



Population Dynamics And Changing Pattern Of Population Growth In Katihar District: A Comparative Analysis

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Abstract:

Population is a key element for a reason. It represent a community of one or more people living any area. Population is always changing in the context of time and space. that is increase in its qualitative and quantitative characteristics is its natural characteristic. This dynamic trend of population is the result of physical, economic and cultural element, which are controlled by three basic determining factors like fertility, mortality rate and migration. Althrough population growth is a boon for less prosperous and resource rich areas. It provides them new opportunity for development and extensions. However, in densely populated area, it becomes a matter of problem due to decreasing resource and increasing population burden. Since population growth, distribution and structure are seen to have very close relationship with land use, land cover and global climate change. increasing population also affect the demand of any other types of physical resource. As a result, analysis of population growth has been carried out over the period of time by various social scientist, geographers, and planners with reference to several aspects such as jeo-temporal, rural, urban, social economic, religious, regional, age and sex structure, working and non-working, educated and uneducated etc. Therefore in the present context it is a very important to study the negative effect of increasing population and population growth.

This research paper present in analysis of the temporal-special pattern of population growth and its distribution in the contest of Katihar district Bihar, which is mainly based on secondary data. There is considerable variation in the population growth and distribution pattern of study area with respect to time and space. according to the 2011 census the total population of the district is 3071 029. 91.01% of it's live in villages while 8.9% live in urban bodies. Kadwa block is the block with highest population and hasanganj is the block with the lowest population bansahi block has the highest decided population growth of 34.6% and kursela block has the lowest population growth 20.6%. According to the presented research paper, the population of the study area is continuously increasing at the rapid pace.

Keywords : Natural resource, Global Change, Land use , Population change, Fertility, Mortality and Migration.

Introduction:

Special and temporal changes in the population group are called population growth (Clerk 1972). In the specific context of place, society, socio-economic and political development, continuous change has been experienced in the population and its various demographic characteristics. Any given region's population growth, distribution, and density pattern are determined by its social, economic, and geographic components. The three main elements influencing the population change process mentioned above are migration, births, and deaths. People migrate, which can either result in a decrease or gain in population depending on the direction of their movement, and people are born, which causes an increase in population, and people die, which causes a loss in numbers. A natural decrease happens when there are more deaths than births in a specific area, while a natural gain happens when there are more births than deaths. More migration benefits arise when more individuals move into an area than leave it within a specific time frame. Therefore, net migration and natural rise or decline in population are factors that affect population changes in a given area.

The world's most populous nation is India. Although our nation is home to nearly 16.87% of the world's population, it only occupies 2.4% of the planet's land area. In a similar vein, Bihar ranks 12th and 3rd in India's population and area rankings, respectively, and Katihar is 12th and 14th in these rankings for Bihar's districts, respectively. The majority of people in our nation, including people from Katihar, reside in villages, which suggests that agriculture and other activities are the main sources of our income. Nonetheless, migration of a huge number of people from various parts of the country each year in search of a better life and quality of life also plays a significant role in India's numerous census years and practically all of its reasons. Any area's population is always shifting due to the three main variables mentioned above. The state government uses census data to gather information on population changes, including distribution density and other demographics, in order for them to be able to plan effectively.

Among the most crucial factors in population research are the size of the population and how it is distributed geographically. These factors have a direct bearing on the likelihood of population growth and decline, the state of the economy, the age distribution, and other features of the population. For programs pertaining to agriculture, health, education, transportation, housing, urban renewal, law enforcement, and waste disposal to be managed fairly, data on population number and distribution is essential.

Objective:

The main objective of the present research paper is to study the changing pattern of population growth rate during the period 1991-2011 as a result of population dynamics in the context of Katihar district. Apart from this, another objective of research work is to study the change in block-wise population distribution and growth rate in the district from the year 1971 to 2011.

Data base:

The presented research paper is basically based on secondary data. This study focuses on comparative analysis of temporal and spatial growth and distribution pattern of population in Katihar district. That is the nature of the study is descriptive and analytical. Data from 1901 to 2011 have been calculated to show the trend of population growth rate. Block-wise data from 1971 to 2011 have been compiled from district census report to explain the changing pattern of population growth rate and distribution in the district.

