Aayushi International Interdisciplinary Research Journal (AIIRJ) UGC Approved Sr.No.64259

Vol - V Issue-III MARCH 2018 ISSN 2349-638x Impact Factor 4.574

'Density and Growth Pattern in Gondia Taluka' A Micro Level Analysis

Dr. Rajani A. Chaturvedi	Miss. Jyoti S. Rokde
Associate Professor, Head Department of Geography,	Research Scholar,
N.M.D. College, Gondia	RTM Nagpur University, Nagpur

Abstract:

Population density and growth in an area depends to a large extent on the type and scale of various geographical factors. All the geographic influences on population density and growth, terrain, climate, and economic activities affect directly as well as indirectly. The study region basically being the agricultural region, impact of terrain, soil and irrigation facilities available directly affect the density and growth pattern of the region. *Keywords* – Population, Density, Growth rate, Pattern

Introduction:

Population plays an important role in the development of any area. The total population as well as its growth rate and composition are important characteristics. In Gondia taluka there is only one urban center i.e. Gondia and the population characteristics of this area have been discussed below. One of the important indices of population concentration is the density of population. It is defined as the number of persons per square kilometer. High increase in density is a great concern as it puts immense pressure on our natural resources. Also it may be the quality of life. The term Density was used by Henry in 1837, while preparing railway map.

Objectives:

- To measure and determine the density and growth pattern of Gondia taluka on the basis of the village wise decadal data since 1951 at the taluka and the village level.
- To classify villages on the basis population parameters to evolve micro-region (revenue circles) within the Gondia taluka. The population parameters indicating levels of resource utilization would be taken into account for this kind of exercise. These are mainly growth & density.

Research Methodology:

In the research paper efforts has been made to analyze the population density and growth for this a micro region i.e. one of the taluka of Gondia District, Gondia taluka has been selected. Present paper is based on the secondary data mainly collected from District Census office at village level and on the basis of revenue Circles of the taluka. To know the demographic pattern of study area various techniques has been applied to form density pattern and growth pattern regions.

Study Region:

Gondia taluka is situated in the Gondia district of Maharashtra State, which is northeast boundary of state. It is the main taluka in the district; it is located in between $21^{\circ}22'29''$ N to $21^{\circ}37'12''$ N latitude and $70^{\circ}58'48''$ E to $80^{\circ}21'14''$ E longitude. The taluka having total 686.11 sq.km geographical area with 421650 total population. Taluka consists total 145 villages according to the census year 2011.

Gondia taluka is located in the eastern part of the Gondia district. The taluka comprises 7 revenue circles they are Dasgaon, Ratnara, Ravanwadi, Gondia, Kamtha, Khamari and Gangazhari. Gondia taluks is having total 145 villages ranging from minimum 11 villages in Khamari and 29 villages in Ratnara revenue Circle, being the largest geographical area i.e. 120.205 sq.k.m.

Result and Discussion

Population density is usually shown as the number of people per square kilometer. On the basis of average size of village, per hundred km density of villages is highest in Ravanwadi (32 sq.km.), while lowest in Khamari i.e. 16 and in Gangazhari and Kamtha 17 sq.km. The analysis reveals that Gondia revenue circle is having high density of villages due to small size villages are more here.

Sr.No.	Revenue Circle	No. of Village	Area (Sq.km.)	Village Density (Per 100 Sq.km.)
1	Dasgaon	28	102.5	27
2	Ratnara	29	120.205	24
3	Ravanwadi	24	75.9	32
4	Gondia	18	105.906	17
5	Kamtha	17	90.37	19
6	Khamari	11	68.39	16
7	Gangazhari	18	103.12	17

Table 5.1 Revenue Circle Wise Size Density of Villages 2011

Source: District Census Hand book -2011

Information collected about the size of settlement clears that out of the total 145 villages of the taluka in the year 2011 about 51% villages are having population between 1000 to 5000 persons only. Single village i.e. having population 152813, comprising 31.50% of the total taluka's population.

