high percentage are in sligly interior areas of the region.

Urban Work force in agricultural sector gives very different picture in the region. Highest percentage of primary workforce is found in Shimla (39.75%) followed by Una (27.41%), Chamoli (20.90%), Hamirpur (18.14%) and Nainital (16.33%).

This high percentage because of two Causes, first is that, in 1981 census no. of villages have been included in towns, for example in Shimla 37 villages fully and 15 villages partly have been included in towns. Secondly around the forme has been increased the urban primary work force. Lowest percentage of work force in primary sector is found in Tehri-Garhwal (3.81%) followed by Dehradun, Solan (4.69%) and Garhwal (4.85%). Himachal Pradesh activites in all the district except solan. In U.P. hills, four district has very low percentage of primary work-force.

From 1971 to 1981 cencus, there has been many changes in the workforce distribution among these sectors of economy. In many districts percentage of primary sector's workforce has been changed. In Shimla, in 1971, percentage was 4.62%, but in 1981. In Uttarkashi, Kangra, Una, Kullu, it has decreased. But in other districts like Hamipur, Bilaspur, Shimla, Dehradun, Nainital, Garhwal, it has increased.

In case of secondary sector, most of the districts have gained the higher percentage in 1981 cencus, except some districts like Hamirpur,

Shimla, Tehri-Garhwal. Shimla district has expenenced higher decline in secondary sector's percentage workforce. According to data, there is heavy dropout of workers from Manufactuting toward agricultural sector specially in live stock, and in orchards activities.

In the tertiary sector, the workforce percentage has been declined in every districts, but this decline in very less in every district only in chamoli, Sirmaur, Uttarkashi district has gained some percentage increase in tertiary sector because of increase in workers in constructments.

SOCIAL CHARACTERISTICS

(i) Urban Litiracy Rate :- High litiracy rate is a main characteristic of urban population among the social characteristic, because most of the educational facilities are concentrated in urban areas, which gives maximum opportunities to urban people to get highly educated. They have comparatively better resources to educate themselves than rural people. In urban areas even female litiracy s also found compartively very high than rural females.

Given table III:22 of urban litiracy reveals the total litiracy, male litiracy and female litiracy respectively. Fistly see the spatial variation in total litiracy in the region. Among the districts of the region highest percentage in total litiracy is found in Nainital District Stands with 75.69% Litiracy rate, which Bilaspur has lowest percentage of urban population accounting only 61.00%. Areal variation in litiracy among urban population are less contrasting in Comparison to other elements of urban population Composition. Six districts namely Kangra (64.34%), Hamirpur (63.15%), Bilaspur (61.00%), Uttarkashi (63.64%) Tehri-Garhwal (63.87) and Pithoragarh (64.89%) has

Table No. III.22

percent Litiracy (Urban)
1981
(exclusive age group of 0-4)

Districts	Total	Male	Female
Chamba	67.44	73.32	60.04
Kangra	64.34	70.62	57.37
Hamirpur	63.15	68.86	56.93
Una	67.90	75.12	59.08
Bilaspur	61.00	70.11	51.17
Mandi	68.66	76.06	59.46
Kullu	70.03	75.71	62.96
Shimla	70.00	76.34	61.11
Solan	72.70	76.86	66.46
Sirmaur	65.21	70.73	58.61
Uttarkashi	63.64	69.44	56.81
Chamoli	65.20	76.04	46.24
Tehri-Garhwal	63.87	75.24	45.61
Dehradun	67.07	75.12	52.58
Garhwal	66.97	73.25	58.93
Pilharagarh	64.89	74.35	51.01
Almora	68.37	77.54	55.58
Nainital	75.69	83.35	63.89

Source : Primary Cencus Abstract, Cencus of India, 1981

litiracy less than 65%. Nine district namely chamba, Una, Mandi, Sirmaur, Chanoli, Dehradun, Garhwal, and Almora has libiracy less than 70.00% Only three district Kullu, Shimla and solar has libirary between 70.0% to 75.0% and Naintal Stands on top with 75.69% litiracy.

Male litiracy of region is slightly higher than total litiracy. Again Nainital district Stands first in male litiracy also with the 83.35% and is followed by Almora (77.54%) Solan (76.86) and Shimla (76.34%), while lowest litiracy among urban male is found in Hamirpur (68.86) and Uttarkashi (69.44%) In case of male litiracy only two district Hamirpur and Uttarkashi has litiracy less than 70% Around six district namely Chamber, Kangra, Bilespur, Sirmain, Garhwal and Pithoragarh has between 70% to 75% urban litiracy. Rest of district except Nainital comes in Category of 75% to 80% litiracy.

Female litiracy rate is subjected to wide variation among the districts in the region while in case of male and total litiracy variation was very narrow. Here Solan district of Himachal Pradesh Stands first in the list with the 66.46% of female urban litiracy, while Tehri-Garhwal has lowest rank

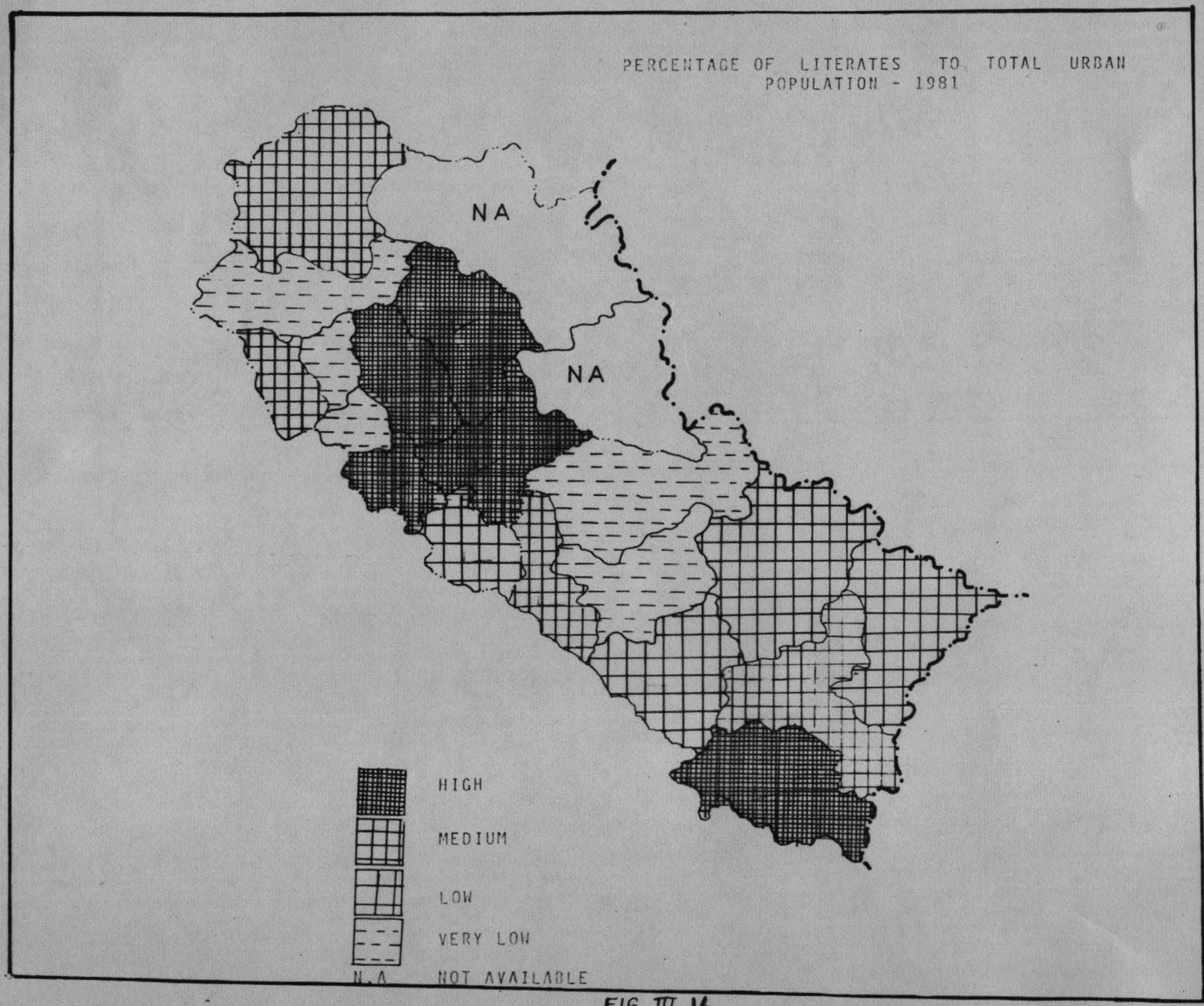
PERCENTAGE OF LITERATES TO TOTAL URBAN POPULATION - 1981
NA
NA
HIGH
MEDIUM
LOW
VERY LOW
N.A NOT AVAILABLE

FIG. III. 16

in urban female litiracy with figure of 45.61%. There are only two district of region namely Chamoli and Tehri-Garhwal who has female litiracy less than 50%. Three district namely Bilaspur Dehradun, Pithoragarh has litiracy between 50% to 55%. Maximum number of district, comes under the Category of litiracy (female) rate 55% to 60%. These are eight district, while only 4 district has female urban litracy between 60% to 65% namely Chamba, Kullu, Shimla and Nainital. Solan is the only district having urllan female litiray above than 65% accounting 66.46%

Assessing the overall situation of urban litiracy, itis found that in respect of male and total litiracy . . among districts is very less while in case of female litiray it is found slightly higher. Nainital district holds first position in male as well as total litiracy, but in urllan female litiracy solan stood first leaving Nainital at second position.

The Main reason for highest urban total litiray in Nainital can be given, the higher development of Communication and transport system, because most of the part of the distict comes under Tarai region where it easy to development of

transport and communication network. Economically this district is developed, agriculture is very developed as well as industrial development is higher than only other district other Developed districts of the U.P. hills ae Almora and Dehradun, When litiracy is quite significant. In Himachal Pradesh Shimla Solan and Mandi has highest, because Shimla is capital city where maximum educational facilties are available and Mandi and solan are just adjoining distict of Shimla.

(ii) Percentage of Scheduled Castes and Schedules Tribe to total urban population :-

Another social characteristics of urban population is proportion Scheduled caste and Scheduled tribe to total population. In the urban areas the proportion of S.C. and S.T. population is always low, but in rural area it is always comparatively higher.

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29 Town Directory, Himachal pradesh, Cencus of Indian, 1981

The Study of table III:23 reveals that solan district has got highest proportion of S.C. population in urban areas, having 20.89% to total urban population. Solan is followed by Una (20.54%) Bilaspur (20.06%) and Sirmaur (19.96%). In U.P. hills almost al the districts have low proportion of S.C. population in urban areas, except Chamoli, where proportion of S.C. population is found 16.67%. Only one district in region got S.C. population's proportion less than 10% district comes under the category of 10% to 15%, there are kangra, Kullu, Uttarkashi, Dehradum, Garhwal, Pitheragarh, Almora and Nainital. Six district namely Chamba, Hamirpur, Mandi, Shimla, Sirmaur and chamoli has proportion of S.C. poulation from 15% to 20%. Rest . districts have proportion of S.C. population more the 20% each.

Scheduled Tribe population is very less in this region except some interior District of Pithoragash, Chamoli and Mandi In Himachal Pradesh maximum tribal population is found in Lahul & Spiti and Kinnars district, but here we are not considering there two district, because they do not have any urban population.

Table No. III.23

Percentage of S.C. & S.T. to total urban population

1981

Districts	S.C.	S.T.	S.C. + S.T.
Chamba	19.03	2.82	21.85
Kangra	13.17	0.03	13.20
Hamirpur	15.82	0.20	16.02
Una	20.54	0.28	20.82
Bilaspur	20.06	0.67	20.34
Mandi	18.02	8.05	18.69
Kullu	14.57	0.78	22.62
Shimla	16.24	0.29	17.02
Solan	20.89	0.14	21.12
Sirmaur	19.96	-	20.10
Uttarkashi	11.46	0.39	11.85
Chamoli	16.67	8.85	25.94
Tehri-Garhwal	8.91	0.03	8.94
Dehradun	11.15	0.24	11.39
Garhwal	11.65	0.19	11.84
Pilharagarh	14.81	7.83	22.64
Almora	13.84	0.58	14.42
Nainital	12.21	0.26	12.47

Source : Primary Cencus Abstract, Cencus of India, 1981

Given table shows that highest proportion of tribal population to total urban population to total urban population is observed in Chamoli district of U.P. hlls, where proportionis found 8.85% while lowest proportion is found in two district of region namely Kangra and Tehri-Garhwal, 0.03% respectively in each. Other districts where high proportion is found are Mandi (8.05%) and Pithoragash (7.83%). In ten district of the region tribal population's proportion is less the 0.50% and three district have between 0.50% to 1.00% Chamba district has comparatively high proportion of S.T. population accounting 2.82% to total urban population. Rest three district Chamoli, Mandi and Pithorgash have higher than 7.50%.

In case of Scheduled caste population variation on space is not much significant, but in case of scheduled tribe population the clear variationon space is visiable. Interio rareas of the region has high proportion of S.T. population and lower proportionis formed towards outer side of the region. In U.P. hill Tehri-Garhwal Garhwal ad Dehradun district which have adjoining areas with plainhas got very less proportion of S.T. population. Same case in case of solan, Hamirpur district. Sirman district has no tribal population.

Measurement of Urbanization

The main objective of this chapter is to trace the urbanization process though time and across space with the help of appropriate statistical techniques of measuring the level and tempo of urbanization. Urbanization is said to be a multi-dimensional phenemeun and as such, different measures and required to cover its arious dimesions in different situation.

The most direct measure of the level of urbanization is percentage or proportion of urban population to total population and rural urban ratio, because of simplicity of calcuation and interprelation. Other measure for the level of urbanization are "city size of the median inhabitant" and "average city size", which take account of the size of urban conceutration is a particular region.[1]

Another important measure is tempo of urbanization which basically measure the change in the level of urbanization based upon comparision of the level of urbanization at successive point of time. The tempo of urbanization can also be measured by

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1. Goldstein and sly.D. "The measurement of urbanization and projection of urban population", IVSSP committee on urbanization and population redistribution Ordina Edition, Dolhain, Belgium, 1975, P-14.

the difference between urban and rural growth ratio. The major advantage of this method is that it does not tend towards zero as the 100 percent level of urbanization is approached.[2] This tempo of urbanization again may be measured by change in the size of median inhabitant as well as the mean city population size.

There is interaction between the urbanization and pettern of population concentration and dispersion, both affects each other. The Gini's conentration ratio and primary index deal with this process of concentration and dispersion. Urbanization is affected by and interacts with the distribution of population over territory. This distribution can be summrized by obtaining the constant of the city size distribution from rank size rule.[3]

(A) DEGREE OF URBANIZATION : "The degree of urbanization usually refers to the absolute or relative numbers of people who lives in what are defined as urban places".[4] Here for measuring the degree of urbanization, following indices have been used.

1. Proportion of urban population to total population:- This has been the most commonly used index for measuring the

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2. Ibid P-14.
3. Ibid P-15.
4. Ibid P-21

Table IV.1

Percentage of Urban population to Total population

(1971 & 1981)

Districts	1971	1981
Chamba	7.50	6.84
Kangra	4.32	4.94
Hamirpur	1.38	4.98
Una	3.94	7.72
Bilaspur	4.88	4.68
Mandi	9.36	7.33
Kullu	5.59	7.09
Shimla	14.59	15.69
Solan	10.09	10.76
Sirmaur	8.45	8.74
Uttarkashi	4.07	6.95
Chanoli	4.17	8.01
Tehri-Garhwal	2.65	4.13
Dehradun	47.08	48.86
Gashwal	6.30	9.82
Pilhargarh	3.81	5.52
Almora	5.21	6.28
Nainital	22.13	27.49

the level or degree of urbanization because it is easy to calculate and interpret. Here we are considering two cencus 1971 and 1981 for our analysis. In 1971 census the degree of urbanization in the region was only 11.15%, which has increased to 13.42% in 1981 census which shows that with the time, the degree of urbanization has marginally increased in the region. In 1971, highest degree of urbanization is found in Dehradun district, claiming 47.08% urban population to total population . Dehradun is followed by Nainital district (22.13%), Shimla (14.59%) and Solan (10.09%). Lowest degree of urbanization is found in Hamirpur district accounting only 1.38% urban population to total population in the district only one town existed which was very small in 1971 census. Other districts like Tehri-Garhwal (2.65%), Pithoragarh (3.81%), Una (3.94%), Kangra (4.32%) etc have also very low level of urbanization. Dehradun and Nainital have highest number of towns and most developed districts in the region, which gives impetus to increase the urban population in districts.

