



## A Geographical Analysis on Population Growth of Uttar Dinajpur District, West Bengal, India

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### ABSTRACT:

Population studies have for a long been the subject of concern for social scientists including geographers. In geography, the study of population growth has been the focus of traditional human geographers since long. In the census of 1951 total population of Uttar Dinajpur was 528607 persons and in the census 2011 the total population was 3007134 persons. Hence during the period of 60 years about 2478527 persons increased. This increase of population was humongous for such a small district. The total area of the district is 3142 sq. km. Several numbers of socio- economic problems are taking place in the district. Though the growth rate of population of Uttar Dinajpur has increased slowly in the last couple of decades, lots of measures have to be taken to control such huge population growth of the district. Uttar Dinajpur is amalgamation of various religions, castes and cultures. Each religious group have their own belief on fertility. There is no fixed concept of taking number of children. Naturally after the independence growth rate was sky rocketing. After the decades of 1990s peoples of the district realized pressure of overpopulation started to seize the population growth along with several governments in initiatives. Still we have to go long way to achieve the optimum population for the district.

**Keywords:** Population, Census, Growth Rate, Fertility, Optimum Population, Uttar Dinajpur

### 1.Introduction:

Population status is a vital developmental indicator of the nation. It is key variable of measure of development and also indicates the quality of life and level of skill of people in society. Greater population levels definitely have a negative impact on poverty trap, conflict trap, health problem and low standard of living. Population growth rate is the rate at which the number of individuals in a population increases in given time period, expressed as fraction of the initial population. The regional demography of Uttar Dinajpur district has undergone continuous change over the period of time. The population growth rate fluctuates with a unique character is demographic history of Uttar Dinajpur. In 2011 census 13.9 percentage of population growth in West Bengal and in Uttar Dinajpur district it is 23.15 percentages. About three fourth of the study region's population living in rural areas indicating that population of the district are basically depending on agriculture and other primary activities.

### 2. Growth of population: Basic concept:

**Growth Rate:** - Growth of population is the change in the number of people living in a particular area between two given points of time. The net change between two points of time is expressed in percentage and is described as the growth rate of population.

**Natural Growth:** - The difference between the birth rate and the death rate is called the natural growth of population.

**Migratory Growth:** - This growth of population is caused by the migration of population.

**Positive Growth:** - When the population increases between the two given points of time, it is called positive growth. It takes place when the birth rate is higher than the death rate or people migrate from other countries.

**Negative Growth:** - when the population decreases between two given points of time, it is called negative growth. It takes place if the birth rate is lower than the death rate or people migrate to other countries.

**Decadal Growth Rate:** - Growth of population between two successive decades is known as decadal growth rate.

**Exponential Growth Rate:** - A growth rate which is constant over time and in which number increases as a constant proportion of number at a previous time i.e. growth which is geometric rather than arithmetic. When plotted on normal arithmetic graph paper an exponential rate of growth will appear as a rising curve but on semi- logarithmic paper it will appear as a straight line.

### 3. Objectives:

- To show the pattern of population growth rate of Uttar Dinajpur District.
- To study the block wise spatial pattern of population growth during 2001-2011.
- To depict the comparative analysis of population growth in India, West Bengal and Uttar Dinajpur.

### 4. Source of Data:

The present study is based on secondary sources of data, collected from different year's census hand books, Districts census hand books, Journals papers, Thesis papers and different books. The data are compiled from various secondary sources to build the original data base.

### 5. Methodology:

Qualitative and quantitative approaches were used in methodology. Data analysis converts from absolute to percentage and ratio. Several diagrams have been used to interpret the data. Following formulas have been applied to calculate the population growth of the study area.

