Regional Disparity in the Development of Industrial Sector Impacting the Economic Structure of Telangana

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Abstract

Regional disparity is a very common situation to anyone which exist at various scale from global to state or district. There is various kind of disparity one can see on development parameters including economic, social and a host of other. This paper tries to put light on the imbalances of industrial development and it's consequences on the economic bases and opportunities among the districts of Telangana with the help of calculated Industrial density and Weighed Index method taking variables of GDDP, per capita income and work participation rate. This analysis gives a picture that districts located at the centre with high industrial growth is overlapping the high developed region in terms of economy and the situation is completely inverse for the peripheral districts which needs the urgent action for holistic development of the state.

Keywords: Industrialisation, disparity, GDDP, per capita income, work participation rate
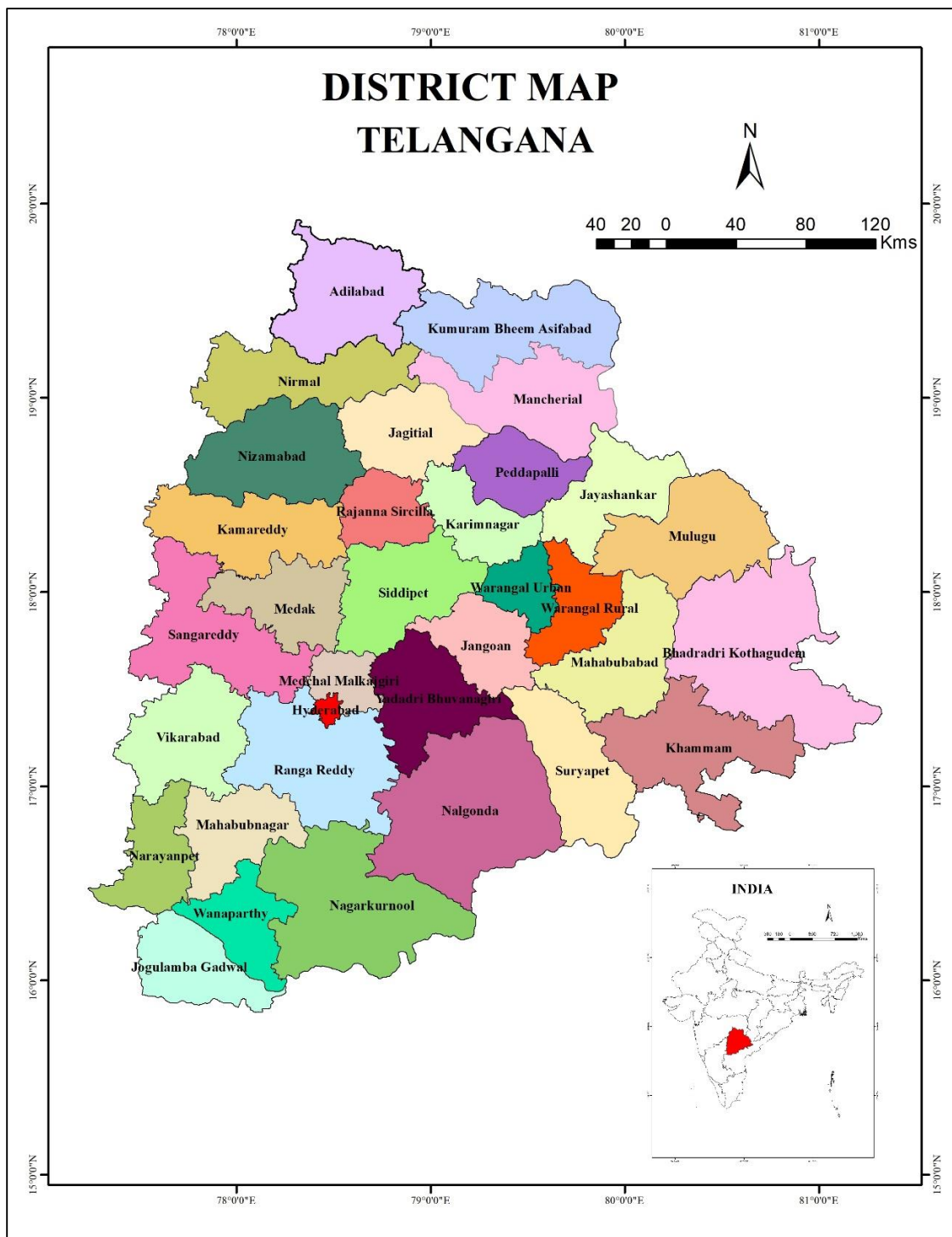
Introduction

Regional disparity basically gives a picture of differences in terms of economic, social, physical or any other growth indicator between different regions. The region could be political and formal as well. These imbalances among regions are result of a dynamic combination of various parameters working in the space including, topography, historical background, availability of resources, financial status, human interest and a plethora of others. Balanced regional progress is the most important component for the development of a country, as it is not a representation of the growth of few, but it actually implies the benefit or increment of all. Here, balanced growth is not indicating equal development of all the regions, rather it gives an idea that a proper utilisation of development potentials should be there as per the capacity of all the area so that, the benefit of overall economic growth is shared by the inhabitants of all the different regions of a country. As defined by Dr. S. Vijay Kumar (2016), **"Balanced regional development is the economic development of all regions simultaneously, raising their per capita income and living standards by exploiting their natural and human resources fully"**.