In 1981 census again Dehradun and Nainital has accounted highest degree of urbanization with the 48.86% and 27.49% urban population in the region. Compare

to 1971 census, the degree of urbanization has increased with the high margin in Nainital and low margin in Dehradun. Shimla also maintain its third position with 15.69% urban population to total population in the region. Solan is again at same place with 10.76% urban. Every district has experienced increase in degree of urbanization except few districts like Chamba (6.84%), Mandi (7.33%) and Bilaspur (4.68%). Except Mandi other district have observed absolute increase in urban population but because of high rural growth, the percentage has declined. In Mandi district absolute urban population has descreased by 949 person because of compeletion of project work in Pandoh and Sundar Nagar towns. In the U.O. hills the increase of urban population in absolute as well as percentage has been achieved in 1981 census. The lowest percentage of urban population is found in Tehri-Garhwal (4.13%). Four districts of the region has the urban percentage of population between 4% to 5% and 10 district has the urban percentage between 5% to 10% and only 2 district has between 10% to 20% and 2 districs have more than 20% urban population.

Examining the situation of 1971 and 1981 census, many districts of the region have experienced increase in degree of urbanization during 1971 to 1981 except three districts of Himachal Pradesh. U.P. hills has achieved a remarkable change in degree of urbanization during the 1971-81.

2. Ratio of Urban-Rural Population : The importance of this index of urbanization, the ratio of urban to rural population is that it takes care of the rural population. The index tells us relationship of urban population to rural population; the relative number f persons in a country living in urban area in a region or country to rural population.

This index has a lower limit of zero, when the whole population is rural and upper limit would be infinite when the region has no rural population.

Table IV.2 shows the district wise urban-rural ratio of the region. In 1971 highest urban-rural is found in Dehradun district accounting 88.95 person urban per 100 rural persons. Dehradun is followed by Nainital (28.43 urban per 100 rural). These above two districts are falling in U.P. hills. In Himachal Pradesh, Shimla, Solan and Mandi has highest ratio accounting 17.10, 11.22 and 10.32 urban per 100 rural. Lowest urban rural ratio is found in Hamirpur district (1.40), followed by Tehri-Garhwal (2.72), Pithoragarh (3.96), Una (4.10) and Uttarkashi (4.22). There are seven district who has ratio less than five, six districts has five to ten, three districts 10-20 and rest four districts has more than 20 person.

In 1981, almost all the districts have

Table IV.2

Ratio of Urban-Rural population per 100

Districts	Years 1971	1981
Chamba	8.11	7.35
Kangra	4.52	5.20
Hamirpur	1.40	5.24
Una	4.10	8.37
Bilaspur	5.13	4.91
Mandi	10.32	7.91
Kullu	5.92	7.63
Shimla	17.10	18.61
Solan	11.22	12.05
Sirmaur	9.23	9.58
Uttarkashi	4.23	7.47
Chanoli	4.35	8.70
Tehri-Garhwal	2.72	4.31
Dehradun	88.95	95.54
Garhwal	6.72	10.90
Pilharagarh	3.96	5.84
Almora	5.50	6.71
Nainital	28.43	37.91

experienced increase in ratio except three districts namely Chamba, Bilaspur and Mandi in Himachal Pradesh. The first four districts have experienced higher growth in urban population than rural population and third district Mandi has experienced urban out migration because of compeletion of project work in her two towns before 1981 census.

Again in 1981 census Dehradun stands first with the 95.54 ratio of urban rural population with substantial increase over 1971 census. Dehradun is followed by Nainital (37.91), Shimla (18.61) and Solan (12.05). Lowest ratio has been found in Tehri-Garhwal (4.31). In 1981 census only two districts have got ratio lower than five, against to seven districts in 1971 census. Again 6 districts in 1971 5-10 ratio category, 1981 census has got eleven districts in this category. Three districts are having ratio between 10-20; Garhwal has replaced Mandi with 10.90 urban persons per 100 rural person in 1981 census. The ratio decline in Mandi from 10.32 to 7.91 during 1971 to 1981.

3. Mean City Population Size : Another way of measuring the degree of urbanization is mean city population size. The districts where mean city size greater, shows the higherer degree of urbanization.

Table IV.3

Mean or Average City size (1971 & 1981)

Districts	Year 1971	1981
Chamba	8615	9634
Kangra	7291	8553
Hamirpur	3671	6510
Una	5429	5962
Bilaspur	5242	6372
Mandi	16396	17237
Kullu	7760	9085
Shimla	56207	62445
Solan	6259	7571
Sirmaur	13091	16327
Uttarkashi	6021	8024
Chamoli	6113	6899
Tehri-Garhwal	3739	8348
Dehradun	108829	140706
Garhwal	8287	11918
Pilharagarh	11942	12390
Almora	15359	16600
Nainital	31884	39243

Table IV.3 shows the mean city population size of 1971 and 1981 census. Examining the 1971's situation it is found that Dehradun districts has highest mean city population size of 108829 inhabitants. Dehradun is followed by Shimla (50207) and Nainital (31884) and Mandi (16396) districts. There are only two districts where mean city size less than 5000 inhabitant (Hamirpur & Tehri-Garhwal) Ten districts of the region are having the mean city size of 5000 to 10000 inhabitant. And four districts namely Mandi (16396), Almora (15359), Sirmaur (13091) and Pithoragarh (11942) have mean city size between 10000-20000 inthabitant.

In 1981 census, every districts have experienced increase in mean city size population again Dehradun stood first in the list with the mean city population size of 140706 inhabitant. Dehradun is followed by Shimla and Nainital with the 62445 and 39243 inhabitant respectively. Hamirpur which was lowest in the list in 1971 is replaced by Una district in 1981 with the inhabitant of 6510 mean city size. In 1981, more districts have mean city size less than 5000. There are ten districts under the category of 5000-10000 inhabitant of mean city size. Six districts are in the category of 10000-20000 inhabitant of mean city size.

In U.P. hills the mean city size is found higher in all the district except Uttarkashi and Chamoli distirct where it is found to be 8024 and 6899 respectively. In Himachal Pradesh most of the districts have got low mean city size except Mandi,Shimla and Sirmaur having 17237, 62445 and 16327 respectively. Samirpur has been found in 1981 census also.

4. Size of Locality of Residence of Median inhabitant: Median size of urban centre is another method measure the degree of urbanization. The index has been established by Shryock and Siegel in 1971 in their study. The concept of median size of town is very similar to that of median age except that this index imploys the size of the cities or towns rather than age.[5] For the measurement of median city size urban population of a region is ordered according to the size of localities where people live, from largest to the smallest size. In India we have six size class of towns.

Looking at median size of town of the region,

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5. Ibid P-25.

in 1971, this size has been found 46169 inhabitants. When we see the U.P. hills and Himachal Pradesh separetely on a sub-regional basis,[6] than it has been found that U.P. hills has got larger size of median town, which has 33698 inhabitant. Just opposite Himachal Pradesh has got very small median size of towns, which is only 16732 inhabitants and it is much smaller than the whole reason's median size of towns.

Table IV.4

Size of locality of Residence of Median Inhabitant

Region/Sub-region	1971	1981
Central Himalyan Region	46169	43023
Himachal Pradesh	16732	17155
U.P. Hills	33698	33899

The question arises that why it is so? In our study, it is found that in U.P. hills firstly the number of town is comparatively higher than

6. Here, in the study, in many districts we have one or two towns in 1971 census, It is found to be difficult to compute median size of town at district leve. So, here, we are measuring at regional level as well as sub-regional level.

Himachal Pradesh and secondly other size of towns is found greater in U.P. hills than in Himachal Pradesh. In U.P. hill, Dehradun city influences very much to the median size of towns. But in H.P. there were not city in 1971 as well as in 1981 census.

Examining the table IV.4 the situation of m median size of towns in 1981 census the size for whole region is found 43023 inhabitant, which is slightly smaller than 1981, it is because the number of small towns has increased, which has been affected the median size of towns in the region.

At sub-regional level, U.P. hills has the median size of 33899 inhabitant in 1981 census, which is slightly higher than 1971 census. In Himachal Pradesh also the median size of towns has been improved. The size is found 17155 inhabitant in 1981 census. The causes of this increase will be given under the heading of tempo of urbanization.

B. Tempo of urbanization : The concept of tempo of urbanization refers to change in the degree of urbanization during a period of time.[7] While measuring the degree of urbanization, we consider particular time point, but in the case of tempo of urbanization we consider in time point and see the changes over two time point. When we measure the

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7. Ibid P - 36

the degree of urbanization in term of percentage urban the tempo of urbanization can be measured either as the absolute change in percentage point or rate of change in the percent of population urban between two dates.[8]

Here we are going to study following measure of tempo of urbanization in the region.

1. Annual change of Percentage Point (1971-81) :

Annual change of percentage point is the easiest method for calculating the tempo of urbanization. But this procedure for measuring tempo is affected by the degree of urbanization already achieved at the begining of the period. Still this measure of tempo urbanization is widely used, because we are concern of only two time point, under which study has been taken.

When we see the annual change of percentage point at district level in the region than a large variation among the districts. Three districts have experienced the negative change are namely Chamba (-0.066), Bilaspur (-0.02) and Mandi district (-0.203). The first two district have experienced increase in urban population but the growth in urban population has been lower than rural population

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8. Ibid P - 36.

Table IV.5

Annual change of percentage Points.

(1971-81)

District	(growth rate) 1971-81
Chamba	-0.066
Kangra	0.062
Hamirpur	0.360
Una	0.378
Bilaspur	-0.020
Mandi	-0.203
Kullu	0.150
Shimla	0.110
Solan	0.067
Sirmaur	0.029
Uttarkashi	0.0288
Chamoli	0.384
Tehri-Garhwal	0.148
Dehradun	0.178
Garhwal	0.352
Pilharagarh	0.171
Almora	0.107
Nainital	0.536

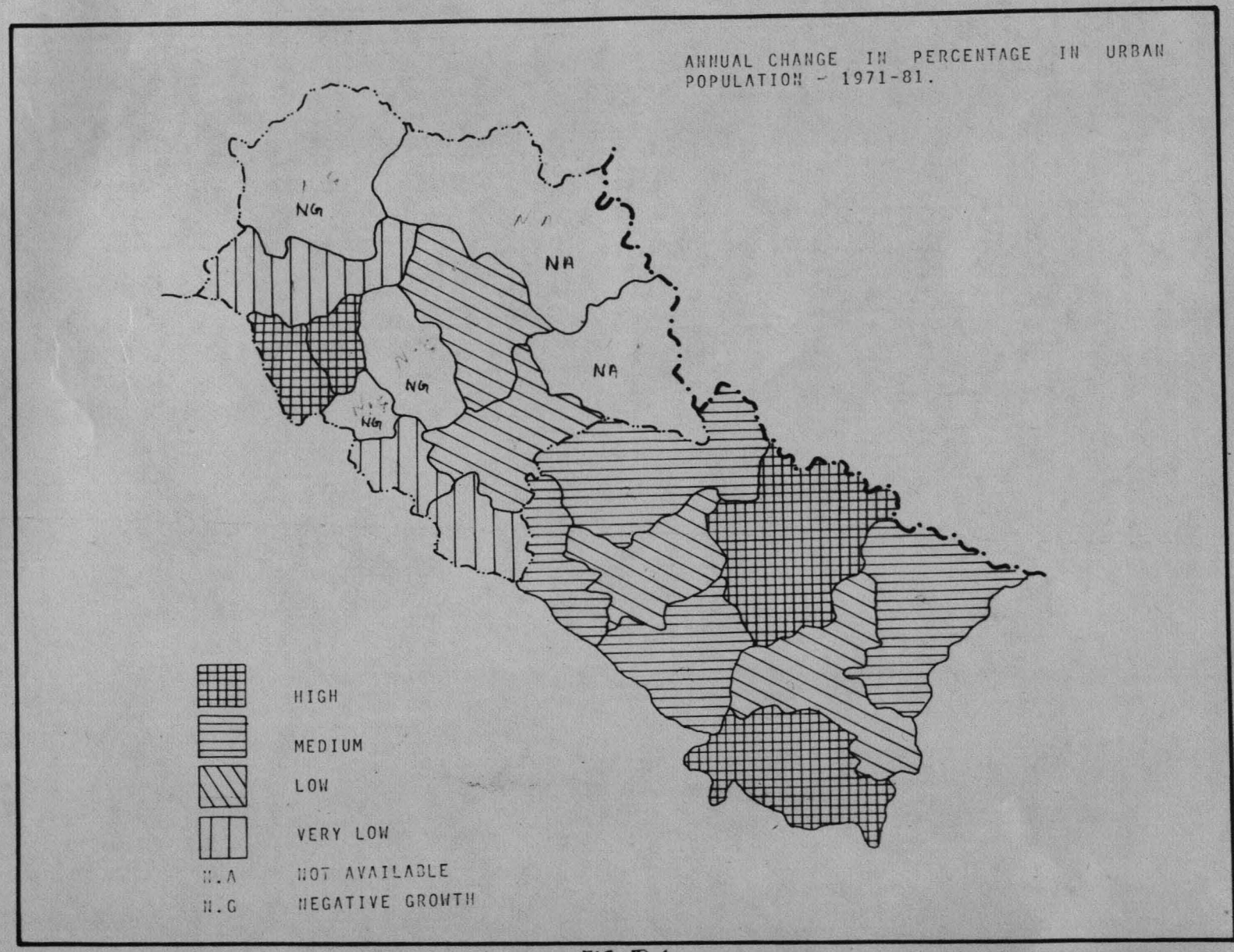
ANNUAL CHANGE IN PERCENTAGE IN URBAN POPULATION - 1971-81.
NG
NA
NA
NG
NG
HIGH
MEDIUM
LOW
VERY LOW
N.A
NOT AVAILABLE
N.G
NEGATIVE GROWTH

FIG. IX.1

growth, which resulted the decline in percentage of urban population to total population. Mandi district has observed decline in urban population as well as in percentage urban population. This is because of completion of project work in Pandoh and Sundar Nagar town, which resulted the labour out migration from the urban area to elsewhere, as discussed earlier also. Highest change of percentage point of urban population has been observed in Nainital district. Nainital is followed by Chamoli, Una, Hamirpur, Garhwal and Uttarkashi district. Lowest change has been experienced by the district of Sirmaur. Other districts are Kangra, Solan, Almora, Shimla and Kullu where change has been observed medium.

At sub-regional level, U.P. hills has observed high rate of change of percentage point to all the districts. But in Himachal Pradesh except four districts of Una, Hamirpur, Kullu and Shimla, other districts has experienced low rate of change in percentage point. Even three districts have observed negative rate of change in percentage urban point. This shows that the tempo of urbanization has been higher in U.P. hills than Himachal Pradesh. This is because in U.P. hills number of new towns introduced in 1981 is much higher than Himachal Pradesh.

In whole region the rate of change of percentage point of urban population has been observed 0.227, which can not be considered very good tempo of urbanization.

2. Annual Average Rate of Change of the percent urban (1971-81) : This is another measure of tempo of urbanization. In the calculation of this index, we consider the change in number of people in urban area as per 100 or 100 population of the region or country. The rate of change of percent urban can be linear, geomatric, exponential or hyperbolic.[9] Here in our study we have assumption that the change in percent of population urban is exponential.

Annual average rate of change of percent urban for all the districts is given in Table IV.6. This rate is found highest in Hamirpur (12.80) followed by Una (6.7), Chamoli (6.5) and Uttarkashi (5.4) and Tehri-Garhwal (4.4). Table shows that some districts have experienced negative change of also, these are Chamba (-0.92), Bilaspur (-0.42) and Mandi district (-2.44). Here in these district absolute population have increased but the percentage of urban population has not got any increase doing the time 1971-81 census, except Mandi where

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9. Ibid P - 37.