- **Decadal Growth Rate :-**

$$\text{Decadal Growth} = \frac{P - P_i}{P_i} * 100$$

Where,

**P** = Total population of present

**P<sub>i</sub>** = Total population of previous year

- **Population mean :-**

$$\text{Population Mean} = \frac{(\sum X)}{N}$$

Where,

**X** = All Individual population

**N** = Number of observations

- **Index of Growth :-**

$$\text{Index of Growth} = \frac{\text{Actual Population}}{\text{Base Year Population}} * 100$$

- **Index of concentration :-**

$$\text{Index of Concentration} = \frac{\text{Actual population}}{\text{Average population}}$$

### 6. Study Area:

Bifurcation of the erstwhile district West Dinajpur on 1st April in the year 1992 gave birth to Uttar Dinajpur district, a narrow strip of land between Bihar and Bangladesh extending from north to south. Uttar Dinajpur district lies within the coordinate of latitude 25°11'N to 26°49'N and longitude 87°49'E to 90°00'E occupying an area of 3142 Sq. Km enclosed by Panchagarh, Thakurgaon and Dinajpur district of Bangladesh in the east, Kishanganj, Purnia and Katihar districts of Bihar on the west, Darjeeling district and Jalpaiguri district on the north and Malda district and Dakshin Dinajpur district on the south.

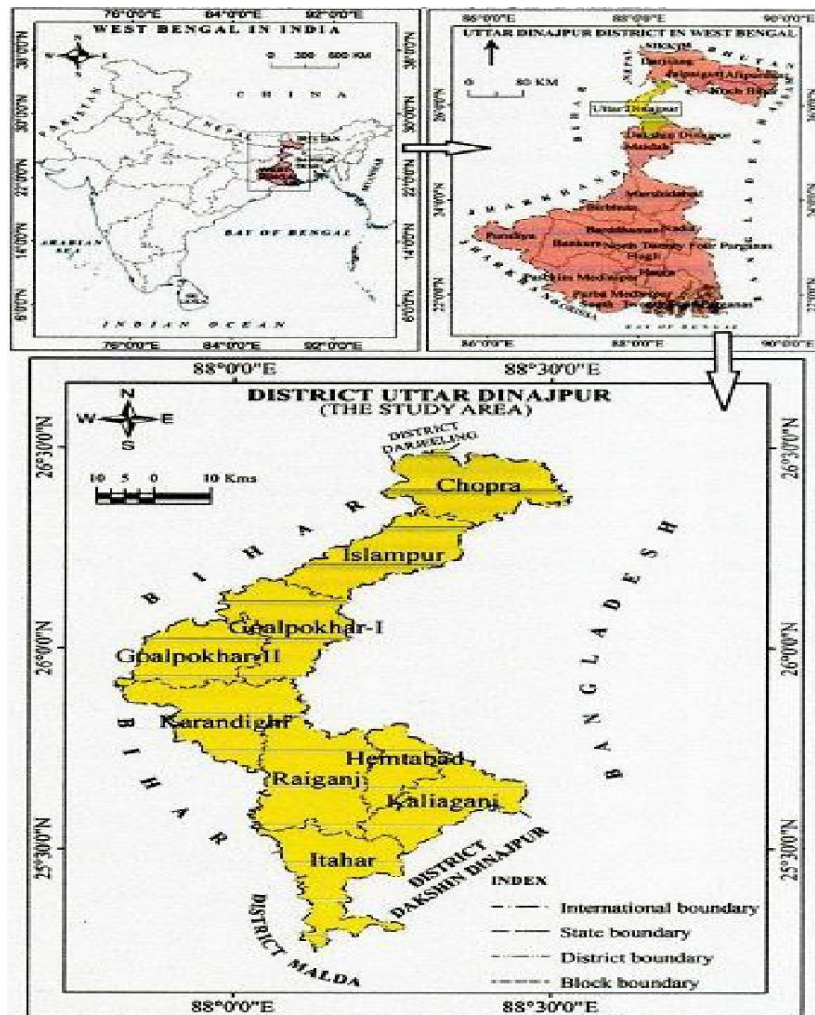


Figure 01: Location map of study area

## 7. Result and Analysis:

### i. Population growth rate in Uttar Dinajpur District (1951-2011):-

In the following table it is clear that the population growth rate of Uttar Dinajpur district has fluctuated from the census of 1951 to 2011. Highest population growth rate was 43.81% in the census year of 1961 and the lowest population growth rate was 23.15% in the census year of 2011. It should be notable that the population growth rate decreased in the census year of 1981 (30.20%) and again it increased in the census year of 1991 (34%).

