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**REGIONAL DISPARITIES IN THE LEVEL OF DEMOGRAPHIC DEVELOPMENT: A DISTRICT LEVEL ANALYSIS OF BUNDELKHAND REGION OF MADHYA PRADESH, INDIA****Pawan Kumar Sharma**

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**Abstract:** *Regional Development generally refers to a continuous process. The development process improves and increases the quality of life of human being. The development Process largely depends on the implementations of the planning policy by the government. And the planning policies are prepared based on the availability of both the physical and human resources of the region. Regional disparities refers that there are imbalances between two or more regions in terms of the development of economic, social, demographic structure of a region. Regional disparities in the level of demographic development is due to the implementation of planning policies in the selective regions, any specific age group of population, any specific section of society (such as Scheduled caste and tribe and other backward classes), to a specific gender group of the population. Our present study is concerned to the study of regional disparities in the level of demographic development: a district level analysis of the Bundelkhand region of Madhya Pradesh, India. The study area consisting six districts, locates in the central India. It is a part of Bundelkhand upland of Madhya Pradesh. This study is based mainly on the data collected from the secondary sources at the district level. The analysis of data is made based on the quantitative and statistical techniques, such as Arithmetic mean, Standard Deviation and Composite Index method. For computation of the statistical data Microsoft Excel and for the preparation of the map is made by Arc Gis 10.1. To determine the level of Demographic development and regional disparities we take 9 demographic indicators according to their importance. The analysis by composite index shows that the Sagar district is relatively developed as compared to other five districts. Damoh and Datia district are moderately developed, Chhatarpur is Less Developed and Tikamgarh and Panna district are very less developed in terms of demographic development. Regional disparities in the level of demographic development are due to the economic and physio-climatic conditions of the region.*

**Key words:** Composite Index, Demographic Development Indicators, Regional Disparities, Level of Development,

**Introduction**

Regional Development generally refers to a continuous process which is responsible for overall, integrated, and sustainable improvement of the current situation of place people or to phenomena, which brings uniform and balanced growth of a region. The concept of regional development is multi-dimensional and multilevel. It includes the integrated performance in agricultural, social, infrastructural and industrial sectors of any region and the regional disparity is the outcome of imbalanced regional development that varies from one region to region depending upon socio-cultural, economic and demographic characteristics (Kumar, D. and Mishra, S.P. 2017). The imbalanced regional development is due to the implementation of the centralized planning program and special area development programme causes Regional disparities.

**The Study Area**

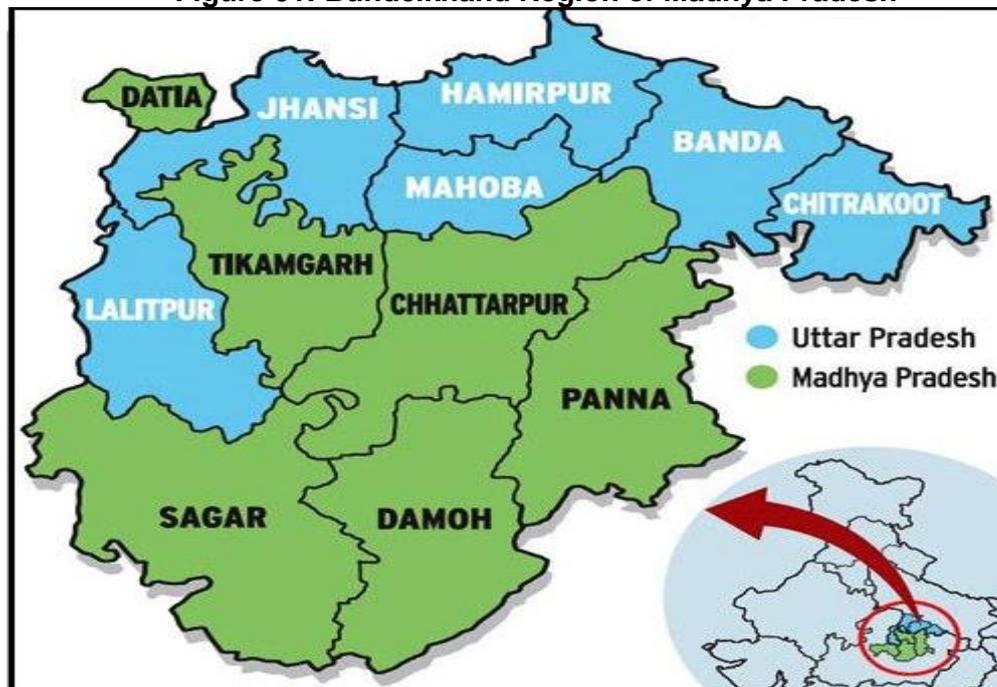
The area under study is the Bundelkhand region of Madhya Pradesh consisting 6 Districts. Madhya Pradesh state is situated in central India, with 308,252 km<sup>2</sup> area; it is the second largest state in India. The total population of the state is 72,597,565 as per 2011 census, ranking it sixth among Indian states. The state is divided into 12 administrative Divisions 45