Table IV.6

Annual average rate of exponential change of percent Urban (in percent)

District	Years 1971-81
Chamba	-0.92
Kangra	1.30
Hamirpur	12.80
Una	6.7
Bilaspur	-0.42
Mandi	-2.44
Kullu	2.40
Shimla	0.73
Solan	0.64
Sirmaur	0.34
Uttarkashi	5.40
Chamoli	6.50
Tehri-Garhwal	4.4
Dehradun	0.4
Garhwal	4.4
Pilharagarh	3.7
Almora	1.9
Nainital	2.2

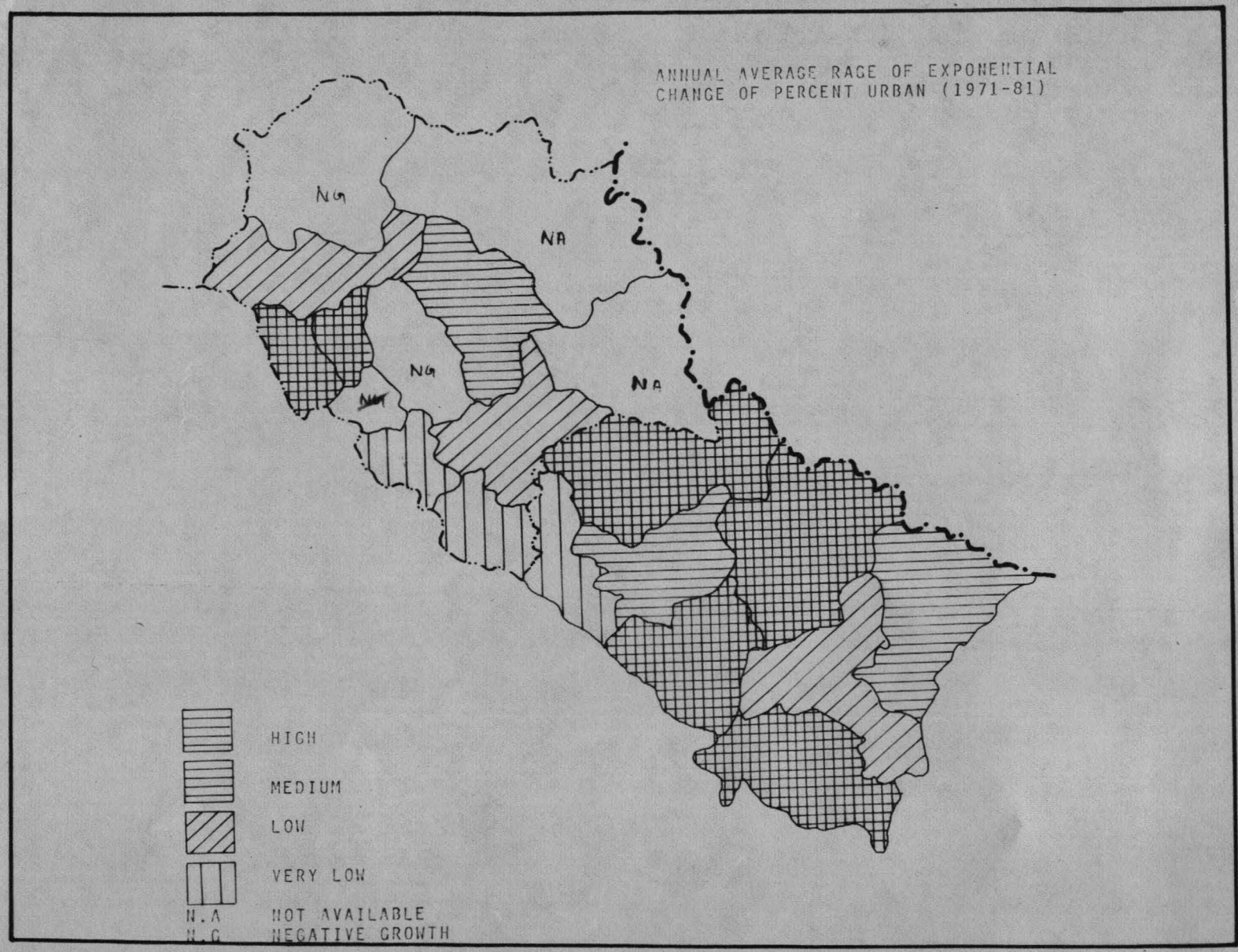
ANNUAL AVERAGE RAGE OF EXPONENTIAL
CHANGE OF PERCENT URBAN (1971-81)
NG
NA
NG
NA
HIGH
MEDIUM
LOW
VERY LOW
N.A NOT AVAILABLE
N.G NEGATIVE GROWTH

FIG. IV.2

due to out migration, the absolute number of urban populatin has declined.

Except in Dehradun (0.4), other district have experienced a higher annual average rate of change of percent urban. Almora, Nainital and Dehradun have experienced low rate of change of percent urban. But in Himachal Pradesh except Hamirpur and Una almost all the district have experienced very low rate of change of percent urban. The district where urabn percentage is found high in 1971 as well as 1981 have experienced low rate of change in percent urban like Shimla (0.73), Solan(0.64) and Sirmaur (0.34).

In Hamirpur district the urban population has got high fivefold increase during 1971-81. Una district urban population is just doubled in during the decade which has given a high rate of change in percent urban in these district. Same situation is found in Uttarkashi, Chamoli and Tehri-Garhwal where urban population got doubled during the decade. This was because of inclusion of new towns and heavy rural urban migration.

3. Difference in Urban and Rural Rate (1971-81) :

In previous measurement of tempo urbanization we have considered the number in urban localities to total population to see the rate of change between two time period. In this index similar concept is applied, but here rural population is also considered

Table IV.7

Percent difference of Urban and Rural rates.

District	Annual rate of exponential change (1971-81)
Chamba	-0.98
Kangra	1.40
Hamirpur	13.20
Una	7.14
Bilaspur	-0.44
Mandi	-2.66
Kullu	2.54
Shimla	0.85
Solan	0.71
Sirmaur	0.37
Uttarkashi	5.69
Chamoli	6.93
Tehri-Garhwal	4.60
Dehradun	0.71
Garhwal	4.84
Pilharagarh	3.88
Almora	1.99
Nainital	2.88

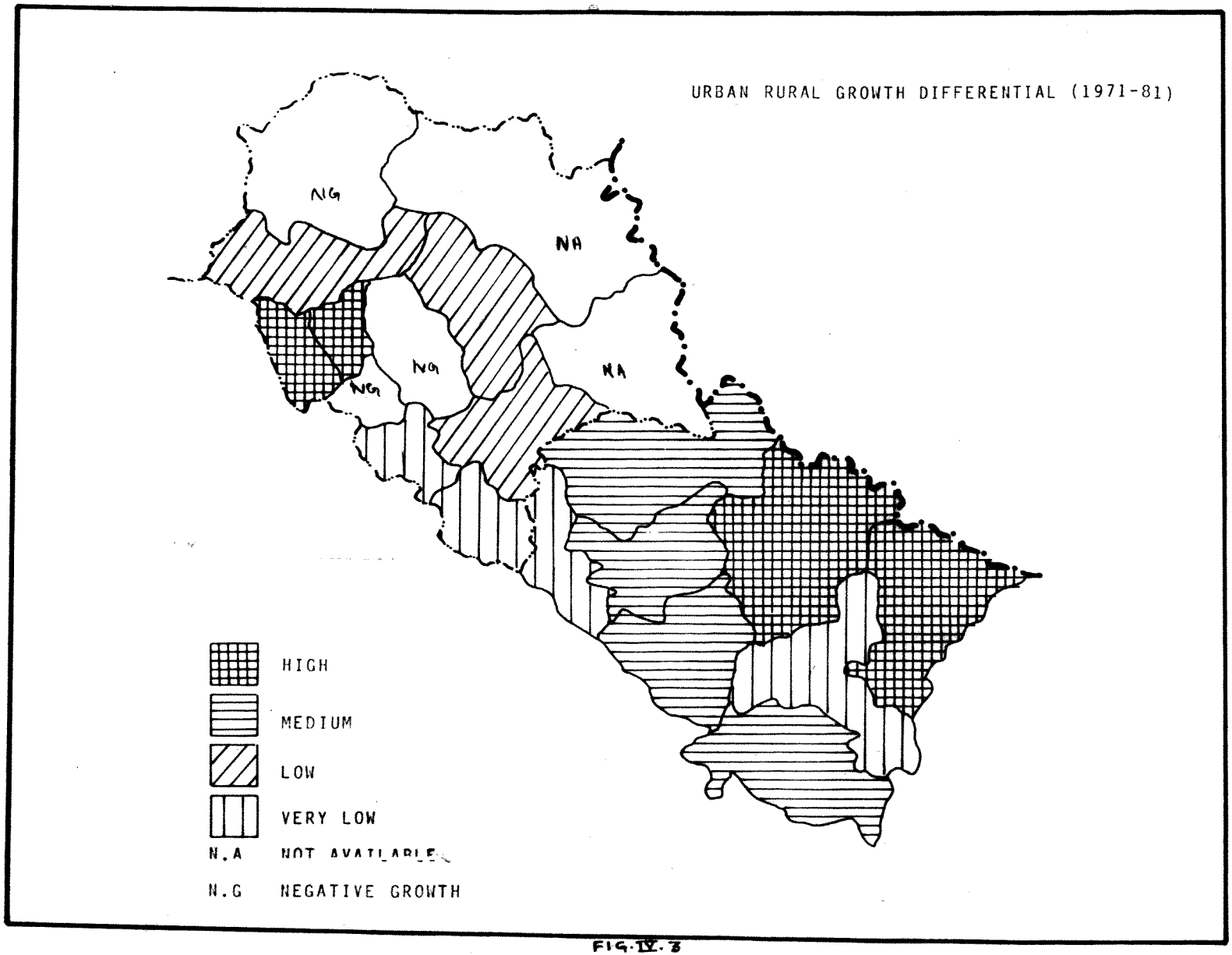
URBAN RURAL GROWTH DIFFERENTIAL (1971-81)
NG
NA
NG
NG
NA
HIGH
MEDIUM
LOW
VERY LOW
N.A NOT AVAILABLE
N.G NEGATIVE GROWTH

FIG. IV. 3

to see the tempo of urbanization. The measure advantage of this index presented here is that it does not tend to zero when country or region approaches the 100% however, it does regress towards the growth rate of urbanization.[10] Here in the index we are basically interested in the rate of change in the number of people living in urban areas in relation to the people residing in rural areas. If the growth rate of rural population is higher than urban grown rate, than the urban proportion will not increase and tempo of urbanization would not be there.

Table shows the urban rural growth differential at distric level. Highest difference in rural and urban rates has been found in Hamirpur district (13.20%) while lowest is found in Sirmaur district accounting (0.37%). Negative difference in Urban and rural rates have been observed in three district namely Mandi, Chamba and Bilaspur. Here in above three districts in Bilaspur and Chamba urban population has increased but because of higher rural growth in population than urban population, the proportion of urban population has been descreased, which led to negative URGD, but in Mandi district there was a substantial descrease in urban population during the decade which has caused very high

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10. Ibid P - 44.

negative URGD value. This significant descrease in urban population due to completion of project work in Pandoh and Sundar Nagar of Mandi district, which led heavy urban out migration from the city.[11]

The study shows that lowest rate is found in four districts namely Sirmaur, Tehri-Garhwal, Solan and Shimla. In five district medium rate is found, these are Kangra, Almora, Kullu, Nainital and Pithoragarh. The district Hamirpur has observed highest rate followed by Una, Chamoli, Uttarkashi, Garhwal and Tehri-Garhwal.

So the study shows that Hamirpur and Una in Himachal Pradesh and Chamoli and Uttarkashi in U.P. hills have observed in highest tempo of urbanization in the region. In these districts urban population has been manifold during the decade.

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11. Town Directory, Himachal Pradesh, census of India, 1981 P - 35.

4. Change in size of place of residence of the median Inhabitant (1971-81)

If the degree of urbanization is measured by the index of change in size of the place of residence of the median inhabitant, the tempo of urbanization is considered as the annual average rate of expoential change in that index.[12]

Given table IV.8 shows the change in size of place of residence of median inhabitant of region and sub-regional basis. In the region as a whole there is average annual rate of exponential change is -0.710, which is negative. This is because of emergence of many small terms, where population is very small.

In case of U.P. hills as a sub-region, average annual rate of exponential change is .00059, which is very low in comparison to the Himachal Predesh where average annual rate of exponential change is found .0025. This variation is again by the emergence of many tiny towns in the region. In U.P. hills the emergence of tiny towns accounted about 26 new towns in 1981 census. But in Himachal Pradesh compartevely few towns emerged in 1981 census, only 11 new towns have emergened in different district of Himachal Pradesh.

12- Goldstein, S & Sly, D., Op.cit, p.51

5. Change in the Mean city population size

Tempo of urbansization can be measured, by seeing the annual average rate of exponential change in mean city population size.[13]

Analyzing the annual growth rate of charge in the mean city population size, the higher growth rate of change is found in the district of Tehri - Garhwal. The annual average rate is found to be 0.080, which is very high compartively to second highest district. Tehri-Garhwal, followed by the Hamirpur (0.057), Garhwal (0.036), Uttarkashi (0.029) and Dehradun (0.026). Lowest annual average rate of change in mean city size is found in Pithoragarh (.004) district other are Mandi (0.005), Almora (0.008) Una (0.009) and Chamba (0.011).

The factors which have influnecd the change is mean city size population is the emergence of new towns. Where the size of towns is almost same and new towns are introduced in 1981, the changes have been large. But in those district where big towns already existed both in 1971 and in 1981 and same small new towns have emerged in 1981, they have not influenced very much to the mean city size. This can be seen in Dehradun district where Dehradun in biggest city with more than 1,00,000 population and in 1981 good number of small new towns

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13 - Goldstein, S. & Sly, D., op. cit., p.51

Table IV.8

Change in the mean city population size (1971-81)

District Name	growth rate (annual) (1971-81)
Chamba	0.011
Kangra	0.016
Hamirpur	0.057
Una	0.009
Bilaspur	0.019
Mandi	0.005
Kullu	0.016
Shimla	0.022
Solan	0.019
Sirmaur	0.022
Uttarkashi	0.029
Chamoli	0.012
Tehri-Garhwal	0.080
Dehradun	0.026
Garhwal	0.036
Pilharagarh	0.004
Almora	0.008
Nainital	0.021

came into existance, but the growth of change in mean size of city was not very much. Same incidence can be seen in case of Shimla and Nanital also.

6. The Distribution of Urban Population

One of the common way of looking into the size distribution of the urban population is through rank-size rule. Rank size rule regularity has been observed in many countries or region. It helps us in knowing whether there is some regularity governing the size distribution. It also helps in accessing the level of primacy in the urban system.