Table 01: Population growth rate of Uttar Dinajpur

Sl. No	Census	Total	Male	Female	Growth rate (%)
1	1951	528607	284214	244393	—
2	1961	760199	402722	357477	43.81
3	1971	1087269	569848	517421	43.02
4	1981	1415653	733303	682350	30.20
5	1991	1897045	987771	909274	34.0
6	2001	2441794	1259737	1182057	28.72
7	2011	3007134	1551066	1456068	23.15

Source: Census of India (2011)

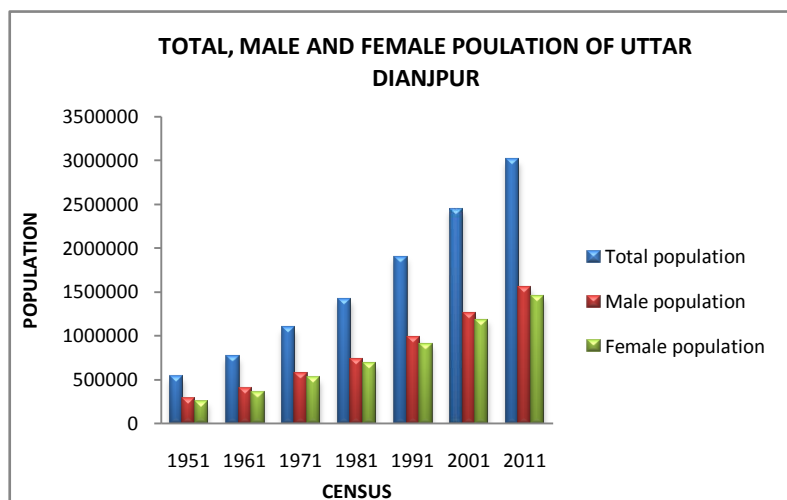


Fig 01: Bar Diagram showing the total, male and female population

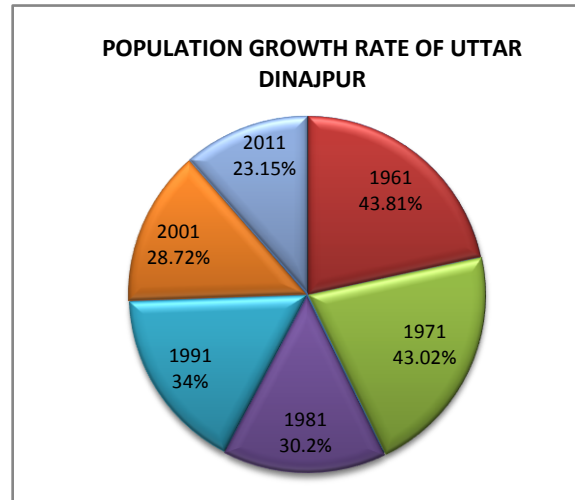


Fig 02: Pie chart showing the population growth rate

#### Comparative growth rate of population (1951-2011):-

When we compare the population growth rate of Uttar Dinajpur with West Bengal and India, then it is evident that the growth rate of the Uttar Dinajpur district is pretty higher than the state and national growth rate of population. Highest growth rate of the district was 43.81% in the year of 1951-1961 whereas population growth rate of state and nation were 32.8% and 21.6% respectively. In the year 2001-2011 population growth rate of the district was 23.15% and on the other hand population growth rate of West Bengal and India were 13.9% and 17.7% respectively. State population growth rate (2001-2011) was lower than the national population growth rate but yet district population growth rate was higher than the state and national level.

**Table 02: comparative growth rate of population**

Census year	Growth rate of population (1951-2011)		
	India (%)	West Bengal (%)	Uttar Dinajpur (%)
1951-1961	21.6	32.8	43.81
1961-1971	24.8	26.9	43.02
1971-1981	24.7	23.2	30.20
1981-1991	23.9	24.7	34.0
1991-2001	21.5	17.8	28.72
2001-2011	17.7	13.9	23.15

Source: Census of India (2011)