In the study area, the population change's total growth rate is expressed as a percentage. The quantity of population changes in a unit during a given time period is referred to as the population growth rate, which has been computed. The negative sign denotes a decline in population owing to emigration and death, whereas the positive sign shows an increase in the overall population as a result of incoming immigrants. Population growth is represented by a zero-growth rate in the table, where immigration and births are the primary drivers of positive growth and mortality and emigration of negative growth. That is, a population that is stable is indicated by a zero

difference in the rates of births, deaths, and migration. Within the Katihar district, the variation in the population's spatiotemporal growth rate has been calculated using the subsequent formula:

Formula -:

$$PGR = \frac{P_1 - P_2}{P_1} \times 100$$

Where,

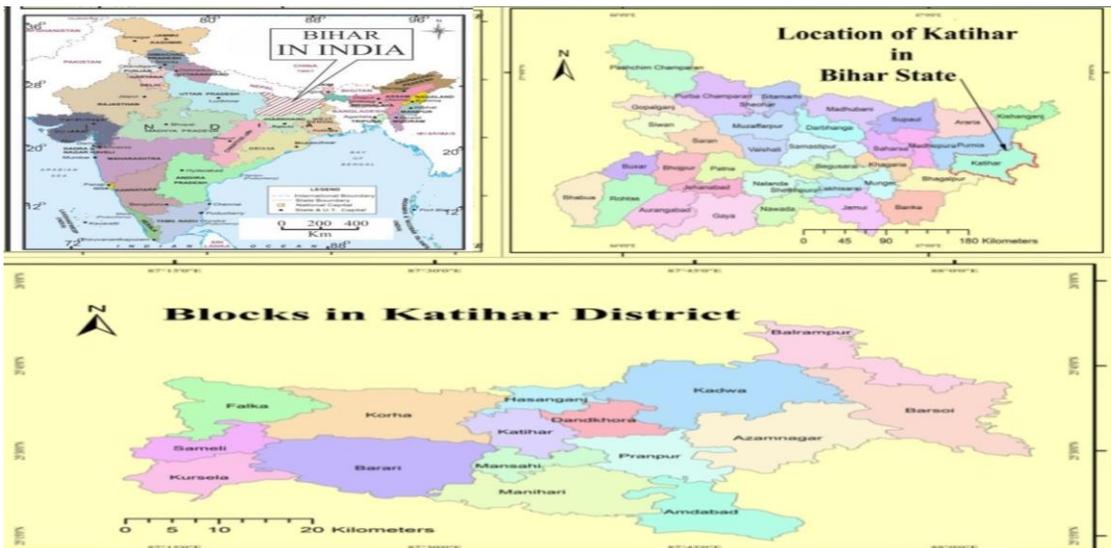
PGR =Population Growth Rate.

P₁ = The Population Of X District in The Letter Decade,

P₂ = The Population of X District in The Letter Decade

Study Area:

Katihar district is located in the eastern part of Bihar State its total area is 3057. 01 kilometre square. Extending from 25° 42 - 26° 22' North latitudes and 87° 10'-88° 5' East longitudes. This district is confirmed by purnea district to north and West, Bhagalpur and sahibganj district to south, and Dinajpur aur Malda district to East (fig. No. -1.).



This district with a population of about 30 lacs has a rural background. about 91.1% of its total population lives in 1540 villages, and their main source of livelihood is agriculture. Only 8.9% of the population lives in urban areas and is engaged in other economic activities. Situated in the eastern part of Bihar this completely plain land area provides excellent condition for agriculture. Monsoon climate, flat surface, fertile land, good means of irrigation and adequate rainfall encourage the production of wheat, paddy, maize, makhana, banana, potato, pulses, oil seeds, tobacco, coarse grains and other fruits and vegetables. Therefore, if flood are converted from problems of the reason to a possibilities, then it will be very helpful in the economic development of the reason including the farmers here. Apart from this, there are many problems in the district like high population growth rate, high population density, imbalanced sex ratio, low literacy rate, poverty, unemployment and migration which are obstructing its rapid economic development. Extensive efforts are yet to be solve these problems.