In the present study therefore the rank-size relationship has been observed for all the towns of the region except for class VI, because the number of class VI town is very high and calculation becomes too much complicated. In 1981 census 50 towns were in all five size class of towns and in 1971 there were only 37. The linear relationship between the ranks of cities and to size, commonly known as rank size-rule. Which can be written in its most general form

$$CK = C1 \cdot K^{-z}$$

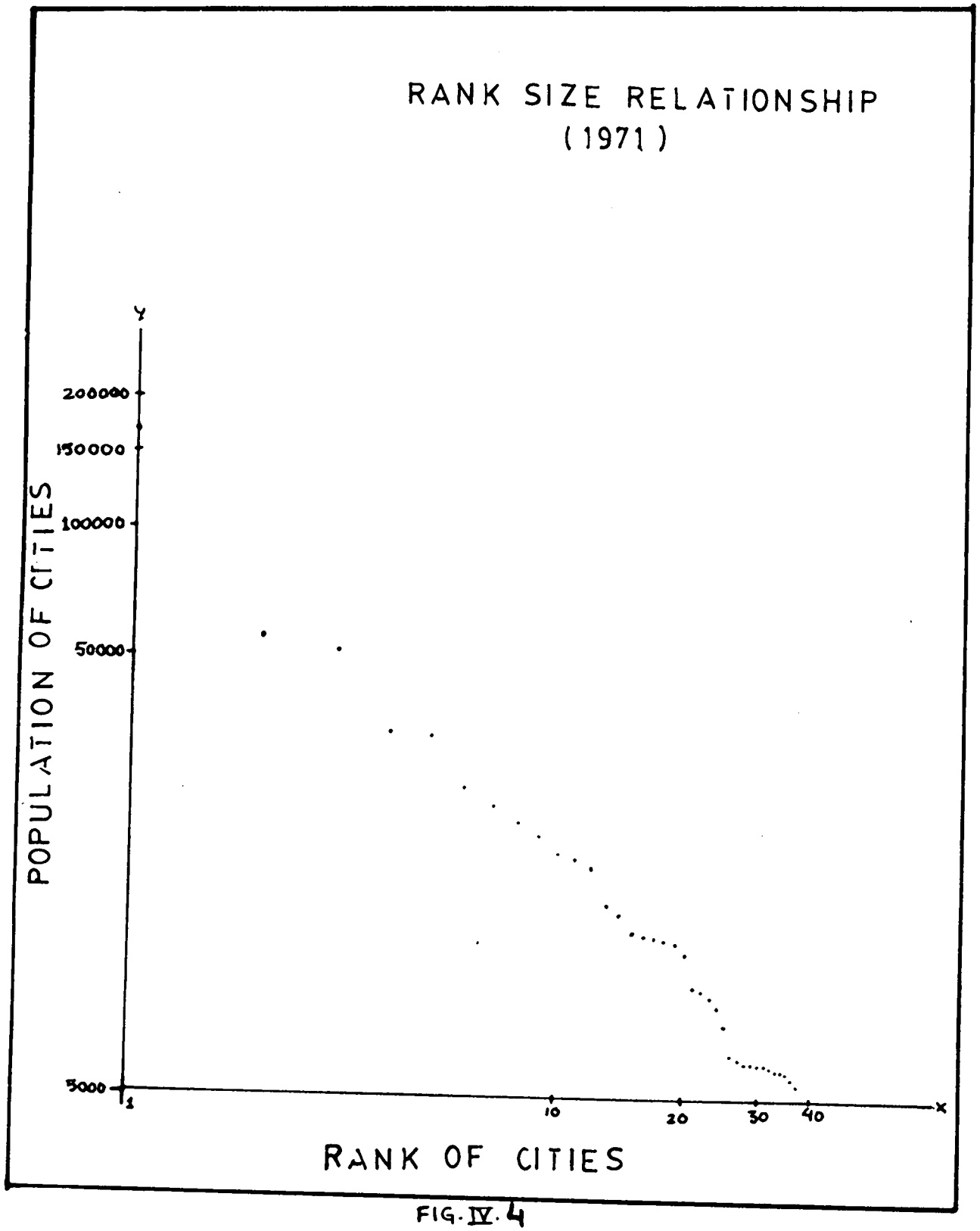
RANK SIZE RELATIONSHIP
(1971)
Y
200000
150000
100000
50000
5000
POPULATION OF CITIES
1
10
20
30
40
X
RANK OF CITIES

FIG. IV. 4

Where 'Z' is constant, C1 is the population of the largestcity and 'CK' represent the population of the city ranked in place 'K' from the largest to smallest. The rank size rule is an empirical regularity found in the urban system.[14]

The regularity of the relationship has been observed by 'Zipf'[15] and later by 'Berry'[16] in their study of urban system.

The value of constant 'Z' characterizes a city distribution; if the value of 'Z' is greater than the concentration of population in the largest cities is greater than to smallest cities. One can do the comparsion of 'Z' values at two time point. Here we are considering two time point of 1971 and 1981 census, then see the changes in 'Z' value.

Studing the 1971's situation there are only 37 towns and cities in our consideration (class I, II, III, IV, and V towns). The 'Z' value is found 0.9534, which shows high concentration of pupulation in large cities of the region. When we ahve estimated the population according

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14 - Mahmood, A., "Quantitative Methods in Geographical Studies," Rajest Publications New Delhi, 1986, P.77.

15 - G.K. Zipf; "National Unity and Disunity" ; Bloomington Ind: Principia press 1941.

16 - B.L.J. Berry; "City size Distribution and Economic Development", Economic Development and cultural change, IX No - 4, July 1961, PP - 573-588.

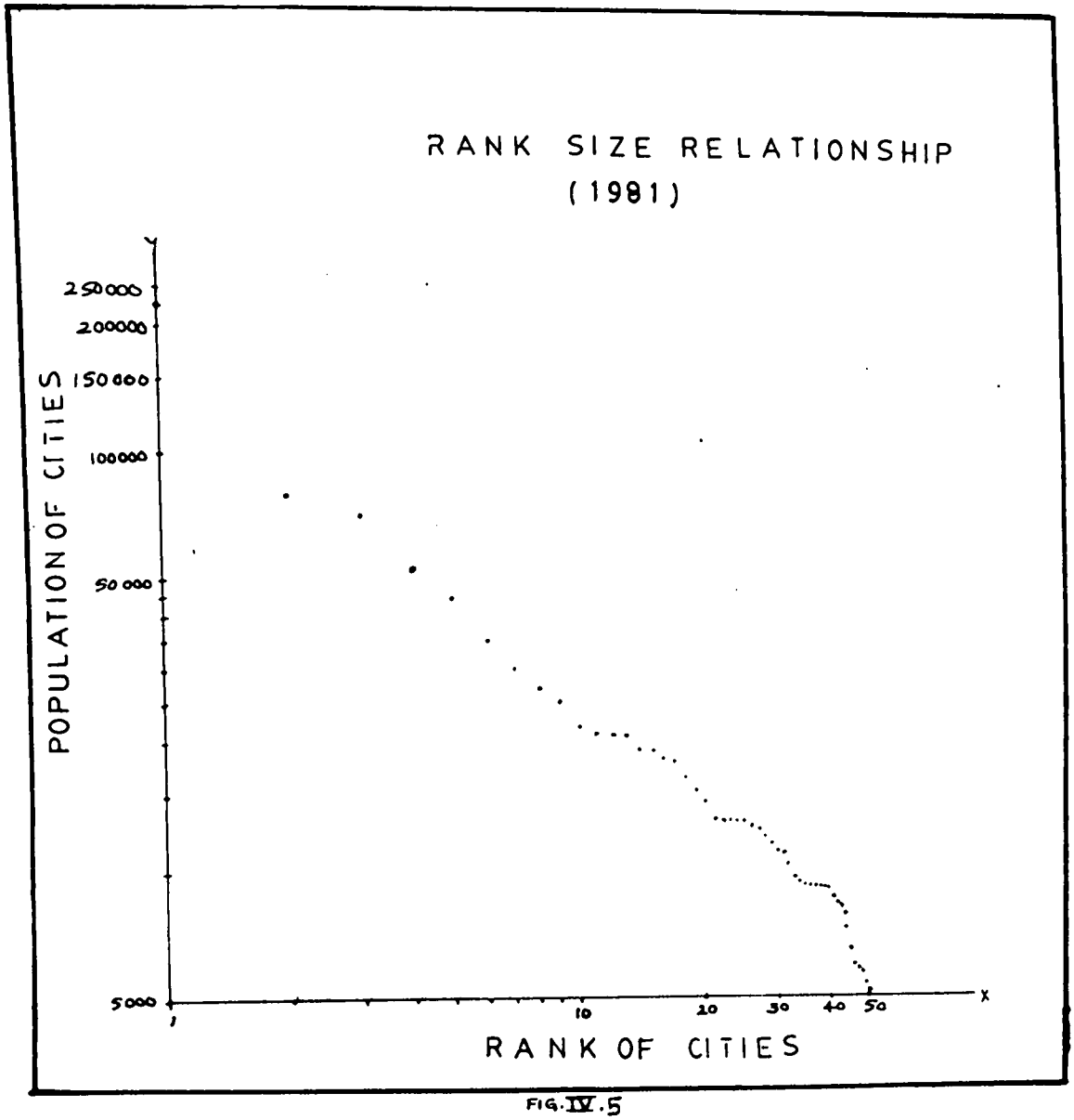
RANK SIZE RELATIONSHIP
(1981)
POPULATION OF CITIES
250000
200000
150000
100000
50000
5000
Y
X
1
10
20
30
40
50
RANK OF CITIES

FIG. IV.5

to rank size rule, very less variations have been found, between actual population and estimated population except second, third and fourth ranked towns.

Now see the 1981's situation, when the number of towns has increased by 13, 'Z' value is found to be 0.09129, which is stighly less than 1971's 'Z' value. So we can say that the concentration is large cities of the region has decreased from 1971 to 1981 census. Dispersion in urban population has been taking place, which has resulted in decline in 'Z' value.

The degree to which are urban system fits into rank size regularity can be measure by R^2, the coefficient of determination of the linear regression quate after double log transformation.

The values of R^2 have been worked out for 1971 and 1981 after taking a double log transformate of Pk and K. the value is found to be 0.823 in 1971 and .847 in 1981.

The third hypotheses regarding the regularity of system is found to be testified because during the 1971-81, R^2 is increasing which shows that over time the urban system is becoming move regular. The hypothesis regarding dispersion of urban population it has been found that dispersion is taking place. Hence the hypothesis stands validated.

(D) The Cencentration and Dispersion of urban population:

In the study of spatial distribution of any attribute, the study of concentration and dispersion has its own importance. The spatial distribution of a particular attribute is a result of multi dimensional interaction of its determinants. "As this process is dynamic and varies in space as well, we observe Concentration and dispersion in many of the spatial distributions."[17] The following methods have been considered in the study of urban concentration and dispersion and are widely used in geographical studies.

1. Index of Location Quotient,
2. Index of Gini's Coefficient of Concentration
3. Lorenze curve (Graphical Method)
4. Primacy Index

1. Index of Location Quotient: "when the proportion of any characterstic in are area is studies in relation to its proportion in the region, the ratio used is known as the Location Quotient"[18]

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17 - Mahmood, A., Opcit, P.104

18 - Ibid, P. 104

Table IV.9

Location Quotient of Urban population

Districts	1981	1971
Chamba	0.51	0.67
Kangra	0.37	0.39
Hamirpur	0.37	0.12
Una	0.57	0.35
Bilaspur	0.35	0.44
Mandi	0.55	0.84
Kullu	0.53	0.50
Shimla	1.17	1.31
Solan	0.80	0.90
Sirmaur	0.65	0.76
Uttarkashi	0.52	0.37
Chamoli	0.60	0.37
Tehri-Garhwal	0.31	0.24
Dehradun	3.64	422
Garhwal	0.73	0.56
Pilharagarh	0.41	0.34
Almora	0.47	0.47
Nainital	2.05	1.98

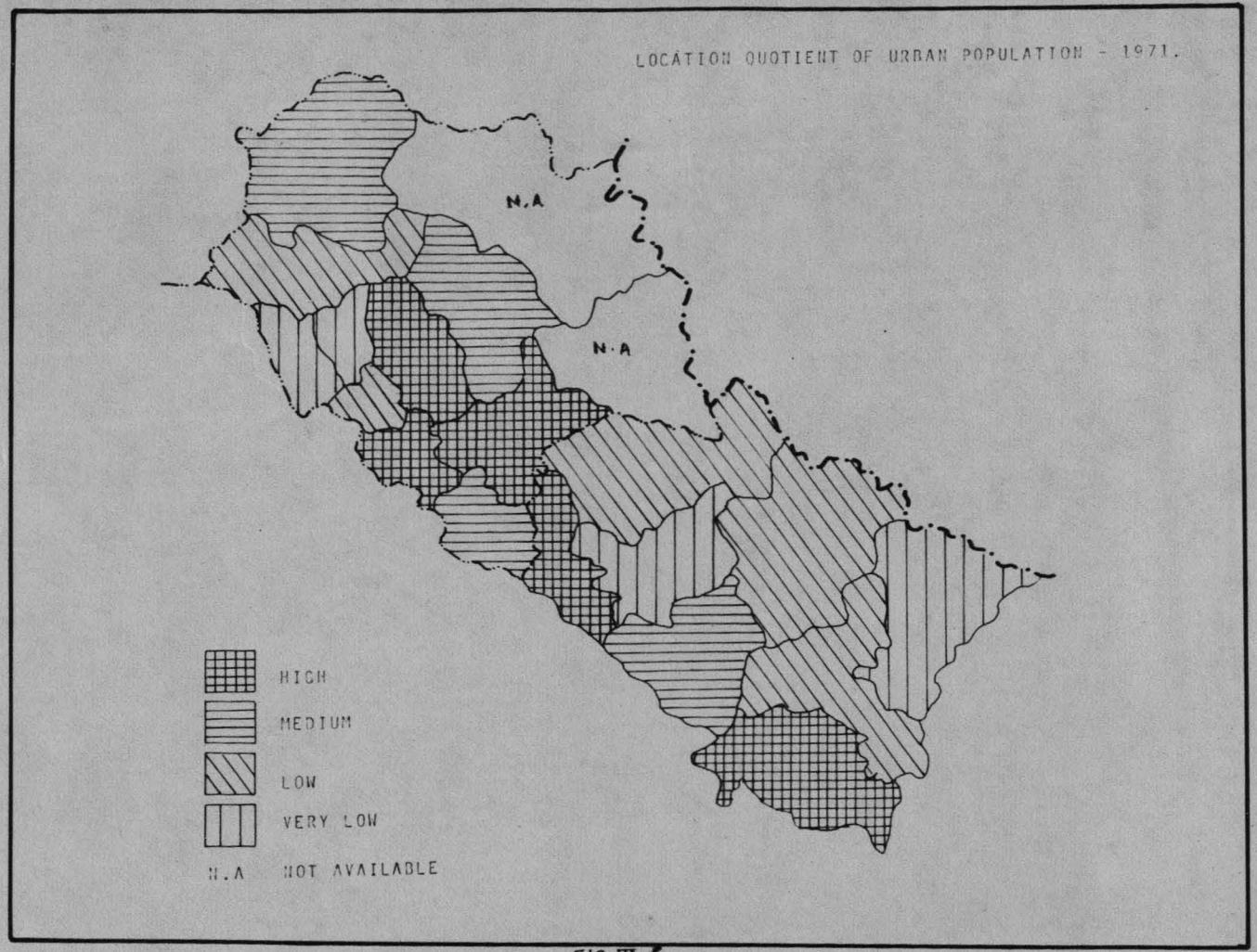
LOCATION QUOTIENT OF URBAN POPULATION - 1971.
N.A
N.A
HIGH
MEDIUM
LOW
VERY LOW
N.A NOT AVAILABLE

FIG. IV.6

The value of L.Q. indicates the relative concentration or dispersion of the attributes, if L.Q. is higher it means, higher relative concentration and if it is lower, it shows the relative low concentration or higher dispersion of the attribute in the region . The different values of L.Q. have been computed are given in the table IV.9. Analyzing the table, in 1971 Dehra Dun district has highest L.Q. value of 4.22, which is found very high in relation of other districts of the region, it is because about 33% of urban population is concentrated in the Dehra Dun district of total region's population,Shimla and Nainital are other district where L.Q. value is more than 1, it is found 1.31 and 1.98 respectively. There are nine district where L.Q. is found less than 0.50 and in othe six district are in between of 0.50 to 1.00 L.Q. value lowest concentration is found in Hamipur district (0.12) where only one class VI town is existing in 1971 consus. Other ditrict of lower concentration are Tehri Garhwal, Chamoli, Una, Pithoragarh and Knagra etc.

