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Analytical study of Spatial Changes in Rural and Urban Population Growth – A Case study of Hadouti Region

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ABSTRACT: The economic development of any region depends on its human resource. Natural resources are used by humans only. In fact, natural resources are inactive. They only facilitate economic development, whereas the task of man is to maximize production from them. Therefore, it is important to study the population of any area. In this regard, an analytical study of rural and urban population growth in Hadouti region between 1971 and 2011 has been done. Hadouti region is a geographical region located in the south-eastern part of the state of Rajasthan. In which at present there are 15 tehsils and in the research paper all these 15 tehsils have been considered as the unit of study. In the present paper, the data of rural and urban population growth in Hadouti region from the year 1971 to 2011 was analysed and the changes in the growth of rural and urban population in all the tehsils between 1971 and 2011 have been explained through the map. And finally, the reasons for the spatial changes in population growth were also clarified.

KEYWORDS: Human Resources, Natural Resources, Economic Development, Rural and Urban population growth, Spatial Changes.

I. INTRODUCTION

The economic development of any region depends on its human resource. Natural resources are used by humans only. In fact, natural resources are inactive. They only facilitate economic development, whereas the task of human beings is to maximize production from them. Therefore, it is important to study the population of any area.

The term population growth is used in a broad sense in population geography. Population growth or change is the change in the number of populations living in an area over a specific period, whether that change is negative or positive. The study of population growth is necessary because population growth is at the root of demographic dynamics, it is an indicator of the economic development of a region, it is a symbol of social awareness, political ideology is determined by population growth, therefore demographics is important. The relationships between the elements and between the demographic and non-demographic elements can be understood. Population growth changes the cultural background. In the present research paper, spatial changes of rural and urban population growth of Hadouti region have been studied.

II. OBJECTIVES

1. To study the spatial changes of rural and urban population growth in the study area from 1971 to 2011.
2. To analyse the decadal change in rural and urban population growth between 1971 and 2011.
3. Indicate the areas of low, medium, and high growth in the study area.

III. METHODOLOGY

To analyse the rural and urban population growth in Hadouti region, the data of rural and urban population growth of the year 1971, 1981, 1991, 2001, 2011 was tabulated as the basis, in which the percentage change in rural and urban population in 10 years was analysed, after that, in all 15 tehsils of the study area, rural and urban population growth was mapped on the basis of decadal growth of year 2001-2011, and the spatial changes of positive and negative growth in rural and urban population growth between 1971 and 2011 been exposed.

IV. REVIEW OF LITERATURE

First study on population analysis in the world was done in 1953 by G.T. Trewartha, after which many geographers and economists made their important contributions, in this Thomson, Lynne Smith, Ackerman, C. Clark, Ward, J.I. Clark Garner, Jalensky, Stamp, Alfrid Peterson, G.J. Demko, Adams Landry, Brasley, P.E. James, Buchnan, P.George, W.E. Mori, D.J.Bogue, Karl-Saunders, D.J. Lewis, Andrey Rogers, Peter Schutt, Dickinson, Veit Hauer, RC Colby, H.Gilbert, K.Davis, Harris, L.Burget, Edelman, J.Brunsch, FedericDath, Kosnicke, Robin Prior etc. are prominent scholars.

Indian Scholars in Population Studies- Ashish Bose, B.L.Agarwal, Chandrashekhar, S.N.Agrawala, R.C.Chandana, G.S.Gosal, B.N.Ghosh, B.N.Puri, V.C. Misra, B.C.Mehta, Mansur Ahmed, S.J.Mehta, Suryakant, R.S.P.Gosal, K.N. Dubey, Prem Sagar, Smita Sen Gupta, S.C.Julka, P.K. .Sharma, Keshav.C.Kayastha, Sodhiram, Dhaneshwari, Jitendra Mohan, Meher Singh Gill, F.Z Jamali, N.L Gupta, Hemlata Joshi, Sadhana Kothari, Ismail Haque, Indel Singh, Kamalkant Dubey, Mahendra Bahadur, Juzar Singh, Pushpa Pathik, Gopal Krishna, Heather Joshi, Abdul Razak, NuralAlam, A.S. Panwar, Dharmaraj Joshi, LaluramBhagora, Anju Kohli, Gunjan Garg etc. have made their invaluable contribution.