Fact Analysis:

Population is a key component of a reason. The changing pattern of population with the reference to time and space is its natural characteristics. Population with high quality demography characteristics play a vital role in the socio-economic and cultural development of a reason. As we know, population is the mother of both problems and possibilities for a reason. While a balanced and efficient population represent rapid economic development on the contrary, an uncontrolled and unskilled population becomes a burden and causes economic backwardness. The population of the district has been increasing at a rapid pace in various census years. There is a lot of diversity in its growth and distribution pattern from the regional and special perspective. In this research paper, the differences in the growth and distribution pattern of population have been studied on the basis of secondary data. After 1961 almost every census year recorded high decadal population. On the contrary, if we talk about special variation, the population growth rate was different for all blocks in different census years. The growth rate of all blocks can be seen between 20 to 40% in almost all the census years except Manihari in 1971- 81 and Falka, Hasanganj, Katihar and Mansahi in 1981-1991. The detailed analysis of the temporal and special differences in the growth and distribution pattern of population is as follows.

In this research paper based on secondary data, an attempt has been made to analyse the temporal and special variation in the population growth rate and distribution pattern of Katihar district.

Katihar District: Temporal Variation in Population Growth rate:

Table number 1 and figure number 2 show the temporal changes in population growth rate of the research area during 1901 to 2011 in the context of rural Urban and total population. An observation of the above table and figures make it clear that has always been a positive growth in the population of the study area. In the period of 1921, famous as the demographic dividing year in the history of census, while the population growth rate was recorded negative in almost all part of the country, in Katihar district, even during this period 6.5% growth was recorded in rural areas 42.2% in urban areas while the total population was grew by 6.8%.

During the various decades from 1901-1951 the population growth rate was much lower than the present, but positive. During this period the spread of various type of infectious diseases, frequency of epidemics, war and the tragedy of partition can be considered the reason for low population growth. After 1951, planned efforts, where initiated for the economic development of the country and improvement in the quality of life through various 5 years plan. Gradually, due to improvement in health service sector and reduction in the frequency of infectious disease and epidemic and expected decrease was recorded in the mortality rate but due to the low socio-economic status of women, illiteracy, social-religious belief, desire to have a son, lack of awareness, low marriage age and the weakness for family welfare and family planning programs the birth rate remained at its highest level. As a result, a sharp jump was seen in the population growth rate of the country and its various parts. During the period 1951 to 1961 the total population of Katihar district registered a growth of 31.1%, which was 25% more than the previous decade. And increase of 30.1% and 40.01% was observed in rural and urban areas respectively. This growth on 26.7% and 20.8% less than the previous decade. During 1961 to 1971, the population growth rate here decreases by 6.8% compared to the previous decade and total population growth rate become 24.8%. thereafter, during the decadal period 1971- 1981 and 1981 - 1991, an increase of 25.6% and 27.8% respectively was recorded.

Table No. 1 Katihar District: Population Growth rate at Each Census Year from 1901- 2011

Year	Total Population			Decadal Population Variation		
	Total	Rural	Urban	Total	Rural	Urban
1901	484,667	474,906	9,761	-	-	-
1911	520,805	510,586	10,219	7.5	7.5	4.7
1921	556,136	541,603	14,533	6.8	6.1	42.2
1931	601,533	585,669	15,864	8.2	8.1	9.2
1941	654,841	62,515	26,326	8.9	7.3	65.9
1951	694,986	652,621	42,365	6.1	3.8	60.9
1961	911,037	851,693	59,344	31.1	30.5	40.1
1971	1,136,994	1,056,873	80,121	24.8	24.1	35.0
1981	1,428,622	1,294,025	1,34,597	25.6	22.4	68.0
1991	1,825,380	1,653,761	1,71,619	27.8	27.8	27.5
2001	2,392,638	2,174,361	2,18,277	31.1	31.5	27.2
2011	3,071,029	2,797,207	2,73,822	28.4	28.6	25.4

Source: District Census hand Book of Katihar, 2001 and 2011

During the decadal period 1991-2001 while almost all the parts of the country experienced a decrease in the population growth rate, Katihar district also registered a positive growth of 2.3% during this period compared to the previous decade. The total population of the study area increased by 31.1% to 23,93,638 persons in 2001. The rural area recorded a growth of 31.5% and the urban area 27.2%. According to the 2011 census, the total population of the region increased by 28.4%, the rural area 28.6% and the urban area 25.4% which is 2.7% 3.1% and 1.8% less respectively as compare to 2001.