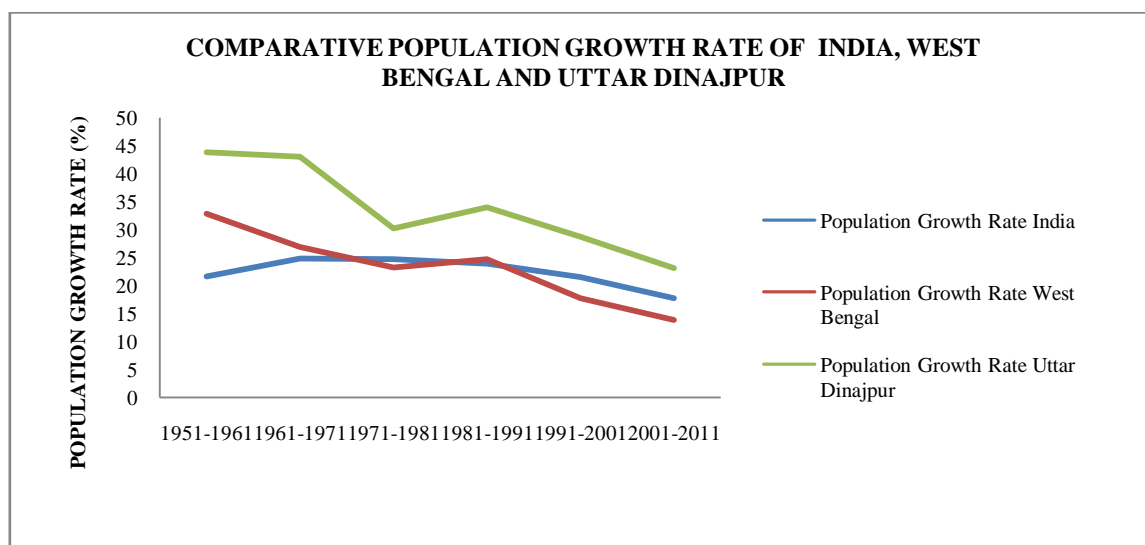


Fig 03: Line Diagram showing the comparative population growth rate

### ii. Block wise population growth rate of Uttar Dinajpur 2001- 2011:-

The given table shows the block wise population growth rate of Uttar Diaper district (2001-2011). In 2011-2011 highest population growth rate was 44.91% in Goalpokhar-II, whereas lowest population growth rate was recorded 15.50% in Karandighi block. Out of total nine blocks only four blocks (Karandighi, raiganj, Hemtabad&kaliaganj) had population growth rate lower than 20% and rest of blocks (Chopra, Islampur, Goalpokhar-I, Goalpokhar-II&Itahar) were staying on the population growth rate well above 20%.

**Table 03: Block wise population growth rate**

Name of the blocks	2001	2011	Growth rate (%)
	Total population	Total population	
Chopra	223022	284403	27.52
Islampur	294689	362858	23.13
Goeapokhar-I	245430	326120	32.87
Goeapokhar-II	226472	328182	44.91
Karandighi	318881	368332	15.50
Raiganj	527268	613833	16.41
Hemtababd	118822	142056	19.55
Kaliaganj	237669	277672	16.83
Itahar	249541	303678	21.69