In recent years, significant study is done in the occupational structure of population by Akinbogun, T., and S. Ogunduyile. 2009, Bendi, S. K., and T. K. Pany. 2017, Bose, C. 2018, Chakrabarti, A. K. 2008, Chutia, L. J., and M. K. Sharma. 2016, Das, D., A. Kumar, and M. Sharma. 2020, Dash, M. 2016, Grobar, L. M. 2019.

V. STUDY AREA

Study area is located in the south-eastern part of Hadouti Plateau in Rajasthan, between 24°25' to 25°51' North latitudes and 75°15' to 76°45' East longitudes. The total geographical area of this region is 14481.6 square kilometres. This region includes the entire Bundi district, the entire Kota district except Ramganj Mandi tehsil, the entire Baran district except Chhabra Kishanganj and Shahbad tehsils and Khanpur tehsil of Jhalawar district. There are 15 tehsils in this region, in which there are 2278 inhabited villages and 19 towns. The main ever flowing river of this region is Chambal, whose tributaries are Kali Sindh, Parvan, Parvati and Mej. The climate here is semi-arid and sub-arid. Agriculture is the main occupation of the population here.

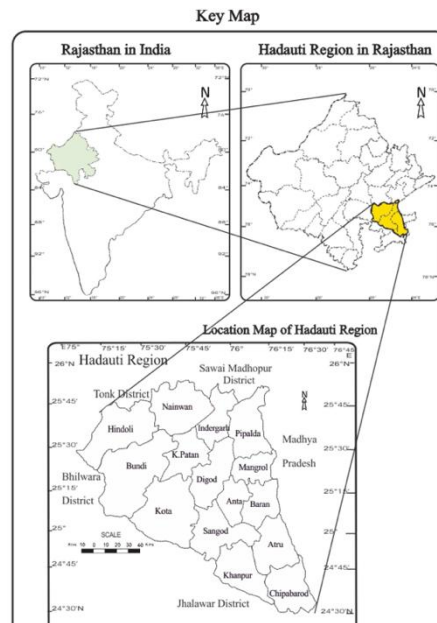


Figure 1:Map-1;Key Map

VI. ANALYSIS OF RURAL AND URBAN POPULATION GROWTH

In Table-1. Population data for the years 1971, 1981, 1991, 2001 and 2011 have been included to analyse rural and urban population growth. Here percentage change in decadal population growth is indicated.

Rural and Urban population growth in Hadouti region

Year	Rural Population	Percentage Decadal Change	Urban Population	Percentage Decadal Change
1971	1095840	-	319707	-
1981	1336075	21.92	562478	75.93
1991	1652434	23.68	820106	45.8
2001	2041105	23.52	1070952	30.59
2011	2217788	8.65	1502645	40.31

Figure 2: Table – 1

VI. I. CHANGES IN RURAL POPULATION GROWTH

Table – 1 represents the changes in rural and urban population growth in Hadouti region, which clearly shows an increase of 23.68 percent from 21.92 in rural population growth until 1991. But between 1991 and 2011, this growth slowed sharply from 23.68 to 8.65 percent. The main reason for this is the migration of people from rural areas to urban areas in search of employment and the main reason for the decrease in population growth rate in urban areas is the adoption of family planning. Uncertain monsoon rains also influence rural population growth because a good monsoon prevents migration from rural areas, but in the year when there is no good rainfall, more people leave agriculture and move to cities. Due to which the rate of population growth continues to be affected.

VI. II. SPATIAL PATTERN OF RURAL POPULATION GROWTH

There is a lot of regional variation in rural population growth, the growth rate of rural population in Atru and Baran tehsils was more than 20 per cent in 1971-1981, which declined sharply to negative 3.73 and 7.35 per cent respectively in 2001-2011. In Ladpura tehsil also, the population growth rate dropped from 18.37 percent in 1971-81 to

negative 18.56 percent in 2001-2011. In the decade of 1971-81, the maximum increase in rural population occurred in the western, northern, and central regions, where the growth rate of rural population is more than 30 percent. In these areas after 1971, due to the means of irrigation, especially canal irrigation, there has been an expansion in the area and due to the availability of employment opportunities to the people, there has been a huge increase in the rural population. 25 to 30 percent increase in North-Western region, 20 to 25 percent in Southern and Eastern regions, 15 to 20 percent in North-West and less than 15 percent in Southern and North-Eastern regions.