districts, 317 tehsils and 459 development blocks. The state is of low hills, narrow valleys, plateaus and plains. Geographically, it can be divided into four regions:

The Bundelkhand region lies at the heart of India located below the Indo-Gangetic plain to the north with the undulating Vindhyan mountain range spread across the northwest to the south. The region span across thirteen districts: seven in Uttar Pradesh - Jhansi, Jalaun, Lalitpur, Hamirpur, Mahoba, Banda and Chitrakut, and six in Madhya Pradesh. The study area under this research is the Bundelkhand region of Madhya Pradesh, which consists of six districts of northern Madhya Pradesh, namely Datia, Tikamgarh, Chhattarpur, Damoh, Sagar and Panna. It covers an area of 70800 km<sup>2</sup> and is located between 23°20' and 26°20' N latitude and 78°20' and 81°40'E longitude (NGSI, 1989). As per the Census 2011, The Bundelkhand region of Madhya Pradesh is the habitat of 8653492 people. Amongst the total Population 4568243 are male and 4085249 are female and 191555 are urban and 6737939 are rural population. The Sex Ratio of the region is 894 per thousand male with a Population Density of 209 per square km, is very low in relation to the country's average. Along with these, this region is the home of 715625 Scheduled Tribe populations because it is the cradle land of these people.

The area is rocky and characterized by a high percentage of barren and uncultivable land. The soil form is the mixture of black and red-yellow which is not considered very fertile. The rainfall is sparse and the agricultural production is low. The study area has a significantly high Poverty level. This area is rich in forest, has lost its forest cover to a large extent. So, the forest as a means of livelihood is becoming extinct day by day. Mining of minerals and stone-quarrying has emerged as a major non-form activity but is based on exploitative wage labour. It has poor human development index. Due to uneven distribution of settlement, it is difficult to provide all infrastructural facilities at village level because of lack of population threshold.

**Figure 01: Bundelkhand Region of Madhya Pradesh**



### Objectives

The objectives of our present study are as follows:

- To analyse the factors affecting the level of demographic development.
- To study the regional imbalances and disparities in the level of demographic development in the 6 districts of Bundelkhand region, M.P.
- To identify the status of the districts in relation to the level of Demographic development.

## Data Base and Methodology

Our present study is totally based on the secondary sources of Data, obtained from the different organization and commission. Most of the data related to the demographic development are taken from the census report, 2011. Some data at the district level are obtained from District Census Handbook, 2011 (DCHB,2011) published by the Ministry of Home Affairs, Government of India. To measure and calculate the level of development and regional imbalances among the 6 districts of the region, 9 development indicators of demography have been taken on the basis of our purpose of the study.