 In India, a long exploitative rule period by British colonies have resulted in an unbalanced situation for regional development. Adding up with historical reason, India also have a varied range of topography and geology which also turns in inequalities in availability of different physical and human resources, and consequently in the level of development among different states and even between areas within a state. Although many initiatives have been taken by Indian government to get the situation in balance by planning, since independence but still, in many sectors this disparity can be seen at very high level. One such sector is the industrial sector, which plays a very crucial role in socioeconomic growth of any country as it provides employment opportunities, diminishes the cost of production, upsurges the saving, raises the demand for goods and services in the economy, and helps in relocating surplus labour from the agriculture sector (Sanjeev Kumar and Falguni Pattanaik, 2020). There are many states which lags in industrial growth, which ultimately results in many inequalities as well as problems like unemployment, pressure on agriculture sector, low economy and a host of others. Disparity in industrialisation can be sited at district level too, where few districts of a state are highly industrialised, on the contrary others are still dependent on primary sector which is not only keeping them behind at economic level but also making them backward at social parameters. Best state to exemplify this situation is Telangana, which stood at Rank 1 in "Ease of doing Business" for the year 2016-17 and have one of the industrial hub of the country, Hyderabad. But surprisingly, the situation of this development is not same for all the districts. There is a huge disparity in the level of industrialisation among the areas of state, as industries are concentrated in few of the districts such as, Hyderabad and Rangareddy, and it is creating imbalance in overall economic growth within the state. Telangana government have tried to succeed a rapid and decentralised industrial growth in the state by implementing several policies and measures, i.e., TS-iPASS. But even after these policies, disparity continues,

hence industries and development from them are vital for any state it is important understand the reasons behind this situation in Telangana and try to fill the gaps in order to have a developed state in a literal manner.

Study Area

Telangana is the 29th new state of the country which came into existence on 2nd June, 2014, carved out of united Andhra Pradesh. According to the census of India 2011, Geographical extent of the state is 112077 km^2 and has population of 35 million. The State is located between 15º 55' and 19º 55' North and 77º 15' and 81º 19' east. It is divided into 33 districts and Hyderabad, Warangal, Karimnagar & Nizamabad are some of the major urban centres. Telangana is surrounded by Andhra Pradesh in the south and east, Maharashtra and Karnataka on the west, and Odisha and Chhattisgarh by the west side. There is a huge variety in physiography of the state as it is covering catchment area of Krishna and Godavari rivers, Hyderabad plateau and peneplains too. Telangana is a rich state in terms of natural resources as 22.66% of its area is covered with forest. The state is also very much vital in economic perspective as many valuable minerals and rocks are found there including, limestone, bauxite, mica and others. Telangana state is comprising around 20% of the country's coal deposits. Large proportion of population is involved in primary sector as 61% population is rural. Agriculture has the highest share in the occupational structure of the state. But on contrast, there are districts like Hyderabad, which are considered as industrial hub at national and international level as well. State government are implementing many policies to shift the occupational structure from primary to secondary and tertiary for the economic and social development of the other parts of the state.

Map 1: Administrative map of Telangana

Objective of the paper

The aim of paper is to quantitatively analyse the disparity in the level of industrialisation and its impact on the economic status of the districts of Telangana.

Data Base

The entire study is based on secondary data taken from different sources including, published articles and research papers, Government reports, census data, open-source media and others.

Methodology

The qualitative analysis is done with the help of literature available but the paper is majorly based on statistical findings of district-based data, so a varied range of techniques are used according to the need of analysis such as:

- **Excel and Graphs:** these techniques are used to show Gross State Domestic Product (GSDP) growth in the state and GSDP share of Telangana in all India Gross Domestic Product (GDP), over a period of 2011-2020 to analyse the situation of the economic growth in state.

- **Weighted index ratio:** It is one the most reliable quantitative and statistical technique to delineate regions on the basis of more than one variable by assigning weight to each according to their importance. Weights could be fixed or arbitrary according to the need of researcher. With the help of this technique, regions based on their economic status in Telangana are delineated, while taking variables as Gross District Domestic Product (GDDP), Per capita income and Work Participation assigning arbitrary weights 40%, 30% and 30% respectively, which can be called as economic participation regions. Economic participation of each district was taken out with a calculation in defined by as:

District	GDDP (curent price 2020-21) X1	Per capita income(current price 2020-21) X2	Work participation rate X3	Normalised X1	Normalised X2	Normalised X3	Weighted X1(0.4)	Weighted X2(0.3)	Weighted X3(0.3)	Combined Weighted Index	Single Weighted Index
Hyderabad	1,62,87,737	3,51,332	35.84	5.54	1.78	0.73	2.22	0.53	0.22	2.97	0.99
Ranga Reddy	1,93,50,667	6,58,757	42.15	6.59	3.34	0.86	2.63	1.00	0.26	3.90	1.30
Medchal Malkajgiri	70,86,965	2,40,008	39.22	2.41	1.22	0.80	0.96	0.37	0.24	1.57	0.52
Nalgonda	37,94,800	2,01,144	49.81	1.29	1.02	1.02	0.52	0.31	0.31	1.13	0.38
Karimnagar	22,62,531	1,91,205	46.13	0.77	0.97	0.94	0.31	0.29	0.28	0.88	0.29
Nizamabad	30,49,764	1,66,766	48.54	1.04	0.85	0.99	0.42	0.25	0.30	0.97	0.32
Warangal Urban	17,45,497	1,38,387	40.68	0.59	0.70	0.83	0.24	0.21	0.25	0.70	0.23
Mahabubnagar	24,33,160	2,23,348	48.09	0.83	1.13	0.98	0.33	0.34	0.29	0.97	0.32
Sangareddy	36,95,064	2,04,692	45.05	1.26	1.04	0.92	0.50	0.31	0.28	1.09	0.36
Khammam	29,80,559	1,83,318	50.28	1.01	0.93	1.03	0.41	0.28	0.31	0.99	0.33
Suryapet	23,47,137	1,83,810	51.07	0.80	0.93	1.04	0.32	0.28	0.31	0.91	0.30
Yadadri Bhuvanagiri	19,93,603	2,22,100	48.53	0.68	1.13	0.99	0.27	0.34	0.30	0.91	0.30
Peddapalli	16,48,342	1,73,981	43.41	0.56	0.88	0.89	0.22	0.26	0.27	0.76	0.25
Medak	20,83,014	2,29,833	50.27	0.71	1.17	1.03	0.28	0.35	0.31	0.94	0.31
Siddipet	25,91,207	2,19,292	50.35	0.88	1.11	1.03	0.35	0.33	0.31	0.99	0.33
Warangal Rural	14,67,569	1,75,951	52.41	0.50	0.89	1.07	0.20	0.27	0.32	0.79	0.26
Jagitial	17,13,847	1,50,048	54.44	0.58	0.76	1.11	0.23	0.23	0.33	0.80	0.27
Mancherial	14,73,862	1,54,955	42.72	0.50	0.79	0.87	0.20	0.24	0.26	0.70	0.23
Bhadradri Kothagudem	23,22,291	1,83,368	48.36	0.79	0.93	0.99	0.32	0.28	0.30	0.89	0.30
Adilabad	14,59,885	1,75,171	49.24	0.50	0.89	1.01	0.20	0.27	0.30	0.77	0.26
Kamareddy	17,45,651	1,55,032	50.81	0.59	0.79	1.04	0.24	0.24	0.31	0.78	0.26
Mahabubabad	13,67,316	1,52,577	52.61	0.47	0.77	1.07	0.19	0.23	0.32	0.74	0.25
Rajanna Sircilla	10,08,175	1,56,150	54.1	0.34	0.79	1.10	0.14	0.24	0.33	0.71	0.24
Vikarabad	14,27,867	1,32,479	50.17	0.49	0.67	1.02	0.19	0.20	0.31	0.70	0.23
Nagarkurnool	16,23,008	1,63,462	53	0.55	0.83	1.08	0.22	0.25	0.32	0.79	0.26
Jangoan	10,75,118	1,74,636	50.61	0.37	0.89	1.03	0.15	0.27	0.31	0.72	0.24
Wanaparthy	10,07,302	1,51,458	51.26	0.34	0.77	1.05	0.14	0.23	0.31	0.68	0.23
Nirmal	14,80,226	1,79,169	53.11	0.50	0.91	1.08	0.20	0.27	0.33	0.80	0.27
Jogulamba Gadwal	10,52,130	1,49,606	53.79	0.36	0.76	1.10	0.14	0.23	0.33	0.70	0.23
Jayashankar	10,64,808	2,13,735	53.04	0.36	1.08	1.08	0.14	0.33	0.32	0.80	0.27
Kumuram Bheem Asifaba	8,21,051	1,37,488	49.05	0.28	0.70	1.00	0.11	0.21	0.30	0.62	0.21
Narayanpet	9,30,805	1,43,428	52.51	0.32	0.73	1.07	0.13	0.22	0.32	0.67	0.22
Mulugu	5,74,619	1,67,769	55.25	0.20	0.85	1.13	0.08	0.26	0.34	0.67	0.22
Weight assigned	40%	30%	30%								
Average	29,38,351	1,97,105	49								

This regionalisation gave an impression of disparity in terms of economy rooted in the state because of many reasons i.e. imbalance in industrialisation.

- **Geographic Information System:** ArcGIS software is used for the mapping works including:

1. **Administrative Map of Telangana-** to provide a visual political and administrative structure of the state and its location in India.