Source: District Census Hand Book, Uttar Dinajpur, 2011

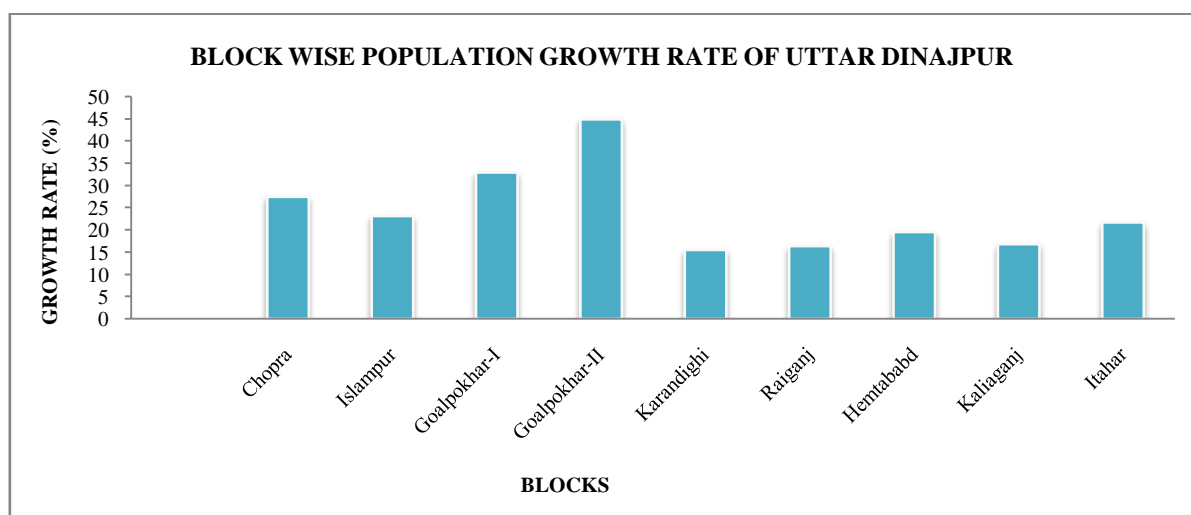


Fig 04: Bar diagram showing the block wise population growth rate

### iii. Block wise male female population growth rate of Uttar Dinajpur (2001-2011):-

From the following table we can take a clear idea of block wise male and female population growth rate of Uttar Diaper district in 2001-2011. Maximum male and female population growth rate were 45.05% and 44.76% in Goalpokhar-II block. Meanwhile, the minimum male and female population growth rate were 15.12% and 15.92% in Karandighi block. In Chopra, Goalpokhar-I, Goalpokhar- II and Itahar male population growth rate was higher than the female population growth rate in 2001-2011, whereas in the rest of the five blocks female population growth rate was higher in comparison to male population growth rate.

**Table 04: Block wise male female population growth rate**

Name of the blocks	2001		2011		Growth rate of male (%)	Growth rate of female (%)
	Male population	Female population	Male population	Female population		
Chopra	115097	107925	147073	137330	27.78	27.25
Islampur	152408	142281	187160	175698	22.80	23.49
Goalpokhar-I	126465	118965	169954	156166	34.38	31.27
Goalpokhar-II	116758	109714	169355	158827	45.05	44.76
Karandighi	163811	155070	188572	179760	15.12	15.92
Raiganj	274306	252962	318126	295707	15.97	16.90
Hemtabad	61192	57630	72624	69432	18.68	20.48
Kaliaganj	122405	115264	142425	135247	16.22	17.34
Itahar	127295	122246	155777	147901	22.37	20.99

