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Hadouti Region – A Demographic Analysis

Dr. Zuber Khan¹, Dr. Sandeep Yadav², Dr. Nikita Mangal³

Assistant Professor, Department of Geography, Government College, Bundi, India¹

Associate Professor, Department of Geography, Government College, Bundi, India²

Lecturer, Department of Geography, G.S.S.School, Onkarpura, Bundi, India³

ABSTRACT: Human resource is the most important asset of any country, but whenever this resource is not fully utilized, this resource becomes a burden for that country, and hinders its development. It is very important to have adequate employment opportunities for the utilization of human resources. From this point of view, it becomes very necessary to study the population of any country, so that the best use of human resources can be made in the right direction at the right time. In this research the study area, the Hadouti is a geographical region located in the southeast of the state of Rajasthan has been studied. There are 15 tehsils in the study area and each tehsil has been analysed as a unit of study. In the demographic analysis, data from the years 1971 to 2011 has been analysed. Along with this, an attempt has also been made to project the estimated future population on the basis of the past trend of population growth in the area itself.

KEYWORDS: Human Resources, Employment Opportunities, Hadouti Geographical Region, Demographic Analysis, Projected Population.

I. INTRODUCTION

Human resource of any country is the most important asset there, but whenever this resource is not fully utilized, these resources become a burden for that country. and hinders the growth there. It is very important to have adequate employment opportunities for the utilization of human resource. From this point of view, it becomes very necessary to study the population of any country, so that the best use of human resource can be made in the right direction at the right time.

Demographic analysis has been done in the Hadouti region in the present study, under which the population growth has been analysed from the year 1971 to 2011, and the trend of population growth has been highlighted. In addition, the analysis of the relative density of rural and urban population of the area, the spatial patterns of causal distribution have been uncovered. An attempt has also been made to project the estimated future population on the basis of the trend of population growth of the area.

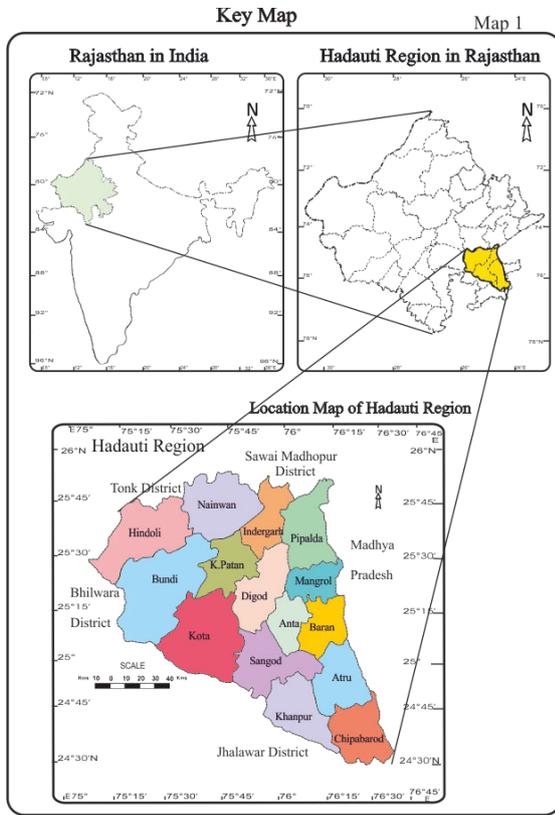
II. OBJECTIVES

1. To analyse the trend of population growth in the study area.
2. To analyse the relative density in the distribution of rural and urban population.
3. To project the estimated future population on the basis of the nature of population growth.
- 4.

III. METHODOLOGY

1. All the 15 tehsils included in the study area have been considered as a unit of study.
2. To analysed the trend of population growth in the area, tehsil wise population from the year 1971 to 2011 was analysed by arranging it in a table and to highlight the trend, taking the year 1971 as the base year, the index of growth in subsequent years in numbers provided.
3. The location quotient was used to analyse the relative density in rural and urban population distribution, whose formula is as follows.
4. Geometric method of population projection was used for the projection of future estimated population in the study area.

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 Clark, Ward, J.I. Clark Garner, Kosnicke, Robin Prior etc. are prominent scholars.