2. **Dot Map-** dot map is drawn to visualises the concentration and spread of the number of enterprises in the districts of Telangana.

3. **Choropleth-** Choropleths are made for district wise industrial density and the delineated economic region in the state for giving visual correlation between two and make an appropriate analysis.

Literature Review

B. Seshadri (1991) in his book **"Industrialisation and Regional Development"** tried to explain that how regional disparity in industrialisation can result into huge disastrous situation. He begin his paper with introducing industrialisation, Industrial revolution of 18th century, major role of industries in economic development of any region and finally gave an elaboration about the negative consequences of spatial imbalances in industrial development as he stated "industrialisation has given birth to an economically unsound, socially disastrous, morally indefensible and politically dangerous phenomenon, viz. regional disparities in development. And the structural changes that accompany industrialisation affect the inter-sectoral and intra-sectoral importance in terms of output, employment, productive capital, etc". He took Karnataka, a southern state of India as his study area, somewhere believed while reading huge literature that level regional disparity is more in

southern regions of the country as compare to the northern area and the main reason behind is the industrial imbalances.

A Amarender Reddy and **MCS Bantilan (2012)** in their research work entitled **"Regional disparities in Andhra Pradesh, India"** explained about Hyderabad, capital of Andhra Pradesh then, as huge urban centre and high number of industries which acts as an economic hub and places opportunities and economic achievements for the natives. But its impact has a peripheral limits to the district, making area out of the Hyderabad facing disparity in terms of development and eventually creating huge regional disparity. He explained how all this can lead to high growth is some area, i.e. Hyderabad, but can left people of other areas in deprivation of opportunities.

Vigneshwar Mekha and **Adma Kamalakar Reddy** in their research paper entitled **"Industrialization and Decentralisation of Industries in Telangana State – Post TS-iPASS Policy"** analysis the impact of TS-iPASS policy in Telangana. They examined that how Telangana even being at rank 1 in "ease of business" among states of India still experience a lack of industrialisation in few of its area and cluster in others. TS-iPASS policy which was framed for the rapid growth and decentralisation of industries in the state by fastest processing and giving approval, have take some positivity in scenario but still regional disparity do exist which needs to addressed.

Industrial sector in Telangana

Telangana, one of the fastest industrialising and urbanising state of India with about 39% of population living in urban areas is becoming one of the most powerful state on many parameters including sustainability checks, for instance, it ranks 2nd in terms of solar panel capability among Indian states. Telangana contributes a good amount in Indian economy which can be observed in terms of GSDP which is estimated as Rs. 13.04 trillion in 2022-23, at current prices (IBEF Report 2022-23). GSDP of the state and its contribution in all India GDP is continuously increasing year by year as one can see a clear upward trend given in the following graphs:
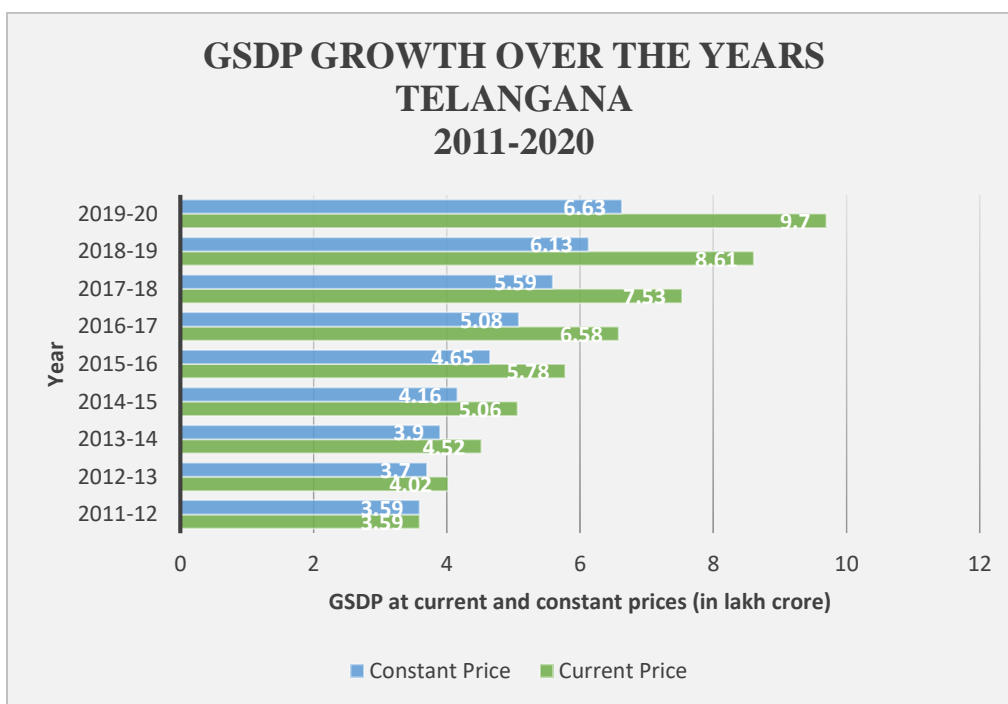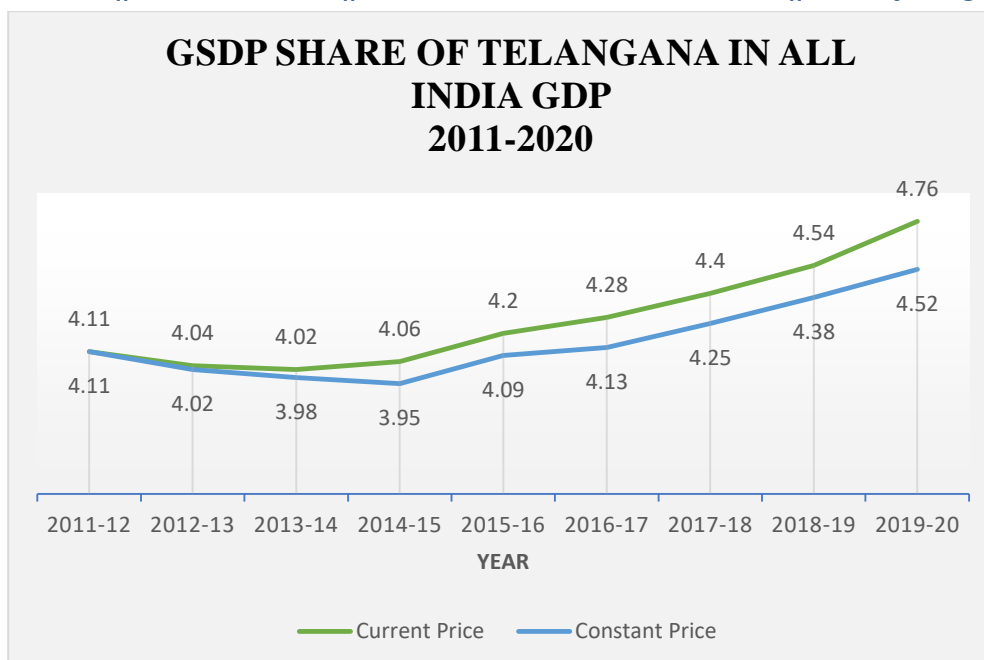