Now where we see the 1981 situation, then we found situation almost same. Dehra Dun, Nainital and Shimla ae still at top position holding with the L.Q. of 3.64, 2.05 and 1.1.7 respectively. Now only six district have L.Q. less the 0.50 instead of 1971 situation where nine

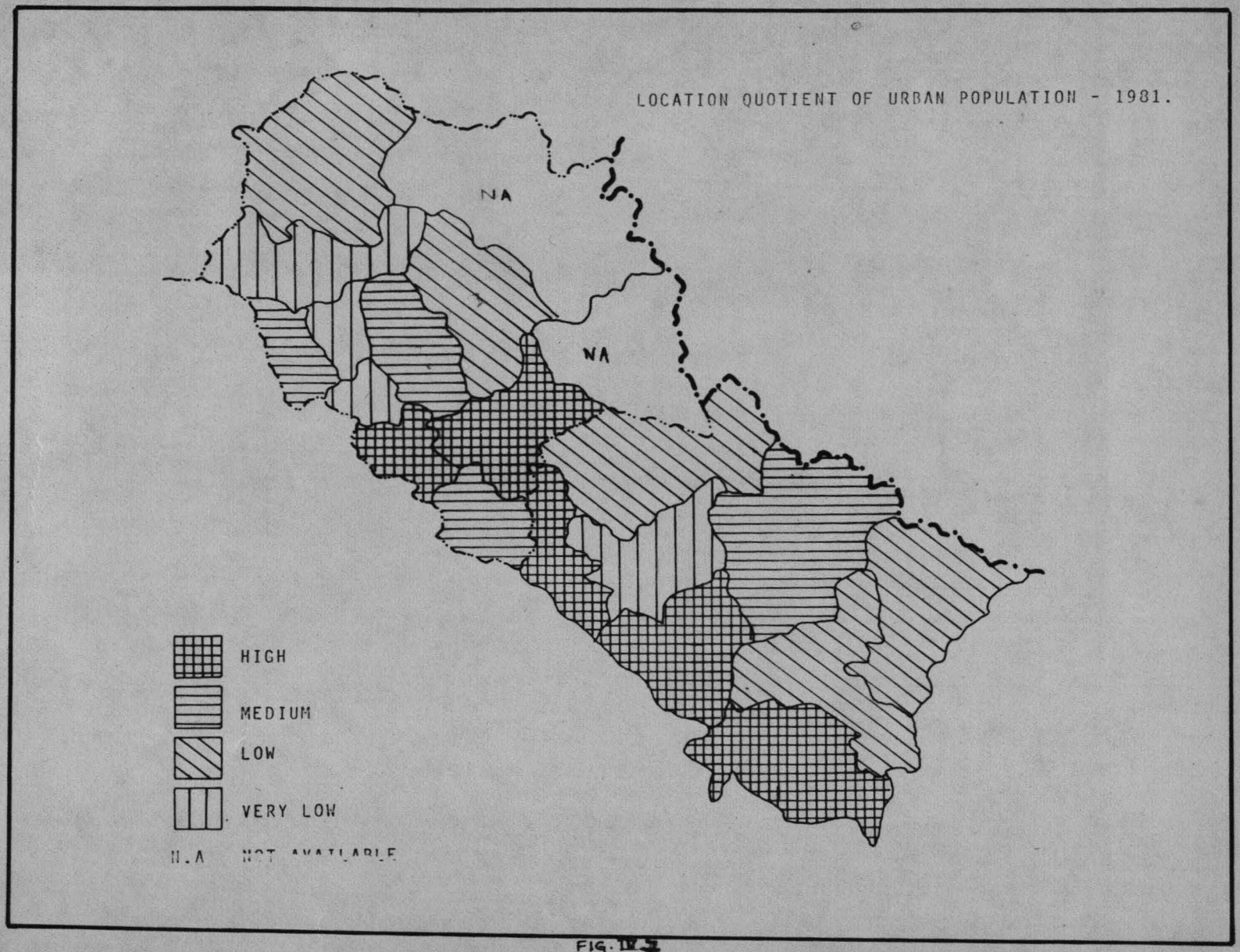
LOCATION QUOTIENT OF URBAN POPULATION - 1981.
NA
NA
HIGH
MEDIUM
LOW
VERY LOW
N.A NOT AVAILABLE

FIG. IV.7

district had L.Q. less than 0.50. Nine district have the L.Q. value more than 0.5 to less than 1.00, where ever in 1971 ther were only six district in this category.

If we compare the 1971 and 1981 situation of L.Q. value, than we can say that during these 10 years of dispersal in urban population has definitely taken place it is vey obvious by looking the charges in L.Q. values of 1971 and 1981 . The L.Q. value has declined in the district of Dehradun, Shimla by a good margin, but in Nainital it has increased. Dispersal of urban population is towards the districts of low concentration. For example in Hamirpur district L.Q. value in Una district from 0.35 to 0.60 and in Tehri-Garhwal from 0.24 to 0.31. These changes in L.Q. value show that concentrationof populationin particular district is decling and dispersal inincresing. Hence eyp (iii) is further supported.

(2) Lorenz Curve:- Lorrenz curve in Garphical method to represent the concentration of one vailable relative to other. The diagnal line of the graphic shows the lineof equal distribution. The dieviation of any curve from this diagenal s proportion to the level of inequality in the distribution of one attribute in relation to other[19]

19 - Mahmood, A., op. cit., P.109.

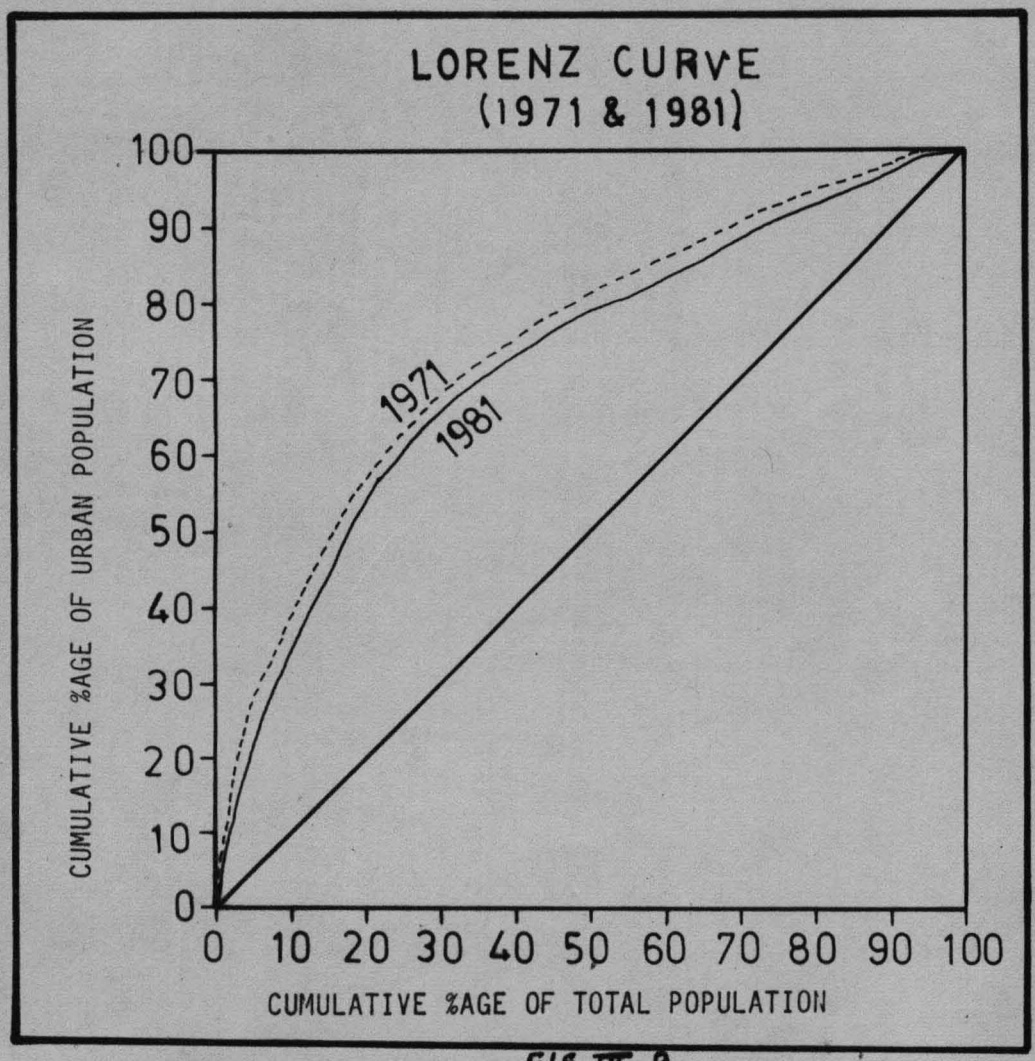
LORENZ CURVE
(1971 & 1981)
100
90
80
70
60
50
40
30
20
10
0
1971
1981
CUMULATIVE %AGE OF URBAN POPULATION
0 10 20 30 40 50 60 70 80 90 100
CUMULATIVE %AGE OF TOTAL POPULATION

FIG. IV.8

In the following graphic Lorenz curve shows the in equal distribution of urban population in relation total populationore space. The deviation of curve from the tene of equal distribution is high, which shows the high concentration of urban population in relation to total population of region own space. If we see the curve of 1971, then deviation is found higher in 1971 than 1981, which shows the decrease in enequality. But the variation is very-very nominal.

(3) Index of Gini's Cofficient of Concentration

Gini's cofficient of concentration is widely used measure in urban studies to all the concentration of one variable relative to another.[20] This concentration ratio can be shown graphicaly the lorienz Curve also (Diagaram). The uncentration can be however, numerically measured by Gini's constration ratio only. Higher value of the Gini's coefficient will show higher concentration of urban population and smaller value will show low or concentration of urban population.

Here, in 1971 census the index of Gini's coefficient for region is found 0.4849, it means the Concentration of urban population is higher relative to total population of the region. This high Concentration index is because in two district of Dehradun and Naintal

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20 - Goldstern, S. & sly, D., opcit. P.66, and Mahmood, A., op.cit, P.112-113.

alone comparises more than 55% of total urban population, but ony 18.22% of total population live in these two disticts. Which shows very high concentration of urban population in relative to total population of the region.

In 1981, the value of index of Gini's coefficient has slightly decrease. It has been found 0.4421, which is about 0.0428 less than 1971 Cencus. This value of index shows the dispersal of urban population relative to total population has taken place in course of time. The concentration of urban population in some districts like Dehradun and Nainital has declined in 1981. In 1981 Cencus, these two district have 2103% population of the total population of the region than only 18.21% in 1971. Urban concentration has also increased inthe district accounting about 56% of total urban population of the region, but comparativelyincrease in total population was higher which has lowered the value of Gini's Coefficient in 1981, with a very small margin.

(4) Primacy Index (1971 & 1981)

The concept of primate city is an empricial regularity established by an American geographer, Mark Jefferson who noted that in many countries the ratio of the population of the three largest cities approximated the sequence 100 : 30 : 20 (i.e. the third largest is one fifth the size of the largest)[21] This index is related to the rank size rule. Assuming that the

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21 Johnston R.J., (ed.), " The Dictionary of Human Geography" Basil Black well. publshers Ltd., 1981, p.271

exponent Z of the rank = one, the size of any city is equal to the largest city divided by its rank.[22] The greater the index value, the greater the concentration in the largest city.

Taking account of first four largest cities of region, primacy index in 1971 is found 1.18, which has declined in 1981 census, with index score of 1.10 It shows that the concentration in largest city has declined effectively. This decline in primacy index is because of comparatively higher growth in urban population of second, third and fourth largest city or townof the region.

It has been found that if we compare the largest city ot the next ten then this procedure may give better measure of primacy of the largest city since more cities or towns are included[23]. Comparing the largest city with next ten largest cities or towns in region, primacy index in 1971 is found 1.11. This primary index has declined in 1981, scoring 1.05 only. This again indicates the declining concentration of urban population in the largest city of the region. This decline may be attributed by comparatively higher growth inthe next ten largest cities or towns than the first largest city.

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22 Gold Stein S. & Sly, D., op.cit, p.63

23 Ibid p.64

CHAPTER V

DETERMINANTS OF URBANIZATION

The growth of urbanization can not be regarded as isolated, it has complementarity with number of factors. In this section of study interrelationships between growth of urbanization and growth of some selected explanatory variables are analysed. This relationship between the indicators of growth of urbanization and explanatory factors has been studies using the techniques of correlation and regression analysis. In the application of regression analysis stepwise approach has been utilized to avoid the problem of multicollinearity.

The variables which explain urbanization may vary from situation to situation. The machanism behind a mere primate type of metropolitan urbanization may involve complex intraction of industrial growth, interregional trade exchanges, flow of funds etc. It may also involve in some cases the internation exchanges etc. In case of hill areas and specially in Central Himalayan region, the factor behind the urbanization may be highly localised. In this region the level of urbanization is quite low. There are not very large cities, the nature of services and economic base of the urban centres are very simple. Such type of urbanization is also well rooted into the primary economic activities of the people in the surrounding areas.

For this study therefore explanatory variables have been collected from all the three sectors of the economy viz., Primary, Secondary and Tertiary as well as some other variables related to development. The list of the variables is as given following :

(1) Dependent Variable

(a) Growth of urban population during 1971-81 (Y_1)

(b) Urban-rural growth Differential during 1971-81 (Y_2)

(2) Explanatory Variables

(i) Primary Sectors

(a) Growth in Gross Area Irrigated during 1971-81 (X1)

(b) Growth in Gross Area Sown during 1971-81 (X2)

(c) Growth in Crop Intensity during 1971-81 (X3)

(d) Growth in Area under Fruit & Vegetable during 1971-81 (X4)

(e) Growth in Labour Productivity during 1971-81 (X5)

(f) Growth in yield per hectare during 1971-81 (X6)

(g) Growth of workers in Agriculture during 1971-81 (X7)

(h) Growth of Workers in Livestock, Factory, Orchard, Fishing etc. during 1971-81 (X8)

(ii) Secondary Sectors

(i) Growth of workers in Mining & Quarrying during 1971-81 (X9)

(j) Growth of Workers in Household & other than Household industry during 1971-81 (X10)

(k) Growth in Number of non-agricultural enterprises during 1971-81 (X11)

(l) Growth in Number of Agricultural Enterprises during 1971-81 (X12)

(iii) Tertiary Sector

(m) Growth of Workers in Trade & Commerce during 1971-81 (X13)

(n) Growth of Workers in Construction during 1971-81 (X14)

(o) Growth of Workers in Transport, Storage & Communication during 1971-81 (X15).

(p) Growth of Workers in other services during 1971-81 (X16)

(iv) Other Variables

(q) Growth in Male literacy during 1971-81 (X17)

(r) Growth in rural to urban migration during 1971-81 (X18)

(s) Growth in number of electrified villages during 1971-81 (X19)

Now, the study is divided in three parts viz., Variability in the dependent and explanatory variables, Correlation analysis and stepwise linear regression analysis.

Table V.1 shows the internal variability and mean values of the variables. Mean for growth of urban population (Y1) and urban-rural growth Differential (Y2) has been found high with 77.48 and 55.22 respectively, standard deviation and coefficient of variation are found to be higher for dependent variables.

Table V.1

Mean, Std., Deviation and C.V. of Variables

Variable	Mean	Standard Deviation	Cofficient of Variation
Y1	77.48	77.66	100.24
Y2	55.22	80.45	145.69
X1	12.31	26.31	213.84
X2	1.98	12.87	649.19
X3	-.199	5.61	2812.22
X4	238.34	546.25	229.19
X5	25.19	25.52	101.30
X6	39.04	35.06	89.80
X7	9.165	26.89	293.37
X8	37.38	72.04	192.71
X9	3905.20	11463.18	293.54
X10	964.15	2683.96	278.38
X11	49.91	20.03	40.14
X12	58.26	33.24	57.06
X13	75.32	56.76	75.35
X14	549.67	859.93	156.44
X15	109.21	108.10	98.99
X16	-.75	40.29	5340.98
X17	30.89	12.75	41.27
X18	64.32	51.54	80.12
X19	4034.01	7729.45	191.61

Among the explanatory variables highest coefficient of variation is found in the variable of growth of workers in other services (X16) followed by growth in crop intensity (X3); growth in gross area sown (X2) and growth of Workers in Mining & quarrying (X9).

Variability is not very high in all the explanatory variables except for some variable. Out of 19 explanatory variables, about seven variables (X6, X11, X12, X13, X15, X17, X18) have coefficient of variation less than 100%, four variables (X5, X8, X14, X19) have coefficient of variation from 100% to 200%. Other eight explanatory variables have coefficient of variation higher than 200%. In some case like X3, X2, X16, coefficient of variation is very high.

Correlation Among the Variables

Table V.2 shows the correlation coefficient among all the variables included in this study. In very few cases the value of coefficient of correlation is found significant. Firstly correlation between dependent variable growth of urban population (Y1) and explanatory variables (X1, X2, ...X19) shows that only four explanatory variables have statistically significant correlation. These are growth in area under fruit & vegetables (X4) growth of workers in livestock, forestry

Table No. V.2

Correlation Matrix of variables taken for study.