It is clear from the above analysis that the population growth rate of Katihar district has been different in different period. Although the rural population growth rate almost follows the district average, there is a lot of fluctuation in the Urban population growth rate. There are certainly signs or it's decrease in the 2011 census but it is still much higher than the national in state average. Population control is extremely necessary for rapid and balanced economic development. Therefore, in the context of the study area meaningful and ground level efforts are yet to be made in this direction on a wide screen.

Katihar District: Block-Wise Population Growth Rate and Distribution of Population

The geographic agreement of the population inside the actual state borders is known as population distribution. (1) Geographical factors, such as climate, terrain, soil, and natural resources; (2) economic, social, and political factors, such as the nature of economic activity and the structure of social organization; and (3) demographic factors, such as variations in growth rates between areas due to variations in birth, death, and migration rates, are the main determinants of the pattern of population distribution.

As far as we are aware, Ganga and its tributaries formed the flat plain that makes up the study area. Aside from the Ganga, rivers such as the Kosi, Mahananda, Righa, Baraundi, and Kari Kosi are infamous for wreaking havoc on their surroundings by inundating a significant portion of their territory nearly annually. The addition of fresh sediment by these rivers creates the perfect environment for farming, which in turn draws human settlement. Twelve blocks total—Falka, Sameli, Kursela, Katihar Manihari, Barari, Mansahi, Azamnagar, Amedabad, Pranpur, and Balrampur—of the district's sixteen are situated along the flow paths of significant rivers, including the Ganga Kosi and Mahananda. Despite the terrible tragedy of flooding that strikes this area almost annually, there has been a noticeable increase in population density in this area. This is largely because there is a lot of fertile, arable land, which facilitates high productivity and irrigation, among other things. Along with various fruits

and vegetables, the district produces a lot of Rice, Wheat, Maize, Bananas, Oil seeds, Makhana, Pulses, Coarse grains, and Tobacco.

Table No. 2 Katihar District: Block-wise Decadal Population Distribution and Population Growth Rate Pattern

Sl. No.	Blocks	Total Population					Decadal Population Variation (%)			
		1971	1981	1991	2001	2011	1991-81	1981-91	1991-01	2001-11
1.	Falka	88,513	108,450	92,212	121,588	155,663	22.5	-14.9	31.9	28.0
2.	Korha	96,165	123,377	154,784	210,656	282,813	28.3	25.4	36.1	34.3
3.	Hasangang	-	-	35,567	42,886	55,906	-	-	20.6	30.4
4.	Kadwa	125,657	159,343	201,563	268,917	346,902	26.8	26.4	33.4	29.0
5.	Balrampur	52,269	67,206	88,803	122,541	158,976	28.6	32.1	38.0	29.7
6.	Barsoi	120,166	151,432	200,118	262,402	344,113	26.0	32.1	31.1	31.5
7.	Azamnagr	155,118	143,798	190,116	247,002	315,610	26.0	32.2	29.9	27.8
8.	Pranpur	80,581	97,874	84,783	112,607	144,297	21.5	-13.4	32.8	28.1
9.	Dandkhora	-	-	39,068	54,172	68,055	-	-	38.7	25.6
10.	Katihar	166,404	219,661	205,540	264,716	321,817	32.0	6.4	28.8	21.6
11.	Mansahi	-	-	47,050	62,581	84,257	-	-	33.0	34.6
12.	Barari	142,219	178,721	171,634	220,955	285,381	25.7	-4	28.7	29.2
13.	Sameli	-	-	53,340	67,261	84,486	-	-	26.1	25.6
14.	Kursela	-	-	41,473	52,997	63,928	-	-	27.8	20.6
15.	Manhari	84,275	96,835	118,328	149,250	191,407	14.9	22.1	26.1	28.2
16.	Amdabad	65,633	81,925	101,001	132,107	167,398	24.9	23.3	30.8	26.7
17.	Total	1,136,994	1,428,622	1,825,380	2,393,638	3,071,029	25.6	27.8	31.1	28.4