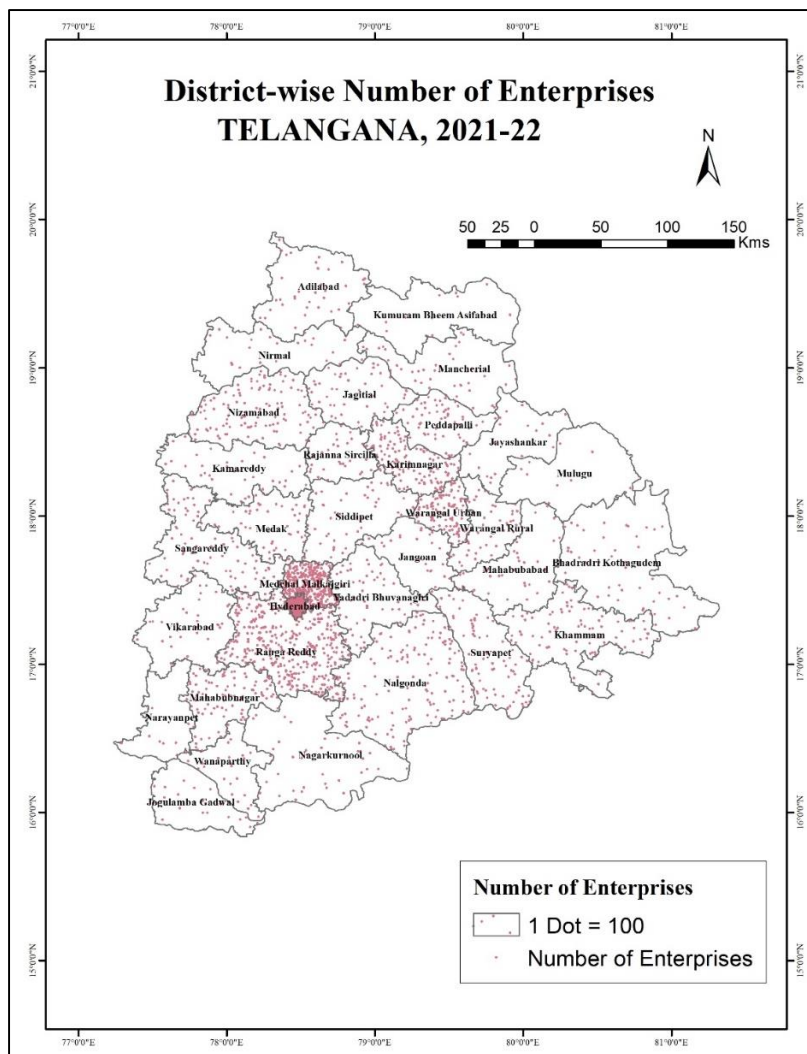*Figure 1: GSDP growth in Telangana, 2011-2020*