Source: District Census Hand Book, Uttar Dinajpur, 2011

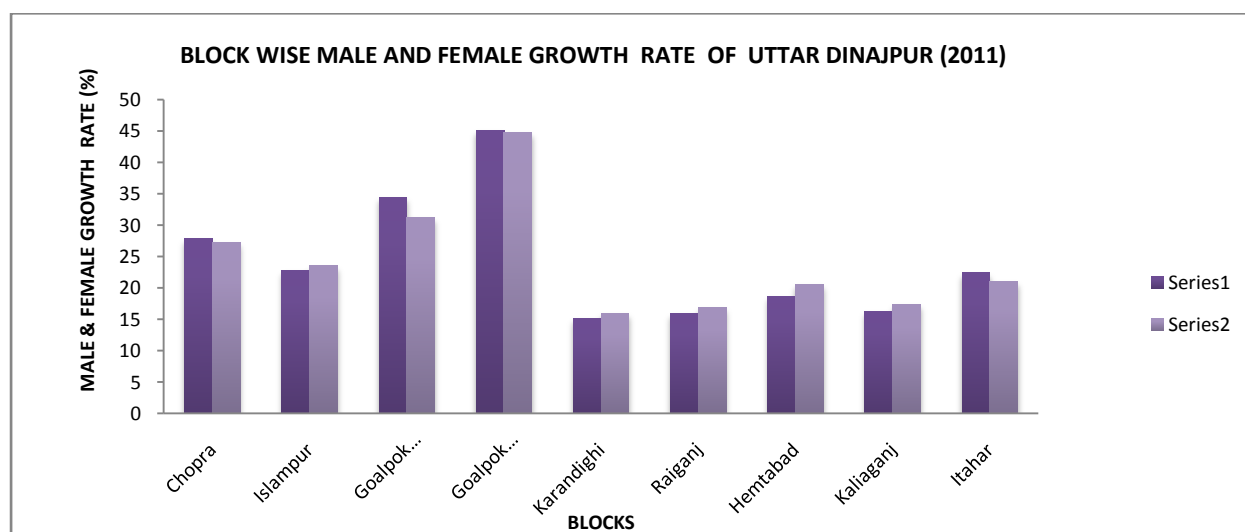


Fig 05: Mixed bar diagram showing the block wise male female growth rate

#### v. Index of population growth in Uttar Dinajpur (1951-2011):

In the index of population growth of Uttar Dinajpur district 1951 census year is taken as a base year to calculate the index of population growth. Following table depicts the index of population growth of the district from 1951-2011. Index of population growth was 100 in the aforesaid base year, after that it was increasing rapidly from 100 (1951) to 568.879 (2011). So it is very clear that from the census year of 1951 to 2011 population was increasing very quickly.

**Table 05: Index of population growth of Uttar Dinajpur**

Census year	Population	Index of growth (1951-2011)
1951	528607	100
1961	760199	143.812
1971	1087269	205.686
1981	1415653	267.808
1991	1897045	358.876
2001	2441794	461.930
2011	3007134	568.879

Source: District Census Hand Book, Uttar Dinajpur, 2011

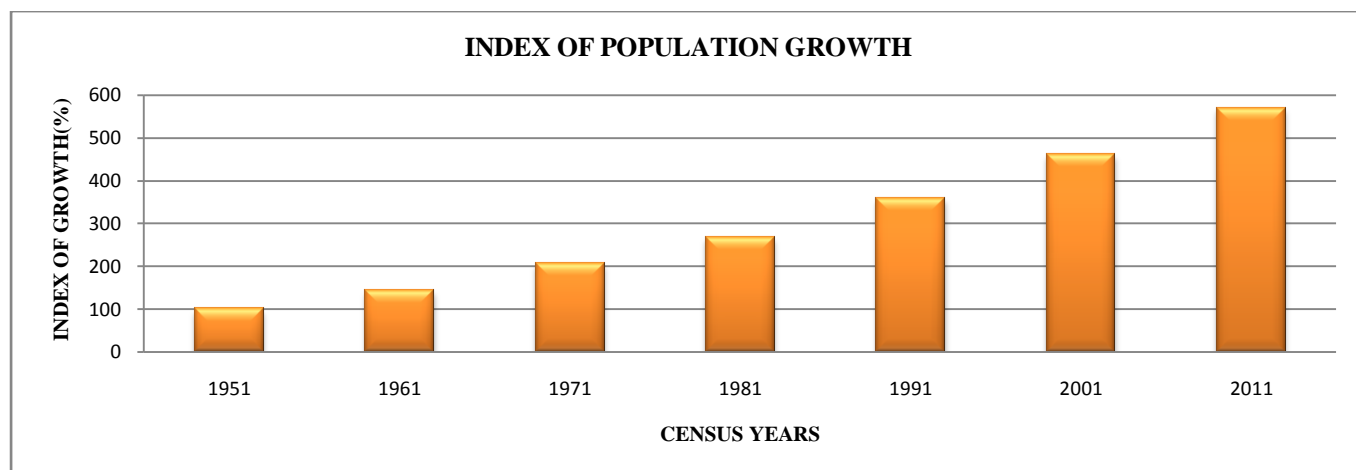


Fig 06: Simple bar diagram showing the index of population growth

#### vi. Block wise index of population growth in Uttar Dinajpur district:-

In the given table block wise index of population growth of Uttar Diaper district is being shown. Base year of total population is taken the total population of 2001. Maximum index of population growth was in Goalpokhar-II and lowest index of population growth was in karandighi block.