**Table 01: Demographic Indices**

Sl. No.	Demographic Indices
1.	Literacy Rate
2.	Female Literacy Rate
3.	Sex Ratio
4.	Sex Ratio for the Age group of 0-6 Year
5.	Percentage of Urban Population to the total Population
6.	Percentage of Main Workers to the total Population
7.	Literacy Rate of Scheduled Caste Population
8.	Literacy Rate of Scheduled Tribe Population
9.	Percentage of Non S.C. and S.T. Population

In India several studies in the context of spatial variation in the level of development have been made by several scholars' viz. A. And Mohanty, M.K.(2006), Singh R.(2006), Naseer, Y., Siddiqui, F.A. and Kazma Khan (2005), Nair K.R.G.(2004), Agarwala, A.K. and Hazarika, P.L.(2002), Ahluwalia, Montek S. (2000), L.S. Bhatt, (1972), R.L. Singh(1971), Pal(1975), R.P. Mishra (1978) etc. Our present study aims to measure the regional imbalances and disparities in the level of demographic development in the Bundelkhand Region of Madhya Pradesh at district level as it consist of six districts, with the help of Composite Index Method of Development. Along with this for measuring the level of demographic development statistical techniques have been used, such as Mean, Standard deviation etc. So in this study in a more systematic manner both the qualitative and quantitative methods have been used. To compute the Statistical data and their cartographic representation, Microsoft Excel, word, and Arc-Gis-10.1 have been used.

To measure the regional imbalances and disparities in the level of demographic development, Composite Index method of development have been used. The steps of calculation are as follows;

- In the first step we select the indicators of development (Variables X).
- Secondly we compute the mean ( $X^i$ ) of the each selected development indicators. The equation for mean is,  $\sum X/N$ .  
Where,  
 $\sum X$ = Sum of all the value of a indicators.  
 $N$ = Frequency.
- Thirdly we calculate the value of deviation (d) by this formula,  $(X-X^i)$ .  
Where,  
 $X$ = Value of the indicators of each level.  
 $X^i$  = Mean of the successive Indicators.
- In the fourth step we have calculated the Standard Deviation (SD), using the equation,  
$$SD = \sqrt{\sum D^2 / N-1}$$
  
Where,  
 $\sum D^2$  = Sum of the value of the squared deviation.  
 $N$  = Total Frequency.
- Standard Scores (I) have been calculated in the fifth steps by dividing  $(X-X^i)$  by Standard Deviation (SD).i.e.  $(X-X^i/SD)$ .
- Then in sixth step the Gross Value have been calculated by summing all the value of Standard Score i.e. I.

- In the seventh step Composite index scores are computed by dividing the Gross value by the total number of the development indicators.
- Finally we have taken four types of level of development e.g. 1. Relatively Developed, 2 Moderately Developed, 3. Less Developed, and 4. Very Less Developed.