Figure 2: GSDP share of Telangana in all India GDP, 2011-2020

The major contributing sector is the manufacturing or the industrial sector in the state which is growing at a faster rate. The state is high rich in terms of mineral resources and centre point for huge manufacturing industries in bulk drugs, textiles, iron and steel, pharmaceuticals, biotechnology, agro-processing, cement & mineral based industries, defence, high meticulousness-engineering, leather, gems & jewellery, etc. Telangana stands at rank 6th in industrial development and ranked 8th in terms of Gross Value Added (GVA) by industries among the Indian industries (Vigneshwar Mekha and Adma Kamalakar Reddy, 2018). Many new initiatives have been taken by Telangana government for making it an investment friendly state and continuing its growth including (IBEF Report 2022-23):

• State have collaborated with some prestigious pharma companies and laboratories, and a academia has been also planned to set up at the Dr. Reddy's Institute of Life Sciences for turning it into a kind of flow chemistry technology hub.
• 15 new development projects have been proposed by Greater Hyderabad Municipal Corporation (GHMC), and for the same project GHMC has got sanction of Rs. 3,115 crore by Telangana government. Project is working under the Strategic Road Development Plan (SRDP) Phase 2.
• Second ICT (Information Communication Technology) policy was launched in September 2021 which will be working for the digital empowerment of citizens, Science and innovation, entrepreneurship and taking steps to compete at global level with innovation ecosystem. With this new ICT a memorandum for the development of local entrepreneurship is signed between Telangana Government and Microsoft which will let Global tech to get into local ecosystem and support them with startup plans and skilling initiatives.
• With around Rs. 6,023 crore of expected investment and employment of 7,623 people, 10 new industrial parks have been developed by Telangana State Industrial Infrastructure Corporation (TSIIC) and have allotted 810 acres of area for 553 industries in 2021-22.
• A 10-year Electric Vehicle policy was stand by state government in October 2020 which focused on making the state as a hub of electric vehicles and energy storage system. Additionally, it has aim to create employment of around 120,000 people through manufacturing activities, sustainable infrastructure development and a shared mobility.
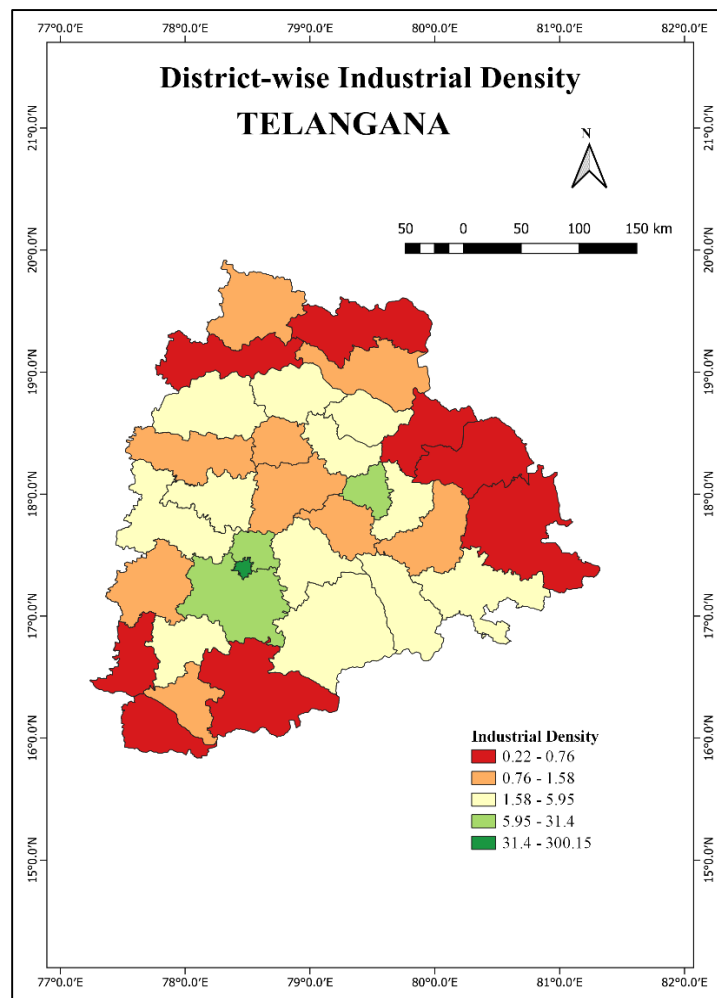
Despite the continuous initiatives, a new industrial policy was implemented by Telangana Government after the formation of state for a rapid, balanced and decentralised industrial growth which constitutes, Telangana State Industrial Project Approval and Self Certification System (TS-iPASS), Telangana State Industrial Development and Entrepreneur Advancement (T-IDEA) and Telangana State Programme for Rapid Incubation of Dalit Entrepreneurs (T-PRIDE). These schemes aimed for giving an environment with fast clearance to industries by state, providing wide variety of incentives to all categories of enterprises including women owned and promoting involvement of backward society, i.e., SC/ST in industrial development industries (Vigneshwar Mekha and Adma Kamalakar Reddy, 2018). A very large amount to investment was done by state in industrial sector under these policies. As result, Telangana turn into a hub of industries with a large number of enterprises present there (map 2) and placed among top states/UTs in economic development.
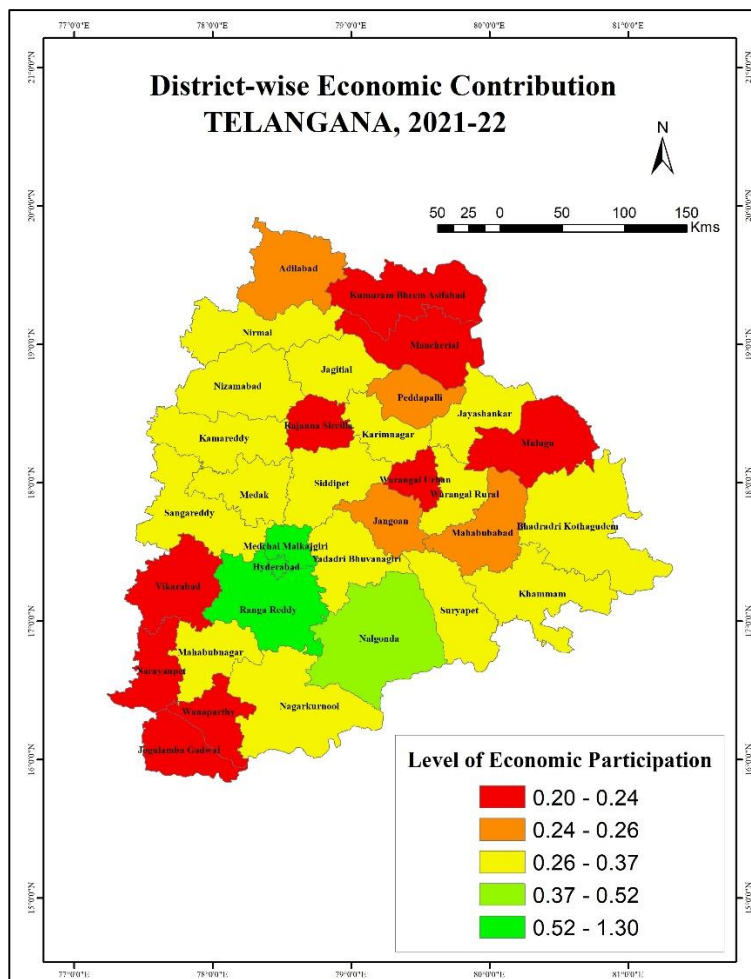
Map 2: District-wise number and concentration of enterprises in Telangana