	Y1	Y2	X1	X2	X3	X4	X5	X6	X7	X8	X9
Y1	1.00	.998***	.109	.085	-.161	.805***	.041	-.149	-.055	.488**	-.195
Y2		1.00	.078	.051	-.194	.789***	.012	-.159	-.075	.489**	-.187
X1			1.00	.152	.491**	-.057	.649***	.417**	.120	-.276	-.317
X2				1.00	.554**	.275	.349	.224	.418*	.113	-.315
X3					1.00	-.215	.105	.462**	.508**	-.147	-.184
X4						1.00	.182	-.187	-.124	.431*	-.144
X5							1.00	.278	-.232	-.122	-.417*
X6								1.00	.470**	-.154	-.037
X7									1.00	.052	.212
X8										1.00	-.229
X9											1.00
X10											
X11											
X12											
X13											
X14											
X15											
X16											
X17											
X18											
X19											

*** 1% level of significance

** 5% level of significance

* 10% level of significance

Degree of freedom = (n-k) = (18-2)=16

	X10	X11	X12	X13	X14	X15	X16	X17	X18	X19
Y1	-.198	.314	-.255	.460*	-.157	.317	.126	-.241	.726***	.178
Y2	-.199	.318	-.237	.476**	-.155	.319	.108	-.241	.727***	.213
X1	-.161	.231	.116	-.097	-.195	-.285	.208	-.247	.164	-.328
X2	-.143	.196	-.404*	.285	-.280	.271	.390	.232	.180	-.012
X3	-.003	.300	-.011	-.143	-.094	-.222	.179	.273	-.051	-.286
X4	-.152	.074	-.372	.283	-.144	.472**	.204	-.082	.476**	.002
X5	-.368	-.113	-.125	.143	-.348	.162	.441*	-.236	.059	-.125
X6	.178	-.327	-.006	-.308	.079	-.349	.038	-.124	-.164	-.256
X7	.591***	.131	-.135	-.316	.451*	-.212	-.293	-.059	.051	.034
X8	-.122	.290	-.021	.500**	.128	.186	-.011	-.164	.251	.146
X9	.825***	.281	-.336	-.689***	.625***	-.308	-.804***	.081	-.202	-.164
X10	1.00	-.187	-.238	-.752***	.553**	-.354	-.867***	-.044	-.116	-.174
X11		1.00	-.033	.209	-.264	-.191	.064	.232	.228	-.054
X12			1.00	.123	-.196	-.089	.193	.040	-.067	-.020
X13				1.00	-.584**	.605***	.619***	-.218	.483**	.592***
X14					1.00	-.061	-.710***	-.137	.054	-.057
X15						1.00	.510**	-.142	.551**	.460*
X16							1.00	.006	.134	.166
X17								1.00	-.245	-.403*
X18									1.00	.196
X19										1.00

etc (X8), growth of workers in trade and commerce (X13) and growth in rural to urban migration (X18). These variables have significant correlation at 1%, 5% 10% and 1% level of significance respectively. In case of urban-rural growth differential (Y2) also same variables are found to have statistically significance coefficient of correlation at different levels of significance.

Looking the interrelations among explanatory variables, we find that growth in crop intensity (X3) has significant correlation with growth in gross area irrigated (X1) and growth in gross area sown (X2) at 5% and 10% level of significance respectively. Variable of growth in area under fruit & vegetables (X4) has no significant relationship with any other explanatory variables. Growth in Labour Productivity (X5) has got significant correlation with growth of gross area irrigated (X1) at 1% level of significance. Explanatory variable of growth in yield per hectare (X6) has positive relationship with growth in gross area irrigated (X1) and growth in crop intensity at 10% level of significance, while growth of workers in agriculture (X7) has positive relationship with three independent variables, are growth in gross area sown (X2), growth in crop intensity (X3) and growth in yield per hectare (X6) at 10% and 5% levels of significance respectively. Variable Growth workers in livestock, forestry etc. has positive correlation with only one variable growth in area under fruit and vegetable (X4) at 10% level of significance.

Examining the correlation in secondary sector, it is found that growth of workers in mining & quarrying (X9) has significant relationship with growth of workers in Household & other than household industry (X10) at 1% level of significance. It has negative correlation with variable growth of workers in trade & commerce (X13) and positive correlation with growth of workers in construction (X14) significant at 5% level of significance with each. Variable growth of workers in other services (X16) has high negative correlation with growth of workers in mining & quarrying (X9), significant at 1% level of significance.

Growth of workers in Household & other than household industry (X10) has significant positive correlation with growth of workers in agriculture (X7) and growth of workers in mining and quarrying (X5) at 1% level of significance. Again growth in number of non-agricultural enterprises (X11) has insignificant relationship with all other explanatory variables. Variable growth in number of agricultural enterprises X12) has negative correlation with growth in gross area sown (X2) significant at 10% level of significance.

Correlation with the variable of growth of workers in tertiary sector, higher number of significant relationship is found with this variables. Growth of workers in

trade and commerce (X13) has significant positive relation with growth of workers in livestock, forestry etc (X8) at 5% level of significance, but with growth of workers in mining and quarrying (X9) and growth of workers in household & other than household industry (X10), it has been found significantly negatively correlated at 1% level of significance. The growth of workers in construction (X14) has significant positive correlation with three variables viz., growth of workers in Agriculture (X7), growth of Worker in household & other than household industry (X10) at 5% and 1% level of significance respectively. Growth of workers in trade and commerce (X13) has significant negative correlation with growth of worker in construction (X14) at 5% level of significance. Variable of growth of worker in transport, storage and communication (X15) has significant positive relation only with two variable namely growth in area under fruit & vegetables (X4) and growth of worker in Trade and Commerce (X13) at 5% and 1% level of significance respectively. Growth of workers in other services (X16) has significant correlation with six variables, these variables namely are growth in area under fruit & vegetable (X4), growth of worker in trade and commerce (X13) and growth of worker in construction (X15), significant at 10%, 1% and 5% level of significance respectively. Other three variables are i.e. growth of workers in mining & quarrying (X9), growth of workers in household & other than household industry (X10) and growth of workers in construction (X14) are found negatively significant at 1% level of significance.

In the category of other variables, three variables related to growth in male literacy (X17), growth in rural to urban migration (X18) and growth in number of electrified villages (X13) have been taken for study. In the case of growth of male literacy, coefficient of correlation is found insignificant with all other variables. Growth in rural to urban migration has positive correlation with variable of growth in area under fruits & vegetables (X15) and is statistically significant at 5% level of significance. The last variable, growth in number of electrified villages (X19) has significant positive correlation with growth of workers in trade and commerce (X13) at 1% level of significance. Negative correlation is found with the growth of workers in transport, storage and communication (X15) and growth in male literacy (X17) significant at 10% level of significance.

Between the dependent variable growth of urban population (Y1) and urban-rural growth differential (Y2), correlation is found very high significant at 1% level of significance.

Determinants of Urbanization

After examining the inter correlation among all the variables, we have found that apart from good correlation

between the urbanization and its explanatory variables, there is good correlation among explanatory variables also. This kind of intercorrelation generates the problem of multicollinearity. The problem of multicollinearity puts many constraints on the stepwise linear regression analysis which can be avoided through the stepwise approach of regression analysis.

Stepwise regression analysis is careful to know as to .... how the parametres get changed when new variables are added, one by one, in the model. In this analysis one can tell the contribution of the added variable in explaining the dependent variable. This explanation can be found out by seeing the changes in the value of coefficient of determinants (R^2). Another advantage of this model is that it helps us in keeping a watch over the changes in the values of the regression coefficient and their standard errors. From this model we can see whether the new variable is worth including in the model or not, by seeing the changes in the value of $\bar{R}^2$

$\bar{R}$ is the multiple correlation adjusted for degress of freedom. When the addition it by a variable, $\bar{R}$ is sufficiently larger than $\bar{R}$ will increase with R^2. However if the contribution to R^2 by an added variable is marginal, R^2 will increase but $\bar{R}$ may decrease. The variable which causes a decrease in $\bar{R}$ may not be included in the analysis.

Table V.3

Step wise linear Regression Analysis to explain the growth of Urban population (Y1)

Step	Function	R^2	Increase in R^2	R^{-2}	F - Ratio
1.	Y1=f(X4)	.648	-	.648	29.466***
2.	Y1=f(X4+X18)	.800	0.152	.788	30.005***
3.	Y1=f(X4+X18+X15)	.867	0.067	.850	30.521***
4.	Y1=f(X4+X18+X15+X19)	.929	0.062	.914	42.577***
5.	Y1=f(X4+X18+X15+X19+X10)	.952	0.023	.937	47.409***
6.	Y1=f(X4+X18+X15+X19+X10+X14)	.961	0.009	.945	45.592***
7.	Y1=f(X4+X18+X15+X19+X10+X14+X5)	.965	0.004	.947	39.862***
8.	Y1=f(X4+X18+X15+X19+X10+X14+X5+X6)	.968	0.003	.946	34.049***

*** 1% levelof significance

Table V.3 shows the results of the stepwise muliple linear regression analysis of the growth in urban population (Y1). The given results show that the growth in area under fruits & vegetables (X4) explains the maximum proportion of variation in growth of urban population (Y1) it is 0.648 or 64.8%. It is followed by growth in rural to urban migration (X 18), growth in workers in transport and communication (X15), and growth in number of electrified villages (X19). Dependent variable of growth in urban population (Y1) is further explained by the growth in workers in household & other than household industry (X10), growth in workers in construction (X14) and growth in labour productivity (X5). Next variable which increases the value of (R^2) is growth in yield per hectare (X6).

A study of R^{-2}, however shows that though the contribution of growth in labour productivity is very poor in R^2, but it can be retained in the analysis as it has caused a marginal increases in R^{-2} by 0.004. The value of R^{-2} decreases as the next variable growth in yield per hectare and subsequent variables are included in the model. This shows that their contribution in increasing the value of R^2 is not so strong enough to counter balance the reverse effect of the explanatory power of the model due to decrease in degree of freedom (n-k). Hence, it is better not to carry out the analysis beyond the 7th step. If we see the increase in R^2 we find that in the

explanation, second variable growth in rural to urban migration (X18) includes second highest explanation of 0.152, followed by growth of workers in transport, storage & communication (X15), of 0.067, growth in number of electrified village (X19) of .062, growth of worker in construction (X10) of 0.023. The last variable of the table gives the explanation of .003 is growth in yield per hectare (X6).

The value of F-ratio is found highly significant at all the steps of the analysis. Thus the relationship is given in all steps may be identified as an optimal fit.

Table V.4 shows the multiple linear regression analysis of urban-rural growth differential (Y2). Explanation by explanatory variables has been found very high (0.967) of regression analysis of urban - rural growth differential.

Table shows that growth in area under fruit & vegetables (X4) again explains the maximum proportion of variation in urban - rural growth differential (Y2). The determinant of coefficient is found 0.622 or 62.2%. X4 variable is followed by the variables of growth in rural to urban migration (X18), growth in workers in transport, storage & communication (X15), and growth in number of electrified villages (X19). Urban-rural growth

Table V.4

Step-wise Linear Regression Analysis to explain Urban-Rural growth differential (Y2)

Step	Function	R^2	Increase in R^2	$\bar{R}^2$	F. Value
1.	Y2=(X4)	.622	-	.622	26.301***
2.	Y2=(X4+X18)	.781	0.159	.768	26.817***
3.	Y2=(X4+X18+X15)	.845	0.064	.824	25.451***
4.	Y2=(X4+X18+X15+X19)	.925	0.080	.909	40.256***
5.	Y2=(X4+X18+X15+X19+X10)	.948	0.023	.932	43.810***
6.	Y2=(X4+X18+X15+X19+X10+X14)	.958	0.010	.941	41.833***
7.	Y2=(X4+X18+X15+X19+X10+X14+X5)	.965	0.007	.946	39.741***
8.	Y2=(X4+X18+X15+X19+X10+X14+X5+X7)	.967	0.002	.945	33.369***

*** 1% level of significance.

differential(Y2) is further explained by the variable growth in workers in household & other than household industry (X10), growth in workers in Construction (X14), growth in labour productivity (X5) and growth in workers in agriculture (X7).

Again in the stepwise regression analysis of urban-rural growth differential (Y2) after seventh step the value of $\bar{R}^2$ decreases which shows that the contribution of growth of workers in agriculture (X7). The value of R^2 is increasing but it is not strong enough to counter balance the reverse effect on the explanatory power of the model due to decrease in the degree of freedom. So after the seventh step it is better not to carry out the analysis beyond the 7th step.

Looking at the increase in R^2, growth in area under fruit & vegetable (X4) have highest explanation of 62.2%, second highest value of R^2 increase by growth in rural to urban migration (X18) of 15.9%, followed by growth in number of village eletrified (X19), growth in workers in transport storage & communication (X15) etc.

The value of F-ratio is to be found highly significant at 1% level of significance through all the steps. The F-ratio value has been found very high in case of 4th, 5th, 6th and 7th steps of analysis.

After identifying the variables which optimally explain the growth of urban population (Y1) and urban rural growth differential (Y2) and their relative contribution to the explanatory power of the model, we look into other summary statistics of the regression model. The regression coefficient of each of the explanatory variable its standard error and computed F-value are given in table V.5 for growth in urban population (Y1) and table V.6 for urban-rural growth differential (Y2) along with the intercept and value of R^2

The tale V.5 shows that regression coefficient of four of the explanatory variable are found significant at 1% level of significance. These are growth in area under fruit & vegetables (X4), growth in rural to urban migration (X18), growth in workers in passport, storage and communication (X15) and growth in number of electrified villages (X19). The variable growth of workers in household & other than household industry (X10) is found to be significant at 5% level of significance. Other variable growth of workers in construction (X14), growth in Labour productivity (X5) and growth in yield per hectare are found to be insignificant. R^2 value is found .968, means 96.8% explanation of growth in urban population has been given by above explanatory variables. Out of eight explanatory variable, three are negative and

Table V.5

Result of the Regression Analysis to explain growth of Urban population (Y1)

	Regression Cofficient	Y1 Std. Error of Regression Cofficient	T - Value
x4	0.11647	0.01131	10.298***
x18	0.86534	0.11464	7.298***
x15	-0.44028	0.07643	-5.761***
x19	0.00292	0.00073	4.003***
x10	-0.01169	0.00433	-2.697**
x14	0.01948	0.01288	1.512
x5	-0.29359	0.22184	-1.323
x6	0.13350	0.15567	0.858

R^2 = 0.968

F.ratio = 34.049

Intercept = 33.11021

*** 1% level of significance

** 5% level of significance

among them only two are significantly related with growth of urban population (Y1). Other variables are positively related.

How the explanation by explanatory variables to dependent variable of growth in urban population (Y1) shows that if we increase one unit of growth in area under fruit and vegetable (X4), the increase in growth of urban population will be 0.11647 unit. The highest increase is observed by growth in rural to urban migration where one unit increase in explanatory variable increases 0.86534 unit of growth in Urban population (Y1). In case of growth of workers in transport, storage and communication shows than one unit increase in variable decreases -0.44028 unit in growth of urban population. Again negative relationship is found with growth of workers in household & other than household industry (X10). Increase of one unit in growth in number of electrified village, increases 0.00292 unit in growth of urban population (Y1).

Similar results for urban-rural growth differential of population are given in table V.6. The table shows that five explanatory variables are statistically significant at different level of significance. Three variables i.e., growth in area under fruits & vegetables (X4), growth in rural to urban migration (X18), growth of workers in

transport , storage and communication (X15) and growth in number of electrified villages (X19) are found to be significant at 1% level of significance. Fifth variable growth in workers in household & other than household industry (X10) has been found to be significant at 10% level of significance. Other variables are found to be insignificant. Two variable X15 and X10 are found negatively significant as found in the case of Y1 dependent variable.