**Table (06): Block wise index of population growth rate**

Name of the block	Population of 2001	Population of 2011	Index of growth (2001 Base year)
Chopra	223022	284403	127.522
Islampur	294689	362858	123.133
Goalpokhar-I	245430	326120	132.877
Goalpokhar-II	226472	328182	144.911
Karandighi	318881	368332	115.508
Raiganj	527268	613833	116.418
Hemtabad	118822	142056	119.554
Kaliaganj	237669	277672	116.831
Itahar	249541	303678	121.695

Source: District Census Hand Book, Uttar Dinajpur, 2011

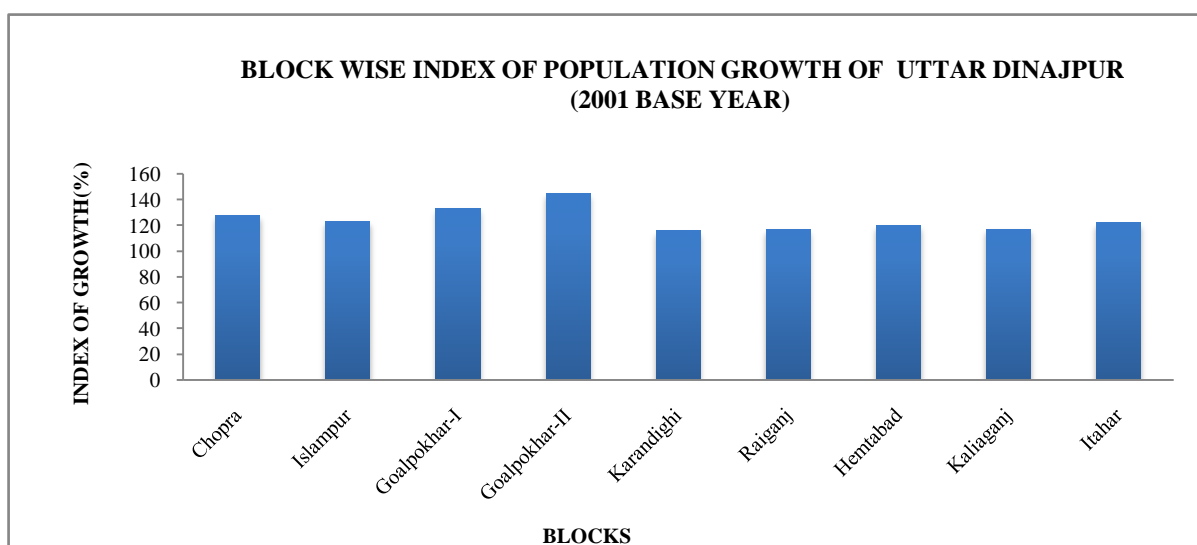


Fig 07: Simple bar diagram showing the block wise index of population growth rate

### vii. Changing pattern of block wise index of population concentration in Uttar Dinajpur district, 2001-2011:-

Following table illustrates the index of population concentration of Uttar Dinajpur district of 2001 and 2011. Maximum index of population concentration was in Raiganj block in 2001 and 2011 respectively, whereas minimum index of population concentration was in Hemtabad in 2001 and 2011 respectively. If we observe in the changing of index of population concentration then we can say that in Islampur, Karandighi, Raiganj, Hemtabad, Kaliaganj and Itahar blocks changing index of population concentration were negative from 2001 to 2011, whereas in the rest of the three blocks index of population concentration was positive from 2001 to 2011.

**Table (07): Changing of index of population concentration**

Name of the blocks	Population of 2001	Index of concentration (2001)	Population of 2011	Index of concentration (2011)	Changing of index of population concentration (2001-2011)
Chopra	223022	0.822019	284403	0.851185	0.029166
Islampur	294689	1.086171	362858	1.085992	-0.000179
Goalpokhar-I	245430	0.904611	326120	0.976039	0.071428
Goalpokhar-II	226472	0.834735	328182	0.982210	0.147475
Karandighi	318881	1.175338	368332	1.102375	-0.072963
Raiganj	527268	1.943415	613833	1.837130	-0.106285
Hemtabad	118822	0.437957	142056	0.425157	-0.012800
Kaliaganj	237669	0.876005	277672	0.831040	-0.044965
Itahar	249541	0.919763	303678	0.908873	-0.010890