Regional disparities

The Telangana state government have implemented different policies and measures which undoubtly turned into huge increment in the industrial growth in the state. The new industrial policy including TS-iPASS, have attracted domestic and MNCs placement and increased the number of industrial units, investments and employment opportunities across the districts of Telangana. But the matter of concern what comes up is the regional imbalance in this development. Hyderabad, Rangareddy and few other districts are highly concentrated with industries while other peripheral districts have just few drops of this power of industrialisation (map 2). Consequently, this is rising a situation of disparity in economic development between districts of the state. The regions are formed by **weighted index method**, taking major District-wise economic variables as GDDP, Per capita income and Work Participation rate while assigning weights 40%, 30% and 30% respectively, which can be called as economic participation of regions (map 4).

Map 3: District-wise Industrial Density, Telangana

Map 4: District-wise Economic Contribution, Telangana

By comparing the number of enterprises, industrial density and economic contribution of districts, there is almost a complete overlapping (map2, 3 and 4). Districts with most of the industries and high industrial density specifically Hyderabad coming in last class of 31.4-300.15 industries per square kilometre are also having the strongholds on the economy of the state. Likewise, districts with lowest class of 0.22 to 0.76 density only, are coming into the red zone for their economic status. This gives an idea that high concentration of enterprises are resulting into high economic status of district and vice versa. This all is a result of variation in investments, opportunities provided by government, economic history and social standards of inhabitants of the districts. For instance, according to government verified data, over last one year, Hyderabad has attracted huge investments in pharma, biotech and medical devises of nearly Rs. 7,500 crores. Despite this, the state is setting a new global benchmark for sustainable industrial ecosystem as it is placing a new Hyderabad Pharma City, a very rare of its kind. Pharmaceutica exports which includes drug formulation, biologicals, bulk drug and drug immediate, residual chemical and allied products, organic chemicals and other miscellaneous chemicals, is a stronghold of the state which stood at US$ 4.66 billion in FY22 and taking Hyderabad as lead, is planned to get to US$ 100 billion business generator by 2030 according to the projection by a Life Sciences report of the Telangana government. This imbalance of investment and industrial growth among districts is creating a huge gap in economic development and consequently in the social structure too, as districts with low industrialisation is lagging in economic parameters and social parameters like literacy, health, standard of living and many others which shows as wrong approach to a collective growth of any state.