- and the reprint of the one of the get and							
Sr.	Village Size	No. of	Percentage of	Population	Percentage of Pop. in		
No.	4	Villages	villages		🚬 🔪 each size		
1	<1000	37	25.52	23306	5.53		
2	1000-1999	50	34.48	76558	18.16		
3	2000-4999	49	33.79	136931	32.48		
4	5000-9999	7	4.83	40488	9.60		
5	1000-1999	1	0.69	11549	2.74		
6	20000-49999	0	0.00	0	0.00		
7	<50000	1	0.69	132813	31.50		

Table 5.2 Population According to Size of Villages 2011

Source: District Census Hand book -2011

Density Pattern village wise:

Data has been collected regarding village wise population and geographical area. Arithmetic density has been calculated by applying that formula

Population Density =
$$4$$
 Total population
Total Geographical area

ra

for the Census year 1951, 61, 71, 81, 91 2001 & 2011. In each census year on the basis of taluka average density, villages are divided in, three groups, (i) villages having taluka average density (ii) villages having More than average density and (iii) villages having less than average density.

Table No. 5.	.3 Classification of	villages according	p to Density	of Population	- 2011
1 4010 1 101 0	o clubbilication of	muges accor any	s to Demoney	of I opulation	

		Villages												
Classification]	1951	1	961	197	71	1	981	1	991	20	001	2	011
	No	%	No	%	No	%	No	%	No	%	No	%	No	%
TAD	1	0.96	2	1.72	0	0	2	1.44	1	0.70	0	0	0	0
>TAD	45	43.26	39	33.62	46	40	41	29.71	49	30.28	43	29.65	41	28.27
<tad< th=""><th>58</th><th>55.76</th><th>75</th><th>64.65</th><th>69</th><th>60</th><th>95</th><th>68.84</th><th>98</th><th>69.01</th><th>102</th><th>70.34</th><th>104</th><th>71.72</th></tad<>	58	55.76	75	64.65	69	60	95	68.84	98	69.01	102	70.34	104	71.72

Source : District Census Hand book 1951-2011

TAD – Tahsil Average Density

>TAD = More than Average Density

<TAD = Less than Average Density

Table reveals that villages having more than talukas average show disparities.

More than average density villages:

These villages are located in the central part of the taluka where about 72% villages were accounted density above the tahsil average The reason for this can be cited as the availability of fertile soil drinking water facility, development of means of transport i.e. road network and trade and the road side developed small and cottage industries are responsible for high density here. In the Ravanwadi revenue Circle, Population density of villages is 492.52, in Dasgaon Circle 449.23 and highest in Gondia Circle i.e. 1809.72. The reason for this is the head quarter of the taluka and district too. This circle is having railway with junction, large market areas, industries, developed means of transport and availability of large no of infrastructural and service facilities i.e. education, health etc.

Less than average density villages:

No. of such villages was 45 in the year 1950 and 49 in the year 1991 decreasing to 41 villages showing 28.27% of the total villages.

Sr.No.	Revenue Circle	Population	Area (Sq. km.)	Population Density
1	Dasgaon	46046	102.5	449.23
2	Ratnara	43317	120.205	360.36
3	Ravanwadi	37382	75.9	492.52
4	Gondia	191660	105.906	<u> </u>
5	Kamtha	36078	90.37	399.23
6	Khamari	34699	68.39	<mark>5</mark> 07.37
7	Gangazhari	36485	103.12	353.81

 Table 5.3.2 Revenue Circle Wise Population Density 2011

Density of Population Circle wise (2011):

It is clear from the table 3.4 that lot of variations are there regarding density of population which range from 1809.72 persons per km in Gondia circle to minimum 353.81 persons in Gangazhari circle. Physiography of Gangazhari is basically hilly region where socioeconomic development is far behind as Compared to remaining revenue circles of the taluka, Khamari and Rawanwadi circles which are located at the vicinity area of the Gondia circle is having density about 500 persons per km². The reason for this high density is the urban impact of the district head quart and connectivity. Over all Ratnara having 306.36 Kamtha 399.23 and Gangazhari 353.81 persons per km². As consider to geographical conditions of these circles, hilly topography, un-irrigated land and comparatively less fertile land is responsible for low density in this zone.

