STATISTICAL ASSESSMENT OF REGIONAL IMPARITIES IN THE DEVELOPMENT OF UTTAR PRADESH

ABSTRACT
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Abstract

The notion of development refers to a multi-faceted, long-term continuous process that improves the quality of life of any region. Provision of accurate and substantial information about the developmental process of any region is indispensable for appropriately allocating funds and subsidies so that a uniform balanced development of the entire region is achieved. Owing to its qualitative nature, it becomes very difficult to exactly define and quantify "development". However, several ideas have been forwarded over the years to appropriately define and precisely measure it. In simple terms, various indicators pertaining to various dimensions contributing to the "development" are combined in such a way so as to get an index of development. Computation of such an index for different regions may be used as a yardstick for comparison of their development.

Generally, a region is considered to be developed if it is fares well economically. However, over the years, it has been emphasized emphatically that the developmental process of any region depends not only on economic but several non-economic factors as well. Also, the holistic development of any region is possible only when an ample growth in all the contributing dimensions of development is achieved. Thus, a comprehensive index of development should be based on a variety of indicators that pertain to region's agricultural, infrastructural, industrial and socioeconomic status. The concept of balanced development is used to achieve the harmonious and simultaneous growth of a region's agricultural, infrastructural, and socioeconomic sectors. Thus, several indicators that pertain to the development of agricultural, infrastructural, and socio-economic sectors such as food grain production, irrigation facilities, easy access to good quality health care and education facilities, position of females in the society, better transportation facilities, and

optimal technology absorption in agricultural and industrial sectors all contribute significantly to the overall developmental endeavors.

Several studies have sought to measure and analyze regional development using empirical methods. Earlier attempts to quantify regional disparities relied solely on per capita income as an indicator of level of development. Later, development was viewed as a broad concept that encompassed changes in all aspects of human life, necessitating the adoption of complex procedures as well as the utilization of a huge number of indicators (see, for example, Mc Granahan (1966), Dadibhavi and Vaikunthe (1990) , Narain et al. (1991, 92, 93, 94, 95, 96, 99), Cziraky et al. (2002a), Soares et al. (2003), Perisic and Wagner (2015),Shee and Maiti (2017),Jiang et al. (2020), and the references cited therein.).

Uttar Pradesh, India's "Hindi-Speaking Heartland," is one of the most populous states, located in the 'Indo-Gangetic' plain of northern India. Uttar Pradesh is bounded by Uttarakhand and Nepal in the north, Haryana in west, Rajasthan in south-west, Madhya Pradesh in south and Bihar in east. With reference to the diverse agro-climatic variations and soil conditions, the state is divided into four regions viz. Western region, Central region, Bundelkhand region and Eastern region. The state is predominately rural and agrarian. Uttar Pradesh may be considered as the country's agricultural powerhouse. The state's economy is heavily affected by agriculture, which provides a living for about 65 percent of the state's population.

In spite of this, the state of Uttar Pradesh is rated among the least developed states in terms of infrastructural and socio-economic development though it should be noted that not all its districts are least developed. Interestingly, if we look at the overall development, few districts in Uttar Pradesh stand among the highly developed in terms of infrastructure while few others in agriculture and socioeconomic development. Thus, the government requires a conscientious effort to evaluate and determine where one district stands in comparison to another in the state. In view of this, reckoning the assessment and quantification of the spatial and temporal development in various districts of the state of Uttar Pradesh is the need of the hour. Considering the above facts, the amount of development in various districts of the state of Uttar Pradesh have been assessed and quantified in the present

study. In order to achieve this, an attempt has been made in the present work to construct a composite index of development for all the seventy-five districts of Uttar Pradesh, taking into account various agricultural, infrastructural, and socioeconomic indicators over different time periods. The study also aims to provide an insight into the linkages between various sectors of development that may aid in the identification of potential variables generating regional imbalance in various districts of Uttar Pradesh state.

It has been the continuous endeavor of governments and planners to measure the level of development in different districts of Uttar Pradesh in order to identify where a given district stands in relation to others. So, the present study is an attempt to construct the composite indices of development of different districts of Uttar Pradesh. In order to capture the development differentials in different districts of Uttar Pradesh over time, the methods of composite indices given by Narain et al. (1991) have been utilized. Based on the levels of development, various districts of Uttar Pradesh have been classified into: highly developed, developed, developing, less developed, and least developed areas. In the present study, Potential targets for less and least developed districts have been estimated which is indeed quintessential for future planning. In the last chapter, we have proposed an 'Exploratory Factor Analytic Model (EFA)' using Principal Component Analysis to uncover the principal factors or dimensions responsible for the disparities in development for each sector.