Conclusion

Regional disparity is deeply rooted in all the sphere in India system since the beginning of its long history. One of its best example can be sighted in Telangana state, with huge industrial disparity. Analysis have shown that districts like Hyderabad, hub of industrial sector with high investment and industrial concentration are growing at a faster rate with a steady rate of employment, GSDP and per capita income, while other peripheral districts are left deprived of these economic development and opportunities which consequently creates a social imbalance in society in terms of literacy rate, occupation structure, health structure and a plethora of others, among the regions which needs to be addressed with strong steps.

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Appendices

- **District-wise Number of Enterprises, Geographical area and Industrial Density**

District	Number of Enterprises	Area (sq km)	Industrial Density
Hyderabad	65132	217	300.15
Ranga Reddy	37827	5,031	7.52
Medchal Malkajgiri	34043	1,084	31.40
Nalgonda	15077	7,122	2.12
Karimnagar	12654	2,128	5.95
Nizamabad	12248	4,288	2.86
Warangal Urban	10754	1,309	8.22
Mahabubnagar	8938	5,285	1.69
Sangareddy	8677	4,403	1.97
Khammam	8762	4,361	2.01
Suryapet	8055	3,607	2.23
Yadadri Bhuvanagiri	5490	3,092	1.78
Peddapalli	5599	2,236	2.50
Medak	4897	2,786	1.76
Siddipet	5026	3,632	1.38
Warangal Rural	4413	2,175	2.03
Jagitial	4584	2,419	1.89
Mancherial	4119	4,016	1.03
Bhadradri Kothagudem	4856	7,483	0.65
Adilabad	3879	4,153	0.93
Kamareddy	4025	3,652	1.10
Mahabubabad	3613	2,877	1.26
Rajanna Sircilla	3194	2,019	1.58
Vikarabad	3573	3,386	1.06
Nagarkurnool	3567	6,545	0.54
Jangoan	2481	2,188	1.13
Wanaparthy	2551	2,152	1.19
Nirmal	2393	3,845	0.62
Jogulamba Gadwal	2236	2,928	0.76
Jayashankar	1964	6,175	0.32
Kumuram Bheem Asifabad	1170	4,878	0.24
Narayanpet	1125	2,336	0.48
Mulugu	854	3,881	0.22
Total	297776		

- **District-wise economic parameters**

District	GDDP (curent price 2020-21) X1	Per capita income(current price 2020-21) X2	Work participation rate X3
Hyderabad	1,62,87,737	3,51,332	35.84
Ranga Reddy	1,93,50,667	6,58,757	42.15
Medchal Malkajgiri	70,86,965	2,40,008	39.22
Nalgonda	37,94,800	2,01,144	49.81
Karimnagar	22,62,531	1,91,205	46.13
Nizamabad	30,49,764	1,66,766	48.54
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Warangal Rural	14,67,569	1,75,951	52.41
Jagitial	17,13,847	1,50,048	54.44
Mancherial	14,73,862	1,54,955	42.72
Bhadradri Kothagudem	23,22,291	1,83,368	48.36
Adilabad	14,59,885	1,75,171	49.24
Kamareddy	17,45,651	1,55,032	50.81
Mahabubabad	13,67,316	1,52,577	52.61
Rajanna Sircilla	10,08,175	1,56,150	54.1
Vikarabad	14,27,867	1,32,479	50.17
Nagarkurnool	16,23,008	1,63,462	53
Jangoan	10,75,118	1,74,636	50.61
Wanaparthy	10,07,302	1,51,458	51.26
Nirmal	14,80,226	1,79,169	53.11
Jogulamba Gadwal	10,52,130	1,49,606	53.79
Jayashankar	10,64,808	2,13,735	53.04
Kumuram Bheem Asifaba	8,21,051	1,37,488	49.05
Narayanpet	9,30,805	1,43,428	52.51
Mulugu	5,74,619	1,67,769	55.25

- **District-wise economic parameters**

- **GSDP growth in Telangana, 2011-2020**

Year	Current Price	Constant Price
2011-12	3.59	3.59
2012-13	4.02	3.7
2013-14	4.52	3.9
2014-15	5.06	4.16
2015-16	5.78	4.65
2016-17	6.58	5.08
2017-18	7.53	5.59
2018-19	8.61	6.13
2019-20	9.7	6.63

- **GSDP share of Telangana in all India GDP, 2011-2020**

Year	Current Price	Constant Price
2011-12	4.11	4.11
2012-13	4.04	4.02
2013-14	4.02	3.98
2014-15	4.06	3.95
2015-16	4.2	4.09
2016-17	4.28	4.13
2017-18	4.4	4.25
2018-19	4.54	4.38
2019-20	4.76	4.52