During 1971-81 to 1981-91, there has been an increase in the growth rate of rural population in 6 tehsils of the region, whereas in the remaining 7 tehsils it has decreased. Looking at the data of rural population, it is found that in 1971 the total rural population was 1095840 which increased to 2217788 in 2011. This is more than double as compared to 1971. Hence, in 40 years this growth has been recorded as 102.38 percent. The growth rate has increased due to the increase in the development of agriculture due to more irrigated area, more employment is available to the rural population, due to the development of medical facilities, there has been a decrease in the rural mortality rate.

1. Areas of slow growth- 4 tehsils namely Ladpura, Khanpur, Atru and Baran have been included under this as it is clear from Map-2. Out of this, Ladpura, Atru and Baran had negative growth of 18.56, 3.73 and 7.35 percent. While Khanpur registered a positive growth of 3.89 percent. Out of this, Kota and Baran towns come in Ladpura and Baran tehsils respectively, which saw more urban population growth in 2001-2011 because of migration from rural areas and inclusion of some rural areas in the city limits.

2. Areas of medium growth - This includes 2 tehsils whose growth is between 5 and 10 percent. These are Indragarh and KeshoraiPatan. Indragarh is formed by the division of KeshoraiPatan tehsil and the growth rate here was about 9.5 percent. Both the tehsils have strong canal irrigation system and agriculture gives good yield. But due to mechanization of agriculture, unemployment has increased, and rural population has migrated to other areas.

3. Areas of high growth - It includes six tehsils with 10 to 15 percent rural population growth rate in 2001-2011. Four of these tehsils- Sangod, Digod, Anta and Mangrol are in the central part of the region while two tehsils Nainwan and Bundi are in the western part. Agriculture is prosperous in all these tehsils.

4. Areas of very high growth - In 2001-2011, three tehsils with population growth of more than 15 percent, Hindoli, Chhipabdod and Pipalda are included in this. Two of these Hindoli and Pipalda are rural in majority (urban population is almost zero) and are prosperous in agriculture. Hindoli is a major vegetable producing tehsil.

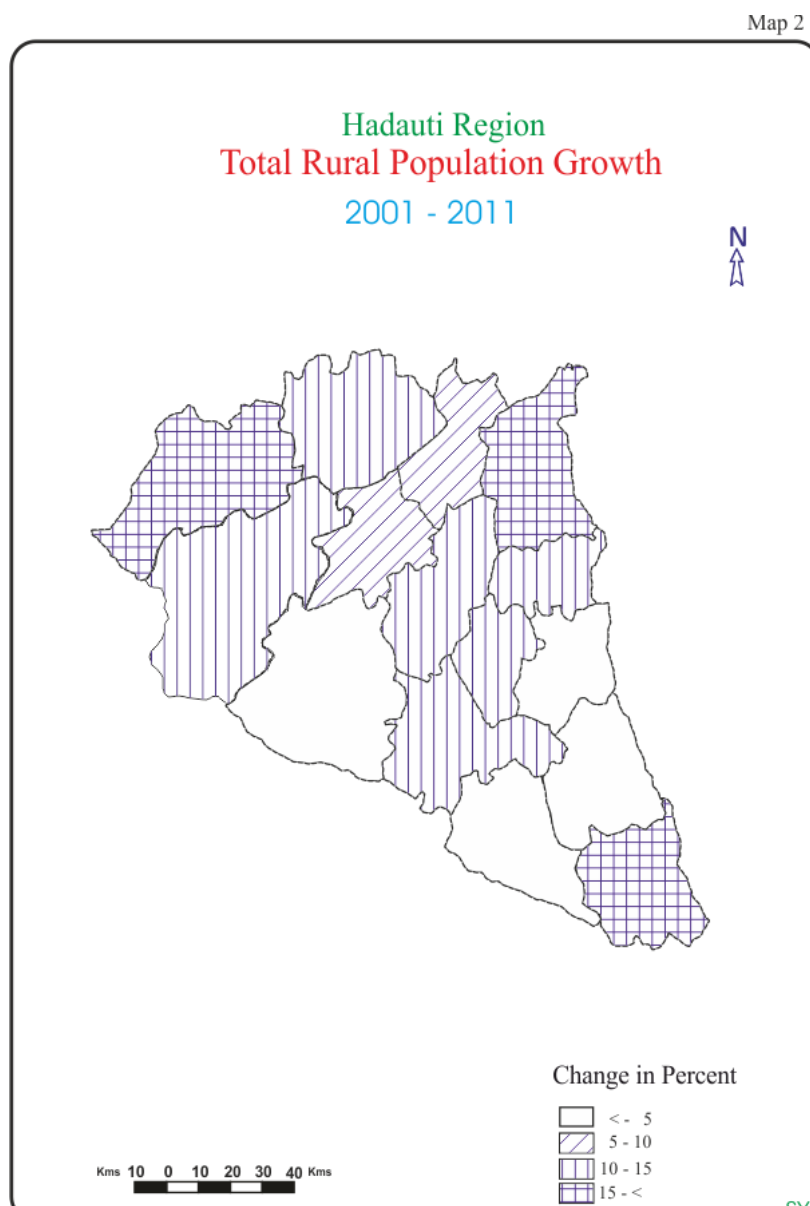
**Figure 3:** Map-2; Total Rural Population Growth 2001 – 2011.**VI. III. CHANGES IN URBAN POPULATION GROWTH**