The developmental disparities of the Uttar Pradesh, with its large size, diverse structure, and socio-cultural and environmental disparities, are better understood and interpreted when studied at the regional level. To compute and analyze changes over time, the time period under consideration is divided into three sub-periods: Period I (2000-01), Period II (2010-11), and Period III (2017-18).

Chapters II to V of the present study are devoted to estimating the differences in the levels of development over time in all seventy-five districts of the Uttar Pradesh state in various sectors such as agriculture, infrastructure, socioeconomic development, and overall development. Chapter VI is devoted to quantifying the principal dimensions or latent constructs of agricultural, infrastructural, and socioeconomic characteristics, as well

as homogeneous grouping of all seventy-five districts of Uttar Pradesh into a few clusters in terms of different levels of development, using multivariate statistical methods such as Exploratory Factor Analysis (EFA) and Cluster Analysis.

In Chapters II to VI, districts were used as the unit of analysis, and data for different districts of Uttar Pradesh throughout various time periods on sixty-five indicators were used. Out of the total sixty-five indicators, twenty-two are directly concerned with agricultural development, twenty-two indicators depict the progress of development in the infrastructure & service sector and the rest twenty-one indicators present the level of development in socio-economic sector. The sixty-five indicators taken together represent overall development. Indicators common to all the districts have been used in the analysis.

In Chapter I, we have provided an introduction about Development and regional disparities found in different setors of economy, and reviewed the literature related to these problems. This chapter contains some basic notation, methodology relevant to the thesis.

The most important conclusions of the chapter I is that Wide disparities in level of overall agricultural development are seen among all districts. Though, out of all, 63 districts of UP ranked in either developed or highly developed category, the values of C.I. for most of the districts are found to be closer to 1 clearly indicating that the agricultural sector still needs a more attention to achieve higher development. The saddest state of affairs is that of Chitrakoot, Mirzapur and Sonbhadra which remained in less and least developed category in agricultural sector. However, Mahoba which was in Less/Least Developed category has jumped to developing category in the latest period III (2017-18).

The most important conclusions of the chapter II is that the pattern of regional infrastructural development in UP is quite unequal. Wide infrastructural disparities have been observed among all the districts. The next conclusion of the study supports a well-known fact in Uttar Pradesh that G.B. Nagar, Lucknow, Ghaziabad, and Kanpur Nagar are developing significantly more rapidly than the rest of the state's districts in terms of infrastructure development. The state government and policy makers must deal with this reality in order to decrease the flow of unemployed people to these developed districts by pro-

viding jobs and improving health care and education facilities in less and least developed areas. The C.I. values for the majority of the districts are found to be closer to 1, indicating that the infrastructure sector still need more attention to attain higher development.

The most important conclusions of the chapter IV is that the pattern of regional socio-economic development in UP is quite unequal. Wide regional disparities have been observed among all the districts. In Uttar Pradesh, the districts G.B. Nagar, Lucknow, Ghaziabad, Prayagraj and Varanasi are developing significantly more rapidly than the rest of the state's districts in terms of socio-economic development. The state government and policymakers must deal with this reality in order to decrease the flow of unemployed people to these developed districts by providing jobs and improving health care infrastructure and education facilities in less and least developed areas. The district of G.B. Nagar has been found to be top ranked in all the time periods under study. The performance of this district is remarkably high as compared to other districts.

The most important conclusions of the chapter II is that the weighted mean development indices show the presence of high regional disparities in the state and calls the plentiful efforts of government and policy makers to give impetus and genuine support to least or less developed districts for balanced regional development. The study also reveals that about 59.33 percent of the state area and 60.67 percent of the state population is occupied by those districts which are classified under the developing category and 31.30 percent of the state area and 25.51 percent of the state population resides in the less developed districts. Thus, despite being the agricultural power house of India, Uttar Pradesh has immense regional disparities and development is confined to few districts only. The Kruskal-Wallis H test indicates that there is a significant change in infrastructural & socioeconomic development of the state over the different periods of time. The median ranks for agricultural sector increased in the period 2010-11 but goes downwards in the period 2017-18, implying that necessary steps are required for the sustainable growth of agricultural sector in the state. The correlation coefficient between the overall development and other sectors is positive and highly significant for all the periods under study indicating that all these sectors significantly influencing the overall economic development.

The important conclusion and policy implications emerging from the Chapter VI is that the ‘Exploratory Factor Analysis’ and ‘Cluster Analysis’ were successfully utilized in quantifying (a) the principal dimensions of developmental characteristics (factors), and (b) the level of overall development of Uttar Pradesh with different grades of development.

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