Studying the regression coefficient, urban-rural growth differential of population (Y2), it has been found that an increase of one unit in variable growth in area under fruit & vegetable (X4), there is 0.11703 unit increase in urban-rural growth differential. Highest increase in growth in rural to urban migration (X18). Urban-rural growth differential (Y2) is found decreasing by - 0.48217 unit when we increase one unit of growth in workers in transport, storage and communication (X15). Lowest increase in URGD (Y1) is observed 0.00347 unit, when we increase one unit of growth in number of electrified villages (X19). Again negative relation is found between URGD (Y2) and growth in workers in household & other than household industry (X10) where with the unit of increase in explanatory variable, URGD (Y2) decreases by - 0.01049 units. Growth in labour productivity (X5) and growth of workers in agriculture (X7) have also negative

Table V.6

Result of the Regression Analysis to explain Urban-Rural growth Differential (Y2)

	Regression Cofficient	Y2 Std. Error of Regression coffićient	T - Value
X4	0.11703	0.01186	9.870***
X18	0.9337	0.12305	7.586***
X15	-0.48217	0.07819	-6.167***
X19	0.00347	0.00077	4.480***
X10	-0.01049	0.00499	-2.103*
X14	0.01863	0.01369	1.361
X5	-0.29742	0.21252	-1.399
X7	-0.17930	0.23638	-0.759

R2 = 0.967

F. ratio = 33.369

Intercept = 14.97380

*** 1% level of significance

* 10% level of significance

association with URGD (Y2) variable of growth of workers in construction has positive relation with the URGD (Y2), having the 0.01863 unit increase in URGD (Y2) when we increase one unit of growth in workers in construction (X14). So in all the cases regression coefficient are found to be very low in the region.

Testing the hypothesis that agriculture and service sector have dominant role in the process of urbanization, it has been found that in the regression maximum explanation is given by explanatory variable related to agriculture and service sector. In the analysis of regression coefficient also variables taken from agricultural and service sector give the maximum explanation for the dependent variables so the above given hypothesis is found to be significant.

The hypothesis is found to be validated in case of growth in rural to urban migration. The variable plays an important role in the process of urbanization. In the model of regression analysis this variable has been found to be second most dominant variable with second highest explanation for both dependent variable Y1 and Y2. In the both model, the variable growth in rural to urban migration has highest value of regression coefficient accounting 0.86534 and 0.9337 respectively.

CHAPTER - VI

SUMMARY AND FINDINGS

The present study was aimed to study the pattern and characteristics of Urbanization in the Central Himalayan Region comprising Himachal Pradesh and districts of Uttar Pradesh Hills. This study has further analyzed the variables responsible for the growth of urban population and urban-rural growth differential. To see the process of urbanization in the region variable related to three sectors of economy have been taken with some other variables related to development.

In the first part of the analysis pattern and characteristics of urban population have been analyzed. Characteristics of urban population have been grouped into three part i.e., demographic, social and economic characteristics. Two time point (1971-1981) has been considered for the analysis. In case of indices of urban growth, the study looked on the growth from 1901 cencus to 1981 census. In this course of study it has been found that many districts did not have any urban population in 1901 census. The changing pattern of urban population during 1971-81 has characterised by many factors. Second sector of the first part deals with the measurement of urabnization, there measurements have been grouped in three category i.e. Degree of Urbanization, Tempo of

Urbanization, Distribution of Urbanization and Concentration and Dispersion of Urban population. Several methods have been used to see the process of Urbanization.

Second part of the analysis dealt identification of the different explanatory variables for the process of urbanization. The growth of different variables have been worked out to see the effect on growth of urban population and urban-rural growth differential.

Correlation analysis has been carried out to see the relationship between the explanatory variable and dependent variables and also among explanatory variables. In further course of study multiple regression analysis is worked out to find the most responsible variables for the process of urbanization in the region.

Major Findings of the Study : In the third chapter namely "Pattern and Characteristics of Urban Population" it has been observed that within the region there are lot of temporal and spatial variation. Among the demographic variables, there have been significant spatial variation as well as temporal variation in the characteristic of urban population. Percent of urban population to total population has increased in almost all the districts of the region except the Chamba and Mandi district. Highest increase has been observed in Hamirpur, Una, Tehri-Garhwal

and Pithoragarh districts. In Mandi and Chamba districts percent urban population have decreased. This decrease may be because of higher rural growth than urban growth and urban out migration, respectively in the districts. In the spatial variation it has been found that some few districts like Dehradun and Nainital have high percentage of urban population while other all the districts have very low percentage of urban population to total population.

In the distribution of urban population in different districts to total urban population of the region, it has been found that about more than 50.0% urban population of the region is in only two district namely Dehradun and Nainital.

Dehradun, Garhwal and Nainital districts have highest growth in urban population during 1901 to 1981 census. Many districts did not have any urban population in 1901 viz., Pithoragarh, Tehri-Garhwal, Chamoli, Uttarkashi, Kullu and Hamirpur districts. Lowest growth has been found in district of Chamba during 1901 to 1981.

Urban population is distributed in different size class towns for whole region has been found very balanced. At district level no district has all size class towns,

Himachal Pradesh does not have class one city. Only one class one city is Dehradun in the whole region. Slight variation in distribution of urban population in different size class towns have been observed between 1971 and 1981, but it is only marginal.

Sex ratio (female per 1000 males) has been found low in both the censuses of 1971 and 1981, but improvement has been observed in all the district in 1981, except the districts of Shimla, Solan Uttark-ashi, Tehri-Garhwal and Pithoragarh where sex ratio has decreased in 1981.

Negative growth in urban densities have been found in many district. There are 15 districts where growth in urban densities are found negative. Highest negative growth in urban density is found in Shimla followed by Tehri-Garhwal, Dehraun, Chamba and Pithoragarh. Lowest is found in Kullu district. This negative growth is because of introduction of many new towns in the district and expansion of the urban area. Positive growth has been found only in three district are Mandi, Solan and Nainital.

Changes in age-sex composition of the urban population have been observed during the 1971-81. The proportion of population in age group 0-14 has decreased and in the middle age and old population's proportion has increased marginally.

Migration from rural to urban area has increased during 1971-81. Urban to Urban migration has low proportion to total urbanized migration except in two district of Dehradun and Nainital, where urban to urban migration has comparitively higher proportion. This may be because of overall higher levels of development in those areas.

According to distance, intra district migration has been found highly significant in almost all the districts except Dehradun, Nainital and Shimla, where inter district and inter state migration has been found comparatively significant because of better economic development of the district and larger urban base.

Child-women ratio has experienced a decline in all the districts. it is because of increasing female work participation and educational level in the region.

Dependency ratio has also declined in almost all the district except three districts namely Mandi, Solan and Nainital. Highest increase has been observed in mandi because of a significant urban out migration of working population after completion of project in Pandoh and Sundranagar towns.

Work participation rates has declined in most of the districts of the region during 1971-81, except for seven districts namely Chamba, Kangoa, Kullu, Solan, Tehri-Garhwal, Garhwal and Pithoragarh.

Among the districts of the region eight districts have positive growth in male work participation during 1971-81. Female work participation has increased in all the districts except four districts namely, Solan, Chamba, Gargwal and Nainital.

Distribution of workers in three sectors of economy has experienced significant changes over time. The proportion of workers in service sector has decreased during the 1971-81. In some districts, increase in primary sector has been observed. Shimla district has got highest proportion of workers in primary sector accounting for 39% of the total workers in the district in 1981. In Nainital and Dehradun districts proportion of workers in primary sector has decreased and significant increase has been observed in secondary sector. Except for Chamoli and Tehri-Garhwal, every district has experienced positive growth in secondary sector. Pithorgarh has highest growth in Secondary sector. Almost all the districts have experienced decline in the proportion of workers in tertiary sector.

Under the social characteristic, litiracy, scheduled caste and secheduled tribes has been considered in the study. Litiracy has been found very high in the districts for 1981. Highest literacy is found in Nainital followed by Shimla, Mandi, Kullu, Bilaspur while lowest literacy rate is in Una district. The range of literacy rate among the districts is 61.00% to 75.69%. Female litiracy is comparatively lower than male litiracy. Shimla has highest female litiracy in the region while Chamoli has lowest litiracy rate among the female. Male litiracy rate has been found above 68% in the all districts. Highest is observed in Nainital with 83.35% litiracy rate while lowest in Kangra district.

Scheduled caste population constitutes a significant proportion in urban population. Highest proportion has been found in Solan district (20.89%) while lowest in the Tehri-Garhwal district.(8.91%). Scheduled tribe population has very low proportion in total urban population. Highest proportion of scheduled tribe population is found in Chamoli district (8.85%) followed by Mandi (8.05%), Pithorgarh (7.83%) and Kangra (2.82%). Other districts have less than 1% population under scheduled tribe category.

In the study of Degree of urbanization as defined by the percent of population in urban areas to total population of the district, it has been found that Dehradun, Nainital and Shimla have high degree of urbanization in the region in both the years of 1971 and 1981. Other districts have low degree of urbanization in both censuses of 1971 & 1981.

In three districts namely Chamba, Bilaspur and Mandi have experienced decline in degree of urbanisation during 1971-81, while other districts have observed increase in degree of urbanization.

The second method used to find out degree of urbanization is ratio of urban to rural population. It has been found that Dehradun, Nainital, Shimla and Solan have high urban-rural ratio, which shows high degree of urbanization in these areas. Lowest ratio is found in Hamirpur in 1971 and Tehri - Garhwal in 1981 census. During the 1971-81 census, ratio has increased in all the districts except Chamba, Bilaspur and Mandi districts.

Size of median town has been calculated for the whole of the region and for sub region of Himachal Predesh and U.P. Hill region. This result shows that in 1971, size of median town is found of 46169 residentes, which has decreased in 1981, with 43023 median resident. In

case of Himachal Pradesh, the increase in size of median town has been observed, but U.P. hill region has experienced increase in the size of mediam town during the 1971-81.

Average or mean size of towns have been found largest in the Dehradun district followed by Nainital and Shimla. Other districts have small mean city size in both the census of 1971 & 1981.

- Various methods have been used to findout the tempo of urbanization. Using the method of Annual change of percentage point, it has been found that highest tempo of urbanization is experienced by ~~by~~ Nainital followed by Chamoli, Una, Hamirpur and Garhwal and Uttarkashi district. Three districts which have negative tempo of urbanization are Chamba, Bilaspur and Mandi.

In the method of Annual average rate of change of percent urban with the assumption of experiential growth, it has been found that Hamirpur has highest tempo of urbanization, followed by Una, Chamoli, Uttarkashi, Garhwal Pithoragarh and Kullu district. Three district namely Chamba, Bilaspur and Mandi has negative growth rate of change of percent urban.

Growth in Urban-rural ratio has been found highest in Hamirpur followed by Una, Chamoli, Uttarkashi, Garhwal and Tehri-Garhwal. Negative growth is found in Chamba, Bilaspur and Mandi district. Other district has got low growth in urban-rural ratio.

The tempo of urbanization according to median size of town has been found negative for whole region, but separately for Himachal Pradesh and U.P. Hills, tempo of urban has been found positive with 0.25% and 0.0595% growth respectively. Change in mean city size shows the increasing tempo of urbanization in all the districts.

In the study of distribution of urban population, rank size rule has been used. In 1971 "Z" value has been found 0.9534 which has decreased to 0.9129 in 1981 census. This result shows the tendency of decline in the concentration of uraban population in large cities relative to the smallest cities.

In the study of concentration and dispersion of urban population, the Gini's coefficient of concentration shows that concentration of urban population in relation to total population of the region has been found decreasing from 1971 to 1981 census. The value of Gini's coefficient of concentration has decreased from 0.4849 in 1971 to 0.4421 in 1981 census.

Location quotient also showed decreasing concentration of urban population in certain district namely Dehradun, Nainital and Shimla. Other districts have observed increasing concentration, which show the disposal of urban population from highly concentrated district of urban population.

In the study of primary index it has been traced that concentration of urban population in largest city Dehradun is decreasing during 1971-81.

- Correlation between the growth in urban population and some of its explanatory variables is worked out, which shows that only five explanatory variables have significant relationship with the dependent variables at different levels of significance. Growth of urban population has significant relationship with urban-rural growth differential at 1% level of significance. Dependent variable has highest correlation with growth in area under fruit & vegetable followed by growth in rural to urban migration, growth of workers in household and other than household industries and growth of workers in transport, storage and communication. Dependent variable, Urban-rural growth differential also has significant correlation with the same variable as found above.

Stepwise linear regression analysis shows that most important determinants, of growth in urbanization' are growth in area under fruit and vegetables, growth in rural to urban migration, growth of workers in transport, storage and communication, growth in number of villages electrified, growth of workers in household and other than household industries, growth of workers in construction, growth in Labour productivity and agricultural yield per hectare.

Concluding the chapter we can say that process ofurbanization of hill region is quite different in pattern and characteristics than the urbanization in the plain areas. Low level of economic development has given rise to a special nature of urbanization, where most of the towns are small and medium size throughout the region except one big class I city of Dehradun. Most of the towns which were implanted by the continuing colonial administration did not develop economically very prominent in the region. The region is having low level of urbanization.

The main determinants of growth of urban population are found to be growth in area under fruit & vegetables, growth in land productivity, growth in labour productivity and growth in other non-primary

activities. The development of infrastructural facilities in sorrounding rural areas; however have a negative impact on the growth of urban population.

The first hypothesis that with the growth in urban population, there has been significant change in urban profile during 1971-81 is found varified, because during the 1971-81 census, many changes have been observed in the urban profile of the region.

The value of R^2 for 1971 & 1981 shows that regularily in urban system is increasing, so the hypothesis second is to be testified.

The value of "Z" of rank size rule constant has decreased during the 1971-81 census, which shows that the urban system of the region is becoming more disperse in term of urban population, so third hypothesis is found varified.

The concentration of urban population is found to be much lower. During 1971-81 the pattern of urbanization has shown a declining tendency in the concentration of urban population, it is becoming more disperse, so third hypothesis is also varified.

The hypothesis that agricultural and service sector have a dominant role in the process of urbanization is to be found testified. In the regression analysis of independent variable explaining the growth of urbanization, it has been found that out of seven explanatory variables considered in the regression model, six are from agricultural and service sector and give very high explanation of the dependent variables.

Growth in rural to urban migration is second dominant explanatory variables after the growth in area under fruit & vegetables in the regression model, which proves the hypothesis that growth in rural to urban migration plays a dominant role in the process of urbanization. Value of regression coefficient is also found highest in the model, which is significant at 1% level of significance. So this hypothesis is also found to be testified or validated.

Limitation of the study

The present study, however, suffers from some of the following limitations also :

i) The growth of urban population is being explained in the terms of secondary data which is available at district level only and not at the city or town level.

ii) Migration data apart from being available only at district level relates only to inmigrants and is not available for out migrants.

iii) The statistical analysis suffers from being based only on smaller number of observations (only 18 districts).

It is therefore suggested that any future study of this kind should be collected for individual towns. An exhaustive survey about the economic base of the town, its input-output linkages, investment pattern, financial subsidies by the government, industrial production, employment generation etc. should be throwing more light on the growth pattern of urbanization.

Primary study should also be conducted for investigate individuals. The study should identify why the people are out migrating from the region. It should also find out the reason for immigration of people, the areas from where they are coming, how are they exploiting the resource base of the region etc.

BIBLIOGRAPHY

Books

Aggarwal, S.K., "Vertical Movements of Towns and Growth of Urban Population in Uttar Pradesh Between 1951 and 1961", IIPS, Bombay.

Ahmad, Dazi., "Indian Cities : Characteristics and Correlates", Chikcago, University of Chicago 1965.

Alam, Manzoor., "The Nation Settlement in India", in Bourne, L.S. and Sinclair, R (eds) Urbanisation and Settlement Systems : International Perspective, Oxford University Press, 1984.

Alam, S.M., "Distortion of Settlement System of India", in P.S. Mahadev (ed) - Urban Geography, Heritage Publishers, New Delhi, 1936, pp. 176-192.

Anderson, N., "Our Industrial Urban Civilisation", Asia Publishing House, New York, 1964.

Atkinson, E.T., "Gazetter of Himalayan Districts", Allahabad, vol. II & III, 1984.

Banerjee, Sujit., "Spacial Dimension of Urbanisation in relation to Development Planning of India", Associated Publications, New Delhi, 1969.

Berry (Brain, J.L)., "Human Consequences of Urbanisation : Divergent Paths in the Urban Experiments of Twentieth Century", London, 1973.