Indian Scholars in Population Studies- Ashish Bose, Chandrashekhar, S.N.Agrawala, R.C.Chandana, B.N.Ghosh, B.N.Puri, V.C. Misra, B.C.Mehta, Mansur Ahmed, S.J.Mehta, Suryakant, K.N. Dubey, Prem Sagar, Smita Sen Gupta, S.C.Julka, P.K. .Sharma, Keshav.C.Kayastha, Dhaneshwari, , F.Z Jamali, Ismail Haque, Indel Singh, Kamalkant Dubey, Mahendra Bahadur, Juzar Singh, Pushpa Pathik, Gopal Krishna, Heather Joshi, Abdul Razak, Nural Alam, A.S. Panwar, Dharmaraj Joshi, etc. have made their invaluable contribution.

In recent years, significant study is done in the population distribution 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, Huang, D., Lang, Y., & Liu, T. (2020), Ribeiro HV, Oehlers M, Moreno-Monroy AI, Kropp JP, Rybski D(2021), Yadav,S., Khan,Z. (2012), Zhang L, Lin X, Leng L, Zeng Y,(2021), Zhou Q, Xu Y, Zheng Y,

Shao J, Lin Y, Wang H,(2020).Khan, Zuber & Yadav, Sandeep & Mangal, Nikita. (2021).

V. STUDY AREA

Study area is located in the south-eastern part of Hadouti Plateau in Rajasthan, between 24⁰25' to 25⁰51' North latitudes and 75⁰15' to 76⁰45' 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.

VI. ANALYSIS OF THE CHANGE IN POPULATION GROWTH

Table 1 shows the difference in population growth rate tehsil wise. The study area found negative growth in 2011. This is also confirmed by the difference in the decadal variation of the index number. Almost the same situation was observed in all the tehsils of the region (except K. Patan and Ladpura tehsils). In K. Patan this was observed in 2001 as the reason for the decline in population was the creation of Indergarh tehsil out of it. Whereas the reason for the positive boom in Ladpura tehsil is the location of Kota city where students from all over the country migrate for coaching. Along with this, the surrounding rural population also migrates here due to more employment opportunities. This spurt is an indicator of the transition of population from one phase to another.

Table - 1
Change in Population Growth in Hadouti Region 1971-2011.

Year	Population (In'000)	Percentage Decadal Change in Growth	Difference of Percentage Decadal Change in Growth	Index Number of Population size (1971=100)	Decadal Change in Index Number	Difference of Decadal Change in Index Number
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Study Area

1971	1415			100		
1981	1898	34.1		134	34	
1991	2472	30.2	-3.9	174	40	6
2001	3112	25.8	-4.4	219	45	5
2011	3720	19.5	-6.3	262	43	-2

Atru

1971	71			100		
1981	86	21.1		121	21	
1991	107	24.4	3.3	150	29	8
2001	133	24.2	-0.2	187	37	8
2011	150	12.7	-11.5	211	24	-13

Baran

1971	84			100		
1981	108	28.5		121	21	
1991	138	27.7	-0.8	164	43	22
2001	182	31.8	4.1	216	52	9
2011	213	17	-14.8	253	37	-15

Bundi

1971	161			100		
1981	214	32.9		133	33	
1991	279	30.3	-2.6	173	40	7
2001	352	26.1	-4.2	219	46	6
2011	411	16.7	-9.4	255	36	-10

Chhipabarod

1971	75			100		
1981	94	25.3		125	25	
1991	116	23.4	-1.9	155	30	5
2001	144	24.1	0.7	192	37	7
2011	170	18	-6.1	227	35	-2

Digod

1971	76			100		
1981	99	30.2		130	30	
1991	124	25.2	-5	163	33	3
2001	150	20.9	-4.3	197	34	1
2011	169	12.6	-8.3	225	28	-6

Hindoli

1971	94			100		
1981	124	31.9		132	32	
1991	152	22.5	-9.4	162	30	-2
2001	189	24.3	1.8	201	39	9
2011	222	17.4	-6.9	236	35	-4



K.Patan

1971	109			100		
1981	141	29.3		129	29	
1991	206	46	16.7	189	60	31
2001	250	21.3	-24.7	229	40	-20
2011	282	12.8	-8.5	259	30	-10

Khanpur

1971	87			100		
1981	108	24.1		124	24	
1991	129	19.4	-4.7	148	24	0
2001	153	18.6	-0.8	176	28	4
2011	173	13	-5.6	199	23	-5

Ladpura

1971	285			100		
1981	455	59.6		160	60	
1991	663	45.7	-13.9	233	73	13
2001	868	30.9	-14.8	305	72	-1
2011	1143	31.6	0.7	401	96	24