Source: District Census Hand Book, 2001 and 2011

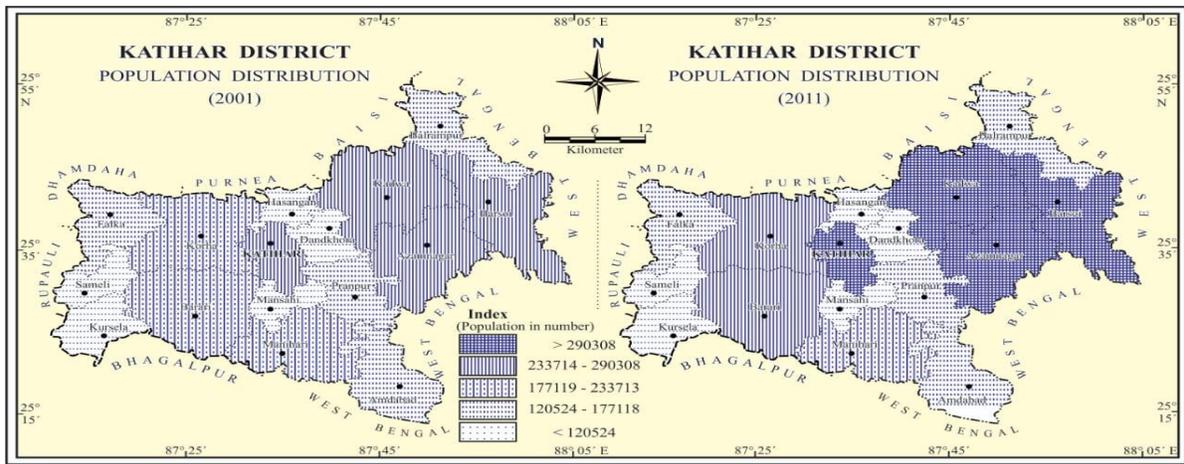


Fig No. 3 Katihar District: Block-wise Population Distribution

The above table no. 2 and figure no. 3 show the block-wise population growth and distribution pattern of the district. There is a lot of diversity in the population growth and distribution pattern at the block level in different census year. In 1971, the total population of study area 1136 994 person. 93.0% of the total population lived in villages while only 7.0% lived in cities. During this period, the only urban body of Katihar district was included in Katihar block, where the total Urban population was concentrated. Katihar block had the highest population and Balrampur block had the lowest population. In the decade 1971-81 while the average population growth rate of the study area was 25.68%, at the block level, this growth rays in Katihar block was much higher than the district average highest 32.1%, Manihari block witnessed the lowest growth of 14.9%., Kodha and Balrampur where the block with the second and third highest population growth respectively. In the 1981 the total population of the district was 1,428,622 persons.

Table No.4 Block-wise Population Growth Rate

Category	Census Years			
	1971-1981	1981-1991	1991-2001	2001-2011
Low (Below 25)	Falka, Prampur, Manihari	Falka, Prampur, Katihar, Barari, Manihari	Hasanganj,	Kursela, Katihar
Medimum (25-30)	Kodha, Kadwa, Balrampur, Barsoi, Azamnagar, Barari,	Kodha, Kadwa,	Azamnagar, Katihar, Barari, Sameli, Kursela, Manihari	Kadwa, Balrampur, Azamnagar, Prampur, Dandkhora, Barari, Sameli, Manihari
High (Above 30)	Katihar	Balrampur, Barsoi, Azamnagar	Falka, Kodha, Kadwa, Balrampur Baesoi, Prampur, Dandkhora, Mansahi, Barari	Kodha, Hasangang, Baesoi, Mansahi,