Table -1 shows that the population growth was 75.93 per cent in 1971-81 which declined to 45.8 per cent in 1981-91. This growth rate further declined to 30.59 per cent in 1991-2001. But in the decade 2001-2011, the urban population growth rate again increased to 40.31 percent. The main reason for this variation in urban population growth rate is the variation in the migration of population from rural areas to urban areas. It is often seen that people migrate to the cities in less numbers in the years in which rainfall is more and agricultural crops have been produced well, but in the years in which the rainfall is less and agriculture is not good. In those years, more and more people from rural areas come to the cities because of the fear of famine. This is the reason that there is a lot of fluctuation in the growth of urban population. There is a lot of regional variation in urban population growth in Hadauti region. The main reason for this is the lack of proper development of urban centers in the region. The maximum increase in urban population occurred in K.Patan (80.24 per cent) and Ladpura tehsil (73.81 per cent) in the decade of 1971-81.

Tehsil wise Rural, Urban percentage decadal change in Hadouti region

Year	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
Tehsil	Atru		Anta		Baran		Bundi		Chhipabarod	
1971-1981	22.12	0	NE	NE	20.64	40.9	30.87	39.24	25.92	20.27
1981-1991	24.35	0	NE	NE	22.74	37.43	29.22	35.44	21.93	28.86
1991-2001	18.25	0	NE	NE	27.54	36.29	20.98	43.37	24.67	18.81
2001-2011	-3.73	368.56	13.77	20.88	-7.35	49.99	14.31	23.91	18.92	17.53
Tehsil	Degod		Hindoli		Indergarh		K. Patan		Khanpur	
1971-1981	30.52	0	32.62	0	NE	NE	16.05	80.24	23.5	0
1981-1991	25.01	0	21.98	0	NE	NE	50.44	35.27	10.17	0
1991-2001	21.61	0	24.8	0	NE	NE	-33.59	-31.13	29.41	0
2001-2011	12.05	0	16.21		9.43	15.02	9.64	16.5	3.89	0
Tehsil	Ladpura		Mangrol		Nainwa		Pipalda		Sangod	
1971-1981	18.37	73.81	1.15		26.14	27.17	27.09	56.57	9.35	
1981-1991	28.88	49.73	24.21	49.12	24.08	21.5	5.18	0	21.8	29.67
1991-2001	32.01	30.53	-41.9	-38.44	28.42	24.91	22.44	0	19.88	19.52
2001-2011	-18.56	41.8	14.2	14.79	13.03	28.41	15.52	0	11.87	17.14

Figure 4: Table – 2

The main reason for this is that due to the inclusion of some towns in the cities in 1981, there was a huge increase in the urban population. In 1981, there was a lack of urban population in 5 tehsils of Hadouti region. These tehsils are Atru, Hindoli, Khanpur, Pipalda and Digod.