Mangrol

1971	98			100		
1981	123	25.5		126	26	
1991	159	29.2	3.7	162	36	10
2001	197	23.8	-5.4	201	39	3
2011	227	15.2	-8.6	232	31	-8

Nainwa

1971	86			100		
1981	108	25.5		126	26	
1991	134	24	-1.5	156	30	4
2001	171	27.6	3.6	199	43	13
2011	196	14.6	-13	228	29	-14

Pipalda

1971	98			100		
1981	125	27.5		128	28	
1991	127	1.6	-25.9	130	2	-26
2001	156	22.8	21.2	159	29	27
2011	180	15.3	-7.5	184	25	-4

Sangod

1971	92			100		
1981	113	22.8		123	23	
1991	138	22.1	-0.7	150	27	4
2001	166	20.2	-1.9	180	30	3
2011	186	12	-8.2	202	22	-8



VII. SPATIAL DISTRIBUTION OF RURAL AND URBAN POPULATION

$$LQ = \frac{P_{ij}/P_i}{P_j/P}$$

Here: P_{ij} = Population of particular category in tehsil

P_i = Total population of that tehsil

P_j = Population of particular category in the study area

P = Total population of the study area

Table 2
LQ of Rural and Urban Population 2011.

Tehsil	Total Pop.	Rural Pop.	Urban Pop.	Percentage of Rural Pop. in Total Pop.	Percentage of Urban Pop. in Total Pop.	LQ of Rural Pop.	LQ of Urban Pop.
Atru	149959	122309	27650	81.6	18.4	1.37	0.46
Anta	120038	87661	32377	73	27	1.22	0.67
Baran	213555	95563	117992	44.7	55.3	0.75	1.37
Bundi	411533	295974	115559	71.9	28.1	1.21	0.7
Chhipabarod	170886	152049	18837	88.9	11.1	1.49	0.27
Digod	168734	168734	Nil	100	0	1.68	0
Hindoli	221601	219968	1633	99.3	0.7	1.67	0.02
Indergarh	124082	87066	37016	70.2	29.8	1.17	0.74
K.Patan	153987	108612	45375	70.5	29.5	1.18	0.73
Khanpur	173193	159345	13848	92	8	1.54	0.2
Ladpura	1143792	117838	1025954	10.3	89.7	0.17	2.22
Mangrol	106963	81890	25073	76.6	23.4	1.29	0.58
Nainwan	196070	176585	19485	90	10	1.51	0.25
Pipalda	179800	179800	Nil	100	0	1.68	0
Sangod	186240	164394	21846	88.3	11.7	1.48	0.3
Total	3720433	2217788	1502645	59.6	40.4	1	1

Abbreviation; Pop. = Population

The Location Quotient has been used to find their relative density.

The following points are clear from Table 2

1. Out of 100 persons, 59.6 persons are rural,
2. Out of 100 persons, 40.4 persons are urban.

3. The density and distribution of rural population

- i. The values of location Quotient indicate that 13 out of 15 tehsils have rural population, which has the concentration value greater than one.
- ii. The rural density in Baran and Ladpura tehsils is low and scattered as the value is less than one.

4. The density and distribution of urban population

Location quotient value reflects the concentration of urban population in Baran and Ladpura tehsil, whose value is more than one.

- i. The urban population is scattered in the remaining 13 tehsils as the value is less than one.

VIII. PROJECTED POPULATION

The population of each region has to adjust with the resources of its environment. The greater the amount of adjustment, the more happiness and prosperity the region will have. Demographers are called on not only to furnish data about the present size and composition but also to estimate their future trend. So it is very important for the planning of any place that complete information about their resources and projected population is studied. What will be the population and what will be its nature?

Population projection refers to the estimated future population of a place, area or country. In the present study, population projection has been done by geometric method, which has been found from the following formula:

$$P_t = P_o (1 + r)^t$$

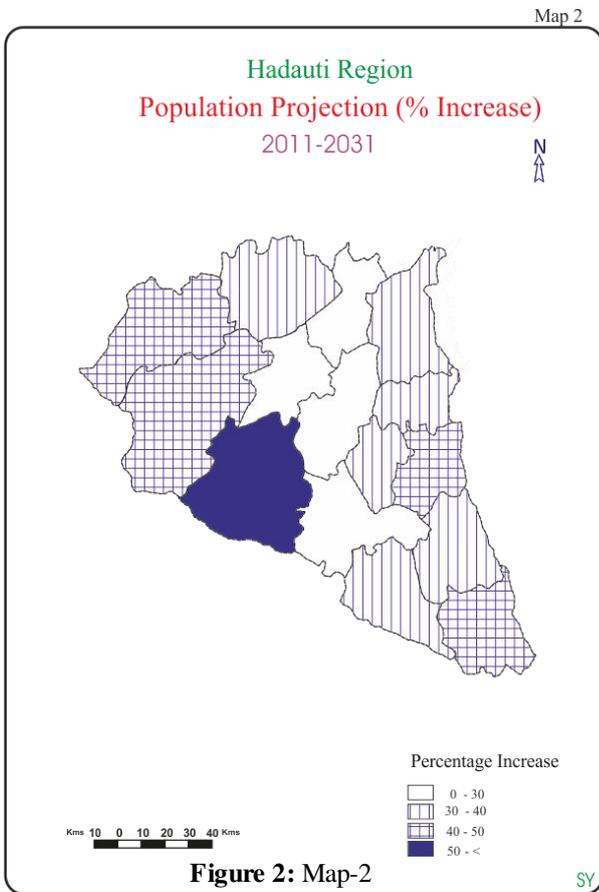
Here: P_t = Population ratio at time] P_o = Population of base year.

r = rate of growth between time, t = time in years

Table 3
Projected Population 2011-2031

S.No.	Tehsil	2011	2021	2031	Percentage Growth
1-	Atru	149959	170635	196087	30.76
2-	Anta	120038	140688	166520	38.72
3-	Baran	213555	252766	302132	41.48
4-	Bundi	411533	487096	582227	41.48
5-	Chhipabarod	170886	206276	253925	48.59
6-	Digod	168734	190111	216323	28.2
7-	Hindoli	221601	262290	313516	41.48
8-	Indergarh	124082	138427	155965	25.69
9-	K.Patan	153987	173496	197417	28.2
10-	Khanpur	173193	197072	226467	30.76
11-	Ladpura	1143792	1567271	2253885	97.05
12-	Mangrol	106963	122917	142650	33.36

13-	Nainwan	196070	225315	261487	33.36
14-	Pipalda	179800	210730	249423	38.72
15-	Sangod	186240	209835	238766	28.2
	Total	3720433	4554925	5756790	54.73



In Table 3, the population of Hadauti region has been projected till 2021 and 2031. It is clear from the table that the total population of the region which was 3720433 in 2011 will increase to 4554925 in 2021 and 5756790 by 2031. Thus the population will increase by more than half by 2031 as compared to 2011. Tehsil wise analysis of population projection shows that from 2011 to 2031, the maximum increase will be in Ladpura tehsil as shown in Map 2. The main reason for this is the existence of Kota metropolis in this tehsil. The second place is Chhipabarod tehsil. The least increase will be in Indergarh tehsil.

IX. CONCLUSION

The study area found negative growth in 2011. This is also confirmed by the difference in the decadal variation of the index number. Almost the same situation was observed in all the tehsils of the region (except K.Patan and Ladpura tehsils). In K.Patan this was observed in 2001 as the reason for the decline in population was the creation of Indergarh tehsil out of it. Whereas the reason for the positive boom in Ladpura tehsil is the location of Kota city where students from all over the country migrated for coaching.

The value of the Location Quotient has cleared that Out of 100 persons, 59.6 persons are rural, Out of 100 persons, 40.4 persons are urban. The values of location yield indicate

that 13 out of 15 tehsils have rural population, which has the concentration value greater than one, Location quotient value reflects the concentration of urban population in Baran and Ladpura tehsil, whose value is more than one.

The total population of the region was 3720433 in 2011 will increase to 4554925 in 2021 and 5756790 by 2031. Thus, the population will increase by more than half by 2031 as compared to 2011. Tehsil wise analysis of population projection shows that from 2011 to 2031, the maximum increase will be in Ladpura tehsil. The main reason for this is the existence of Kota metropolis in this tehsil. The second place is Chhipabarod tehsil. The least increase will be in Indergarh tehsil. The rapid increase in population will generate a larger number of economic and social problems. Some people hold the opinion that each new mouth has also anew pair of hands to produce, they forget that considerable investment is needed to make a pair of hands productive. Thus, the overwhelming growth of population will create numerous grave, unsolvable problems in the study area.



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