### Results and Discussion

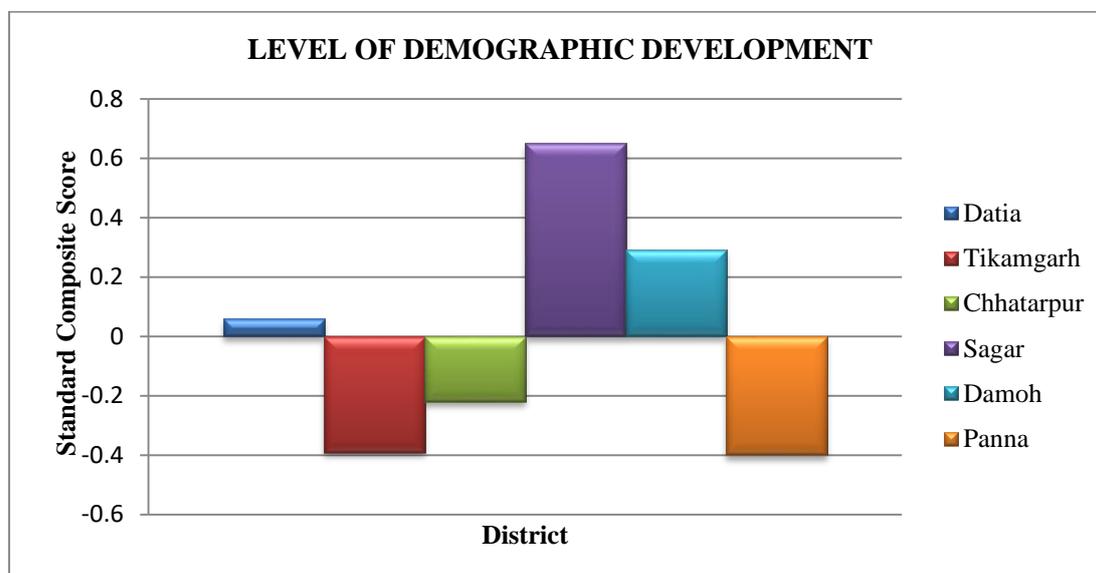
The Bundelkhand region of Madhya Pradesh consisting six districts is characterized by Deccan Trap lava flow, Barren topography, amphitheatric valley, escarpments, and poorly developed red soils in most of the region and well developed black soils in some patches. As it belongs to the Deccan Trap plateau the availability of the ground water is less. Besides this the rivers of the region is seasonal in nature and largely depends on south west monsoonal rainfall as it is the main source water. For this, the region is becomes one of the water stressed region in the country, due to this less availability water the demand of water in households, agriculture and industries are not fulfilled. For all these affecting factors the demographic development is took placed as compared to the main stream of the country. And the region becomes backward day by day in terms demographic development. In this present study 9 demographic indicators (Tab.1) are taken to show the demographic development of the region.

The main purpose of this study is to analyse the factors affecting the level and status of demographic development. This study also focussed on the study the regional imbalances and disparities in the level of demographic development in the 6 districts of Bundelkhand region, M.P.

**Table 02: Composite Index of Development Indicators**

District	Weighted Value of the Following										
	Literacy Rate	Female Literacy Rate	Sex Ratio	Sex Ratio for the Age group of 0-6 Year	Percentage of Urban Population to the total Population	% of Main Workers to the total Population	Literacy Rate of Scheduled Caste Population	Literacy Rate of Scheduled Tribe Population	% of Non S.C. and S.T. Population	Gross Value	Composite Index
Datia	0.77	0.36	-1.51	-1.74	-0.08	0.19	1.02	0.6	0.9	0.514	0.06
Tikamgarh	-1.16	-1.22	0.49	-0.39	-0.51	0.75	-0.52	-1.19	0.28	-3.47	-0.39
Chhatarpur	-0.76	-0.62	-0.79	-0.09	1.19	0.19	-1.03	-1.04	0.95	-2	-0.22
Sagar	1.44	1.63	-0.08	0.84	-1.4	0.86	1.38	1.09	0.09	5.85	0.65
Damoh	0.27	0.32	1.13	0.95	-0.32	-0.09	-0.01	0.9	-0.5	2.65	0.29
Panna	-0.57	-0.48	0.77	0.43	1.12	-1.91	-0.85	-0.37	-1.72	-3.58	-0.4

**Figure 01: Level of Demographic Development**



### Regional Imbalances and Disparities

The table three shows the different level of development, which are determined by the composite index method. And by this composite index the districts of the Region are divided into four category of development on the basis of level of development. These four categories are Relatively Developed, Moderately Developed, Less Developed and Very Less Developed. Sagar district is the only district which falls in the category of Relatively Developed, Damoh and Datia are moderately developed, Chhatarpur is less developed and Tikamgarh is very less developed. The value of these nine demographic development indicators is decreases from relatively developed to the very less developed Category.