Source: District Census Hand book -2011

Aayushi International Interdisciplinary Research Journal (AIIRJ) UGC Approved Sr.No.64259

 Vol - V
 Issue-III
 MARCH
 2018
 ISSN 2349-638x
 Impact Factor 4.574



Figure no 5.4 A Population Density of Gondia taluka

Figure no 5.4 B Population Density of Gondia taluka

Growth of Population in Circle:

On the basis of the formula G.R. =

Current Year - Base Year X 100 Base Year

From 1951 to 2011 growth rate has been calculated. From the year 1951 to 1961 growth rate of population in the taluka was 12.83% which is showing slow growth rate. In the year 1961 to 1971 period in Khamari, Gangazhari and Kamtha circles villages have counted negative growth rate. The reason was migration of population to other villages.

In the year 1971-81 in all circles death rate was high and during this period, some new village panchayat were formed and due to migration of male population growth rate counted negative here.

In the census 1981-91 again negative growth rate were accounted. The reason was first migration and second low birth rate here.

In the year 1991-2001 growth of population was increased. In this period taluka head quarter become district head quarter. During this period growth of Gondia circle increased as the growth of village population in this circle was high. In other Circles too this synario was found. Out of total 18 villages 39% villages accounted negative growth while 52% positive.

Southern part of the taluka depicts high growth rate. In last ten years some villages accounted adding of more than 50% population e.g. Kudwa, Fulchur, Karanja and Nagpura (Murri). The reason for this growth is the development of Gondia City to this area and expansion of urban centre.



Fig no 5.5 A Population growth rate of Gondia Taluka Fig no 5.5 B Population growth rate of Gondia Taluka

Email id's:- aiirjpramod@gmail.com,aayushijournal@gmail.com | Mob.08999250451 website :- www.aiirjournal.com | UGC Approved Sr.No.64259

Table 5.0 Differential in Natural and Decadal Growth							
Sr. No.	Name of the Village	Natural Growth Rate	Decadal Growth Rate				
1	Dasgaon (Bu)	56.91	8.53				
2	Sonbihari	14.71	10.62				
3	Ravanwadi	58.53	17.90				
4	Chutia	32.72	8.71				
5	Khatiya	9.34	10.83				
6	Dattora	10.22	6.70				
7	Ekodi	20	10.38				

Natural & Decadal growth rate:

Source: District Socio Economic Review, Gondia 2011.

Natural growth rate is the difference between birthrate and death rate of any region. To calculate natural growth rate census of 2005, 2007, 2009 were taken. In every village out of per 000 population birth rate and death rate were accounted. The result reveals 56.91% growth in Dasgaon, 58-53 in Rawanwadi, 32-72 in Chutia and 14.71% in Sonbihri. But when decadal growth is considered Rawanwadi accounted 17.90%, Sonbihri 10.62% Khatia 10.83% and Ekodi 10.38%. This indicated that this growth is different from natural growth. This means that due to high rate of migration from villages this ratio is high. Out of the total 7 circles Dasgaon, Chutia, Rawanwadi villages are having low decadal growth than natural growth eg. in Ekodi it is 20% and in Khatia 9.34%. Here negative natural growth is accounted. Majority of the villages accounted low growth rate. This shows demographic transition phase.

Population Growth regions:

On the basis of growth of population, taluka is divided in three divisions. On the basis of mean and standard deviation, Z score test has been calculated and on the basis of results gained, the villages having more than 24.41% positive growth is assigned HPGR (high population growth region). Where population growth rate is 11.84 to 23.68% is assigned MPGR (Medium Population growth region) and where growth is less than 11.84 assigned LPGR (Low population growth region).

Table 5.7 Regions of population Growth (2011)						
Sr. No.	Type of Population Growth	No. of Villages	% of Villages			
1	H.P.G.R.	18	12.41			
2	L.P.G.R.	80	55.17			
3	M.P.G.R	47	32.41			
	4017	C	0 11 11			

Table 5.7 Regions of	population Growth	(2011)
----------------------	-------------------	--------

Source: Compiled by Author.