Source: District Census Hand Book, Uttar Dinajpur, 2011

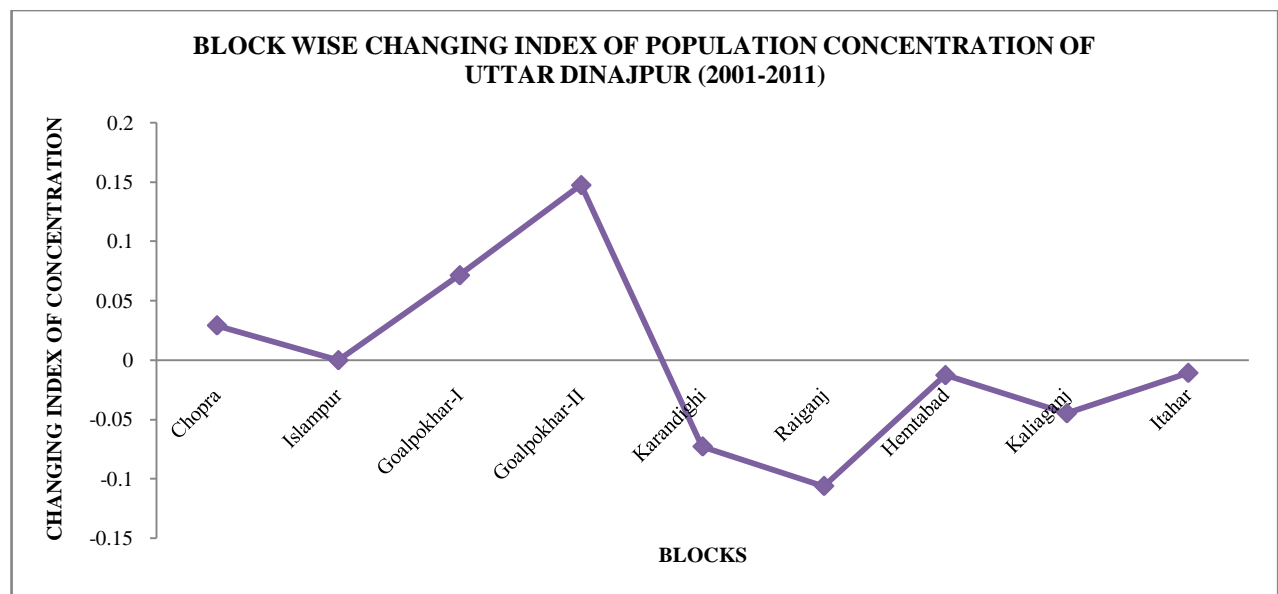


Fig 08: Simple line diagram showing the changing block wise index of population concentration

### 8. Major findings:-

- After 1951 population growth rate started to decrease except 1991, where population growth rate increased in Uttar Dinajpur district.
- The population growth rate of the study area is higher than the state and national population growth rate over the periods of time.
- Goalpokhar-II and Goalpokhar-I had the very high population growth rate (2001-2011) than the rest of the blocks of the study area.
- Both male and female growth rate were excessively high in Goalpokhar-II than the other blocks of Uttar Dinajpur (2001-2011).



- From 1951 census to 2011 census index of population growth of the study area had increased rapidly.
- Index of population growth of Goalpokhar-II was very high in 2011 which indicates population of that block had increased rapidly due to the existence of huge amount of Muslim community.
- In Raiganj negative changing of index of population concentration was very high which depicts that population of Raiganj block is increasing slowly.

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## 10. Conclusion:-

Uttar Dinajpur is a resource full district but there is huge pressure of gradually increasing population on that certain amount of resources. Uttar Dinajpur is in the way of development with its physical, cultural and human resource, the problem of overpopulation always stands like a hindrance on the development process. Rapid growth of population also affected the social and educational development of the district. Consequently Uttar Dinajpur stands at the bottom of the literacy rate list of West Bengal in the census of 2011. Quick population growth in the district has brought about crucial problems and hardships to the people in the form of unemployment, underemployment and other social problems. Therefore the state Government should take more initiatives to check the rapid population growth and overall population awareness is inevitable at first in this burning matter of the district.

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