In 1981-91, for the first time, urban population was seen in Khanpur tehsil because there was lack of urban population in this area in 1981, but according to 1991 census, urban population was seen due to recognition of Khanpur tehsil headquarter as a town.

There has been a lot of change in the urban population growth rate in 1971-81 and 1981-91. The average growth rate of urban population in the state was 75.93 percent, which came down to 45.80 percent in 1981-91. The main reason for this decrease is clearly visible effect of family planning in urban areas.

VI. IV. SPATIAL PATTERN OF URBAN POPULATION GROWTH

Based on analytical study of urban population growth, the entire study area has been divided into the following growth zones:

1. Areas of slow growth – From Table – 2, in the year 2001-2011, Sangod, Mangrol, Keshoraipatan, Chhipabarod are included in this category where the growth rate is less than 20 percent. On Map-3, two other tehsils

Hindoli and Khanpur are also shown in this category because for the first time a village of Hindoli tehsil was included in the boundary of Bundi city and Khanpur town was again taken into urban growth in 2011 as census classified it as a town.

2.Areas of medium urban growth - Areas with 20 to 40 percent growth have been included in which Anta, Bundi, Indragarh, Nainwan have been taken.

3. Areas of high urban growth - This includes areas with more than 40 percent growth. It includes 3 tehsils Ladpura, Baran and Atru. Highest increase was seen in Atru Tehsil 368.56. While Baran registered a growth of 49.99 percent and Ladpura 41.8 percent.

In 2011, two tehsils Digod and Pipalda had zero urban population. Because both these tehsils are completely included under the rural area.

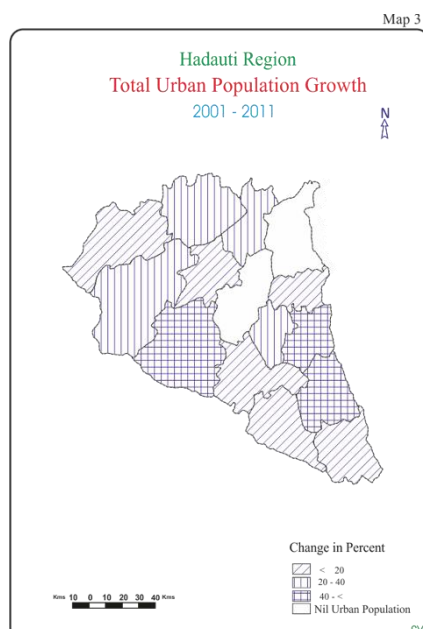


Figure 5: Map-3; Total Urban Population Growth 2001 – 2011.

VII. CONCLUSION

It can be said that the growth of rural population in Hadouti area was 21.92 percent in the year 1981, which increased to 23.68 percent in the year 1991, but the growth rate of rural population also decreased sharply from 1991 to 2011, growth in 2011 was only 8.65 percent, mainly due to migration of people from rural areas to urban areas in search of employment.

On analysing the growth of rural population in Hadouti region, it is known that based on growth, all the areas can be mainly divided into 4 parts, areas of slow growth, areas of medium growth, areas of high growth and areas of very high growth.

On analysing the urban population growth, the population growth was 75.93 percent in 1971-81, which decreased to 45.8 percent in 1981-91. This growth rate further declined to 30.59 percent in 1991-2001. But in the decade 2001-2011, the urban population growth rate again increased to 40.31 percent. The main reason for the variation found in urban population growth rate is the variation found in the migration of population from rural areas to urban areas. It is often seen that people migrate to the cities in less numbers in the years in which rainfall is more and agricultural crops have been produced well, but in the years in which the rainfall is less and agriculture is not good, in those years, more and more people from rural areas come to the cities because of the fear of famine. This is the reason that there is a lot of fluctuation in the growth of urban population.



Based on the analysis of urban population growth, the study area can be mainly divided into three areas of slow growth, areas of medium growth and areas of high growth, which is shown by the map.

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