Source: Plotted by Author

Table No. 4 Katihar District: Block-wise Population Concentration

Category	Census Years				
	1971	1981	1991	2001	2011
Very Low	Balrampur, Amdabad	Manihari, Balrampur, Amdabad	Mansahi, Kursela, Hasanganj, Sameli, Dandkhora	Mansahi, Kursela, Hasanganj, Sameli, Dandkhora	Mansahi, Kursela, Hasanganj, Sameli, Dandkhora
Low	Kodha, Falka, Manihari, Prampur	Prampur, Falka, Kodha	Prampur, Falka, Balrampur, Amdabad	Prampur, Falka, Balrampur, Amdabad	Prampur, Falka, Balrampur, Amdabad

Medimum	Azamnagar, Barsoi	Azamnagar, Barsoi	Manihari	Manihari	Manihari
High	Barari, Kadwa	Barari, Kadwa	Kodha	Barari, Kodha	Barari, Kodha,
Very High	Katihar	Katihar	Katihar, Baesoi Azamnagar, Kadwa, Barari	Katihar, Baesoi Azamnagar, Kadwa	Katihar, Baesoi Azamnagar, Kadwa

Source: Plotted by Author

Katihar and Balrampur where again the blocks with the highest and lowest population. Similarly, if we talk about the population growth rate, during this period Azamnagar recorded highest growth rate of 32.02%, Katihar, Pranpur, Barari and Falka recorded the lowest growth rate of 6.4% 13.4% - 4% and minus 14.02% respectively. The main reason of which was the creation of new blocks like Dandkhora, Hasanganj, Sameli, Kursela. Apart from this, decadal growth of 31.1% was recorded in Balrampur and Barsoi 26.4%, in Kadwa 25.4%, in Kodha 22.02%, in Manihari Prakhand. Similarly difference in the special population growth and distribution pattern have also been observed in the census year of 1991 2001 and 2011. In 2011 the total population of the district was 30, 71 ,029 persons and the decadal growth rate was 28.4. During this period, mansahi block with 35.6% and Kursela block with 20.6% were is the block with the highest and lowest growth rate respectively. Similarly, Kadwa and Hasanganj where is the block with maximum and minimum population concentration respectively. Tables number 3 and 4 illustrate the difference in population growth and distribution pattern in the blocks.

Conclusion:

According to Frinch and Trewartha (1997), population serves as the point of reference for geographers studying other environmental factors whose significance and meaning are determined by the human context. It is crucial to consider the geographical characteristics of any reason in order to understand the population's makeup and distribution, as these factors have a direct bearing on human culture. Studying the population dynamics of every culture, region, state, or nation is crucial for its complex social, economic, and cultural evolution. A region's greatest resource is its population. It is also the producer, consumer and planners of all the resources available in a particular reason. Therefore, it is very important to define the capacity of the resources available there in the context of population on the basis of good and meaningful knowledge and analysis of all demographic characteristics. Apart from this, the study of demographic changes also helps in preparing the foundation for proper planning to look for various problems and possibility keeping in mind the future needs.

It is known that Katihar district has a Rural background. Agriculture and agriculture-based activities are the mainstay of its Economy. The piece of economic development is very slow in proportion to the temporal and special diversity present in the population distribution and growth rate better in the district according to the 2011 census Barari, Barsoi, Balrampur, Hasanganj, Kadwa, Mansahari such a block where decadal growth rate was found to be higher than the district average. It was seen around 28% in the all three blocks of Pranpur, Manihari and Falka. The decadal population growth rate in Kursela, Katihar, Amedabad, Dandkhora, Sameli and Azamnagar was recorded between 20-28%. All through the population of study area is increasing at the rapid pace, however it has decreased slightly compared to the last decade. Rapid population growth rate and low economic development are continuously increasing pressure on land resource. The problem of lack organisation and industrialisation highest dependency ratio unemployment and migration is making it even more serious. Problem such as agriculture-based economy, low socio- economic development, widespread illiteracy, poverty,

unemployment, gender bias and low socio-economic status of women are continuously encouraging rapid population growth in the region, which can have negative impact on economic development here. Although in the 2011 census report clearly shows signs of decline in the population growth rate of district, it still at its highest level. Extensive efforts are yet to be made to establish harmony between population and resource and achieve the goals of rapid economic development and highest standard of living.

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