H.P.G.R.	-	High Population Growth Region
<i>L.P.G.R</i> .	-	Low Population Growth Region
M.P.G.R	-	Moderate Population Growth Region

High Population Growth Region: (HPGR)

Out of the total 145 villages in the taluka 18 villages are under this category. Different factors are responsible for high population Growth in these villages i.e. the villages where primary health centers transport and communication, Grocery shops are available, growth rate is high.

But one negative factor observed in those villages where growth is high and rate of illiteracy is also high. The villages which are near to taluka headquarter and District headquarter are recorded high population growth like Karanja, Fulchur, Katangi, Nagra and Kudwa. Actually these villages are now became the suber

Aayushi International Interdisciplinary Research Journal (AIIRJ) UGC Approved Sr.No.64259						
/ol - V	Issue-III	MARCH	2018	ISSN 2349-638x	Impact Factor 4.574	

area of the Gondia city and therefore job opportunities are available in these regions. These indicate the transition of rural to urban area.

Low Population Growth Region (LPGR):

In the taluka about 80 villages are under this category sharing 55.17% of the total villages. In this region some villages have recorded negative growth while in some part the growth rate is very low. The reason for this low growth rate is the migration of population from these villages. Apart from this, density of population in those villages is low and the reason for this low density is the conditions unfavorable for agriculture i.e. very low irrigation facilities and comparatively unfertile agricultural land. Due to this jobs is available in a particular period and that's why the level of human resource development is also very low in the region.

Medium Population Growth Region (MPGR):

In the decade 2001-2011 47 villages are having medium growth rate i.e. 11.84%, 23.66%. Round about 70% population of these villages are literate, death rate and birth rate is also moderate and agricultural development of this region is also moderate and that's why the development of human resource is moderate in this region.



Figure No. 5.7 Population Growth Region of Gondia Taluka

The above discussion regarding the density pattern and the growth pattern of population indicates that though the region is micro but variations are high in this taluka. The above study reveals that the villages which are near to urban areas are comparatively more developed than far from the taluka headquarter. The impact of educational facilities, health facilities and job opportunities can be clearly seen in the demographic population structure in the region.

References:

- 1. Agnihotri, S.B. (1995) Sex Ratio Patterns in the Indian Population 'A fresh explanation, sage publications, New Delhi.
- 2. Bhende, Asha A and Kanitkar, T (2000) 'Principles of population Studies, Himalaya Publishing House, Mumbai.
- 3. Hassan, Mohammad Izhar (2005) Population Geography Rawat Publication, PP 117-130.

Email id's:- aiirjpramod@gmail.com,aayushijournal@gmail.com | Mob.08999250451 website :- www.aiirjournal.com | UGC Approved Sr.No.64259

Aayushi International Interdisciplinary Research Journal (AIIRJ)UGC Approved Sr.No.64259Vol - VIssue-IIIMARCH2018ISSN 2349-638xImpact Factor 4.574

- 4. Hassan, Mohammad Izhar (2000) 'Sex Composition of Haryana's population, 'Some evidence of persisting Gender Inequality.''Man & Development'' Volxxii No.1 PP- 61-68.
- Jagdale, Uttamrao, (2002), "Appraisal and Planning of Human resources in Junnar Tahsil, District Pune, Maharashtra. "Ph.D. Thesis University of Pune.
- Kadam, Avinash and Saptarishi, P.G. (2001), "Application of GIS Techniques to Evaluate Human Resource at Micro-Level". Maharashtra Bhugol Shastra Sanshodhan Patrika, Maharashtra Bhugolsshastra Parishad, Vol XV No. 1, pp-37-50.
- 7. Kundu, A and Sahu, M.R. (1991), "Variations in Sex Ratio, Development complications, "Economic and Political weekly.
- 8. District Census Hand book, Gondia -1951-2011.
- 9. District Socio Economic Review, Gondia 2011.