**Table 03: Classification of Districts Based on the Level of Development**

S. No.	Range of Composite Index	Level of Development	Name of the Districts	No. of the Districts
1	Above 0.30	Relatively Developed	Sagar	1
2	0.00 to 0.30	Moderately Developed	Damoh, Datia	2
3	0.00 to -0.30	Less Developed	Chhatarpur	1
4	Below -0.30	Very Less Developed	Tikamgarh, Panna	2

#### i. Relatively Developed Region (Density/ Choropleth Map To be paste here)

The Sagar district having the value of composite index i.e. 0.65 in terms of development falls in the category above 0.30 and for this it is the only relatively developed district of the Bundelkhand region of Madhya Pradesh. Sagar district is relatively developed among the six districts because the literacy rate, female literacy rate, sex ratio, proportion of the urban population to the total population, percentage of the main workers to the total population, percentage of non-scheduled caste and scheduled tribe population to the total population etc. are very high in referenced to the other districts. Sagar district is relatively developed as it have it have well connected transport network, banking facility, central university, private university, Govt. colleges, schools, Bundelkhand medical college, Army cantonments, Districts administrative blocks, state forensic department, income tax department and reasonable amount of urban population. This district is relatively rich in cottage industry and the goods are Bidi, Flour, Cloth, Agricultural tools, Fabrication, Agarbatti, Bricks, Bamboo items etc.

#### ii. Moderately Developed Region

This zone having the composite index value ranging from 0 to 0.30 includes two districts. These are Damoh and Datia and the composite index scores are 0.29 and 0.06 respectively. These two district is moderately developed as compared to the Sagar district because the literacy rate, female literacy rate, sex ratio, proportion of the urban population to the total population, percentage of the main workers to the total population, percentage of nonscheduled caste and scheduled tribe population to the total population etc. are less as compared to the Sagar District. Mustered oil, Thrasher, Carpets, Bidi, Bamboo items are the major goods produced in this region.

#### iii. Less Developed Region

Chhatarpur is the less developed Region of the Bundelkhand region as it has the composite score of -0.22 and the range of the composite index value ranges 0.00 to -0.30. It is less developed region because the literacy rate, female literacy rate, sex ratio, proportion of the urban population to the total population, percentage of the main workers to the total population, percentage of non-scheduled caste and scheduled tribe population to the total population are comparatively low in referenced to the other districts. And most of the working populations are engaged in agricultural practices.

#### iv. Very Less Developed Region

Very Less Developed region is composed of two districts named Tikamgarh and Panna and the composite scores are -0.39 and 0.40 respectively and the composite index value ranges below -0.30. These two district is very less developed because the literacy rate, female literacy rate, sex ratio, proportion of the urban population to the total population, percentage of the main workers to the total population, percentage of non-scheduled caste and

scheduled tribe population to the total population are extremely low in referenced to the other districts. As most of the working populations are engaged in agricultural practices and working as marginal workers.

### Conclusion

Generally the Demographic Development is the outcome of the Educational, Industrial, Infrastructural and finally the Economic development of a particular region. And these solely are interconnected and interrelated to each other. From the above discussions it is very clear that the composite index method of is very effective to show the development of a region. As stated in the table 1 all the nine demographic indicators clearly show the level of demographic development of the region. In account of the computed value of the composite index we categorized the six districts into four levels of development. Out of the six districts in Sagar district literacy rate, female literacy rate, literacy of the scheduled caste population and literacy of the scheduled tribe population is very high as compared to the other districts of this region, occupies the top position. Datia and Damoh districts are in second and third position. Tikamgarh and Chhatarpur are the backward districts in terms of demographic development as the literacy rate is very low and secure the position at the bottom in terms of development. Along with this the sex ratio for the age group 0-6 year is highest in the Damoh District followed by Sagar and Panna on the other hand this is very low in the Datia district. The main working population of Sagar district to the total population is highest in the Bundelkhand region followed by Tikamgarh and Chhatarpur district. And the in terms of the overall demographic development are in the Sagar District and the Panna is very less developed and occupies the position at the bottom.

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