Berry, B.J.L., "Some Relation of Urbanisation and basic Pattern of Economic Development", in Bryee, F.R. (ed) - Urban Systems and Economic Development, 12 Evgene Oregon, 1962.

Bogue, D.J and Zachariah, K.C., "Urbanisation and Migration in India", in Roy Turner (ed) - Indias Urban Future, Berkeley : University of California Press, 1962.

Bose, Ashish., "Urbanisation in India : An Inventory of Source materials;" Academic Books, New Delhi, 1970.

———— "Studies in India's Urbanisation 1901-1971;" Tata Mcgraw Hill, New Delhi, 1973.

———— "Urbanisation in India : A Demographic Perspective," in Goldstein, Sidney and Sly David, F (eds) - Patterns of Urbanisation : Comparative Country Studies, Vol I, Ordina Editions, Dolhair(Belgium), 1975, pp. 289-339.

Bose, S.C., "Land and People of the Himalaya," Indian Publication, Calcutta, 1968.

Bourne L.S. & Others., "Urbanisation and Settlement Systems : International Perspective;" Oxford University Press, 1984.

Brease, G (ed)., "City in Newly Developing Countries : Reading on Urbanism and Urbanisation;" Englewood Cliffs, Prentice Hall , 1969.

Bulsava J.F., "Problems of Rapid Urbanisation in India; Being a Memorandum based on the finding of Socio-Economic Survey of Nine Indian Cities," Bombay : Popular Prakashan, 1964.

Chib, S.S., "This Beautiful India : Himacal Pradesh," Light and Life Publishers, New Delhi, 1977.

Colin, Roszer., "Urbanisation in India", International Urbanisation Survey, The Ford Foundation, 1961.

Dasgupta, B (ed)., "Urbanisation, Migration and Rural Change : A Study of West Bengal;" A Mukherjee and Co, Calcutta, 1988.

Davis, K., "World Urbanisation 1950-1970" vol. I&II Barkelay, University of California, Population Monograph, Series 4 & 9,1972.

———— "The Population of India and Pakistan;" Princeton, N.J. Princeton University Press, 1951.

———— "Urbanisation in India : Past and Future", in Roy Turner (ed) - India's Urban Future, Berkeley, University of California Press, 1962.

Eisenstadt, S.N & Snachar A., "Society, Culture and Urbanisation," Sage Publications, New bury Park, 1987.

Goldstein, Sidney and Sly. David, F (ed)., "Pattern of Urbanisation : Comparative Country Studies," Ordina Editions, Dolhain (Belgium), 1975.

_____ "The Measurement of Urbanisation and Projection of urban Population", IUSSP Committee on Urbanisation and Population Redistribution, ORDINA EDITIONS, DOLHAIN, BELGIUM, 1975.

Hanumappa, H.G., "Urbanisation Trends in India (Case Study of a Medium Town," Ashish Publication House, New Delhi, 1981.

Hauser P & Gardner R.W., "Urbanisation, Urban Growth and Intermediate cities - Trends and Prospects," Paper prepared for the East West Population Institute, Workshop on Intermediate Cities, Honolulu, Hawai, July, 1980.

Hauser, P.M & Schuore L.F., "The Study of Urbanisation," Hiley Publication , New York, 1965.

Hoselitz, B.F., "Rural Urban Relationship and Development of Rural Area in Developing countries", in Raanam Weitz (ed) - Rural Development in a Changing World, MIT Press, London, 1968.

Jackobson L & Pvakash V. (eds)., "Urbanisation and National Development," Beverly hills, Saga Publication, 1971.

Johnston, J.J "Econometric Methods," Mcgraw-Hill, New York, 1960.

Jones, Ronald (ed)., "Essays on World Urbanisation," George Philip Publisher, London, 1975.

King A.D., "Colonial Urban Development : Culture, Social Power, and environment," Routledge and Kegan paul, London, 1976.

Koutsoyiannis.A., "Theory of Econometrics", 1976. Macmillan 1973.

Lall, J.S (ed).,
"Himalaya : Aspects of Change", Oxford University Press, Delhi, 1981.

Mahamood. A.,
"Statistical Methods in Geographical Studies", Rajesh Publication, New Delhi, 1977.

Mandal, R.B &
Peters, G.L (eds).,
"Urbanisation and Regional Development," Concept Publishing Company, New Delhi, 1982.

Meadows, P &
Mizrudin E.H (eds).,
"Urbanism, Urbanisation and Change : Comparative perspective." Addison - Wesley, 1969.

Mehta, Ashok.,
"The Future of Indian Cities". National Issues and Goals" in Roy Turner (ed)- India's Urban Future, Berkeley : University of California Press, 1962.

Misra B.D.,
"An Introduction to the Study of Population," South Asian Publishers Pvt.Ltd. New Delhi, 1980.

Mitra, Ashok.,
"Levels of Regional Development in India," in Census of India, vol.I Part I (A-I), New Delhi 1961.

Moseley, melcolm J.,
"Growth Centres in Spatial Planning", Pergamon, Oxford, 1974.

Nobie, Allen G &
Duttm Ashok K (eds).,
"Indian Urbanisation and Planning : Vehicles of Modernisation," Tata-Mcgraw Hill Publication, New Delhi, 1978.

Peach, G.C.K.,
"Urabanisation in India," in Beckinsale R.P. & Houston J.M (ed) - Urbanisation and its Problems, Oxford, Basil Black well, 1970, p. 297.

Prakasha Rao VLS.,
"Urbanisation in India : Spatial Dimension", Concept Publishers, New Delhi, 1983.

"Some Aspects of Urbanisation", Prasaranga, Mysore University, Mysore, 1976.

Premi, M.K., "Urbanisatio", in India's Population, 1981, UN Monograph Series No.10, United Nations, New York, 1985.

_____ "An Introduction to Social Demography," Vikas Publishing House Pvt. Ltd., New Delhi, 1983.

Rakesh, Mohan., "The Regional pattern of Urbanisation and Economic Development in India", in Padmanabhan, P (ed)- Recent Population Trends in South Asia, Proceedings of the Conference, New Delhi, 1983 pp. 230-50.

Rakesh Mohan and Paut.C., "The Morphology of Urbanisation in India: Some Results from the 1981 Census" (Abstract), 1982.

Rana, Kulwant., "Industrialisation of Hill States in India," Deep and Deep Publication, New Delhi, 1988.

Roy Turner (ed)., "India's Urban Future", Berkeley, University of California Press, 1962.

Sharma K.D., "Endogenous and Exogenous Urbanisation", in Singh, O.P (ed) - Himalaya : Nature, Man, and Culture, Rajesh Publication New Delhi , 1983, pp.272-90.

Singh K.N., "Urban Development in India," Abhinav Publications, New Delhi, 1978.

Singh O.P. (ed)., "Himalaya : Nature, Man and Culture" Rajesh Publication, New Delhi, 1983.

Singh, R.L. (ed)., "India : A Regional Geography" National Geographic Society of India, Varanasi, 1971.

Sovani N.V., "Urbanisation and Urban Inidian," Asia Publication House, New York, 1960.

Spate, O.H.K., "India and Pakistan : A General and Regional Geography," Methuen and Co. Ltd. London, 1957.

Tewari, M.M. & Singh, S.K., "The Urban Fact of the U.P. Himalaya in Historical Prespect" in Singh O.P (ed)- Himalaya : Nature, Man and Culture, Rajesh Publication, New Delhi, 1983, pp. 291-97.

Thakur, V.K., "Urbanisation in Ancient India," Abhinav Prakashan, New Delhi , 1981.

Tyagi, Nutan., "Distribution and Characteristics of Urban Centres in U.P. Himalayas", in Mandal, R.B. & Peters, G.L (ed)- Urbanisation and Regional Development, Concept Publishing Company, New Delhi, 1982 pp. 79-94.

United Nations., "Determinants and Consequences of Population Trends," vol.I, UN, 1973.

Uniteed Nations., "Urbanisation in the Second UN Development Decade," Department of Economic and Social Affairs, New York, 1970.

Vaidyanathan, K.E., "Components of Urban Growth in India, 1951-61", Proceeding of the General Conference of the International Union for Scientific Study of Population, vol.IV, London, 1969, p. 2941.

ARTICLES

Banerjee & Chakrabarti, A., "Spatial Pattern of Socio-economic Characteristics in Calcutta Metropolitan Districts", in the National Geographical Journal of India, vo.l.28, Part 3&4 Sept-Dec. 1982 pp. 152-159.

Berry B.J.L., "City Size Distribution and Economic Development", in Economic Development & Cultural Change, IX, July, 1961, pp.575.

Bhattacharya, B.N & Majumdar, K., "Changes in Structure of Urbanisation of Urbanisation of big cities in India - An Inter-sectoral Comparative Analysis", in Indian Journal of Regional Science, vol.XII, No.1, 1980, pp. 9-18.

Bhist, H.S. & Tiwari, M.M., "A Short History of Urbanisation of Almora", in Geographical Review of India, vol.42 Sept. 1980, pp. 245-253.

Bradrock, R.W., "The Hinterland of Madras and Bangalore," in the Indian Geographical Journal, XL IX, I, 1974, pp. 10-16.

Chand, R. & Thakur, M.C., "Himalaya : Badalta Jansankhya Paridrisay", Pahar I, 1982, pp. 7-14.

Chand. R., "Himalaya ka Jan Sankharyatamak Swaroop", Phar -2, 1982, pp. 1 - 12.

Chandra, R.C. & Krishna, Gopal., "Urbanisation in Haryana (1960-71)," The Geographer, vo. XX, I, 1973, pp. 16-32.

Dasgupta, M. & Basu, D., "Urbanisation and Agricultural Yields - A Case Study of West Bengal", in Indian Journal of Regional Science, vo. xvii, No. 1, 1985, pp. 25 - 32.

Dasgupta. C.D., "Spatial Dynamics in the Indian Suburban Zone", in Indian Journal of Social Work, vol. XXXVII, 3&4 1975-76, pp. 305-309.

Ganguli, D.M., "Some Aspects of Urbanisation in Uttar Pradesh," in Geographical Review of India, 25(2), June, 1962, p. 107.

Jana. M., "Decennial Growth and Functional characteristics of Urban Areas in Midnapur District", in Geographical Review of India, XXXVII. 4, 1975 pp. 3644-377.

Kundu, Amitabh., "Theories of City size distribution and Indian Urban Structure : A Reappraisal", in Economic and Political Weekly (Special Article), vol. XVIII, July, 1983 pp.1961-68.

Lala. H., "Urban Fringe : An Analysis of the Concept", in Uttar Bharati : Bhoogol Patrika, IX,2, 1973, pp. 64-70.

Mukherjee, A.B., ":Levels of Urbanisation in Uttar Pradesh 1961", in Geographical Review of India, Vol. XXXV, I, 1973, pp. 31-42.

Munshi, S.K., "The Nature of Indian Urbanisation : A Review", Geographical Review of India, vol. XXXVII, 4, 1975, pp. 287-99.

Pothana, V., "Urban Growth in Andhra Pradesh : An Economic Analysis", Indian Journal of Regional Science, Vol. XII, No.2, 1980, pp. 100-120.

Raj, Bala., "Urbanisation in Rajasthan State, 1981", The National Geographical Journal of India, vol.30, part I, March, 1984, pp. 13-20.

Rao, D.S. & Reddy, M.B.K., "Spatial Centrifugal Function in a City Region", in the National Geographical Journal of India, vol. 28, 1&2, March-June, 1982, pp. 79 - 87.

Reddy, K. Vittal., "Functional Transformation of an Urban Area : A Case Study of Secondarabad Cantonment", in Deccan Geographer, 20,1, 1982, pp. 194-220.

Saxena, P.B., "The changing pattern of Demographic Structure of Dehradun City", in Deccan Geographer, vol. X, 2, 1972, pp.51-71.

Sharma, J.P., "A Note on the Temple Town of Himachal Pradesh : Chamba", in the National Geographical Journal of India, vol. XXIV, 1&2, March-June, 1978, pp. 93-98.

Sharma, N., "Degree of Urbanisation and Level of Economic Development in Chota Nagpur : A Study in Nature of Relationship", in Indian Journal of Regional Science, vol. IV, No.2, 1972, pp. 142-53.

Singh R.P. & Dqabral, M.P., "A Comparative Analysis of the Growth of Functional Characteristics of Towns of Ganga - Yamuna Doab," Indian Geographical Journal, vol. XIV, 1&2, 1970, pp.40-45.

Singh S.C.& Singh B.N., "Urbanisation in U.P. Himalayas:", in Indian Journal of Regional Science vol. XIX, No.2, 1987, pp. 51-55.

Srivastava, B.& Ramachandran, R., "The Rural Urban Fringes : A Conceptual Frame for the Study of Transportation of the Fringes", in Indian Geographical Journal Vol. XL IX, 1964, pp.1-9.

GOVERNMENT PUBLICATIONS

Census of India 1971 & 1981,Uttar Pradesh; General Population Tables (Series-22; Part II-A).

_____ 1971 & 81 Himachal Pradesh; General Population Tables (Series 7; Part II-A).

_____ 1971 & 1981, Himachal Pradesh; Primory Census Abstract (Series 7; Part II -B).

_____ 1971 & 1981, Uttar Pradesh; Primar; Census Abstract, (Series 22; Part II-B).

_____ 1971 & 1981, Himachal Pradesh; General Economic Tables (Series 7; Part III-A&B)

_____ 1971 & 1981, Uttar Pradesh; General Economic Tables (Series 7; Part III A&B)

_____ 1971 & 1981, Himachal Pradesh; Social and Cultural Tables (Series 22; Part IV-A)

_____ 1971 & 1981, Uttar Pradesh; Social and Cultural Tables (Series 22; Part IV-A).

_____ 1971 & 1981, Himachal Pradesh; Migration Tables (Series 7; Part V -A&B).

_____ 1971 & 1981, Uttar Pradesh; Migration Tables (Series 22; Part V - A&B).

_____	1971 & 1981, Uttar Pradesh; Analytical Report And Administrative Statistics & Census Tables, District Census Handbook (Series 22; Par X-C).
_____	1971 & 1981, Himachal Pradesh; Full Count Census Tables on Village Directory & Primary Census Abstract & Departmental Statistics, District Census Handbook (Series 7; Part X-2).
_____	1971 & 1981, Uttar Pradesh; Town Directory
_____	1971 & 1981, Himachal Pradesh; Town Directory.
Government of India	Agricultural Statistics of India, Vol.II, 1970-71 & 1980-81, Directorate of Economics & Statistics, Ministry of Agriculture.
_____	Season And Crop Report, Himal Pradesh, 1970-71 & 1980-81, Directorate of Economics, & Statistics, Ministry of Agriculture.
_____	Season and Crop Report, Uttar Pradesh, 1970-71 & 1980-81, Directorate of Economics & Statistics, Ministry of Agriculture.
Government of Uttar Pradesh	Statistical Abstract of Himachal Pradesh, 1980-81 & 1970-71, Economics and Statistics Division, State Planning Institute Lucknow.
Government of Himachal Pradesh	Statistical Abstract, 1970-71 & 1980-81, Department of Economics & Statistics, Simla.

APPENDIX - I

DISTRIBUTION OF TOWNS IN DIFFERENT SIZE-CLASS (1981)

DISTRICTS	Total No. of Towns	SIZE - CLASS I	II	III	IV	V	VI
Chamba	5	-	-	-	1	-	4
Kangra	8	-	-	-	1	3	4
Hamirpur	3	-	-	-	-	1	2
Una	5	-	-	-	-	1	4
Bilaspur	3	-	-	-	-	1	2
Mandi	4	-	-	1	1	1	1
Kullu	3	-	-	-	1	-	2
Shimla	6	-	1	-	-	-	5
Solan	7	-	-	-	1	1	5
Sirmaur	3	-	-	1	-	1	1
Uttarkasi	3	-	-	-	1	-	2
Chamoli	7	-	-	-	-	2	5
Tehri-Garhwal	5	-	-	-	1	1	3
Dehradun	12	1	-	2	4	4	1
Garhwal	8	-	-	-	3	1	4
Pithoragarh	5	-	-	-	1	-	4
Almora	5	-	-	1	1	-	3
Nainital	18	-	2	4	2	4	6

Source : Primary Census Abstract, Census of India, 1981