Regional Imbalances in the Tribal Belt of Southern Rajasthan

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Abstract

Regions vary in the different dimensions. Any two regions are not the same even in the same climatic conditions. This concept is primarily known as areal differentiation in the field of geography. It has been the focal theme of the subject. Nowadays it is studied as regional imbalances which is a challenge for the planners. They try to find the problems in various regions and sort them according to their suitability. The current paper is an effort to find the regional imbalances in the Tribal Sub Plan Area of Rajasthan.

Keywords

Development Indicators, Composite Index.

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Introduction

India is a country of disparity and variability. If one part is highly developed or developed then another part is underdeveloped. This variability can be noticed in not only economic aspects but physical and human resource aspects also. If eastern part has abundant rainfall, then the western is suffering from drought. The southern part has a mild climate when Northern, has chilled climatic conditions.

On one hand, the country has 35 metro cities (2001), consuming all luxuries whereas more than 50 percent of rural area is deprived of the basic amenities. Gujarat, Maharashtra, and Karnataka are industrially developed states and proved to be the 'Pride of the Nation', whereas Rajasthan, Bihar and N.E. states are still industrially poor.

Absolute development of the country cannot occur until disparity and variability are eradicated and all the parts are getting integrated.

Dr. R.H. Dholakia quoted (1985) " Regional imbalance is the universal problem in the course of development, so the development may be equalized by eliminating the imbalances, because the region is an indispensable part of the country. So the total development of the country depends upon the regional development."

The present study is an effort in the direction of identifying the level of development in the tribal belt of southern Rajasthan.

Study Area

The tribal belt of Rajasthan is identified by the government as Tribal Sub Plan Area(TSPA) in the year 1974-75. It is extended in 19770 km.^{2} areas between 23^{o}3' N to 24^{o}54'N latitude and 72^{o}20' E to 75^{o}00' E longitude, situated in the Southern part of Rajasthan .

It includes 19 tehsils from Sirohi, Chittorgarh, Banswara, Dungarpur and Udaipur. It covers the full district of Banswara and Dungarpur, six full tehsils and one partial tehsil from Udaipur district, two tehsils from Chittaurgarh district and one from Sirohi district covering 4440 villages.(fig.1).

The total population of TSPA is 45,14,103, out of which 68.52 % is tribal population. The main tribes are Meena, Bhil and Garasiya.

Physically it has different characteristics. N.W. part is a hilly area includes whereas S. part is a plain area. Abu Road and the tehsils of Udaipur district are covered by Aravalli Range. Abu Road has an average slope of 600-900 m. and Udaipur district has an average slope of 300-600 m. Banswara , Dungarpur and Arnaud tehsils have Mahi Plain Basin with an average slope of 150-300 m.

Mahi, Som and Sabarmati are the main rivers flowing in this area.

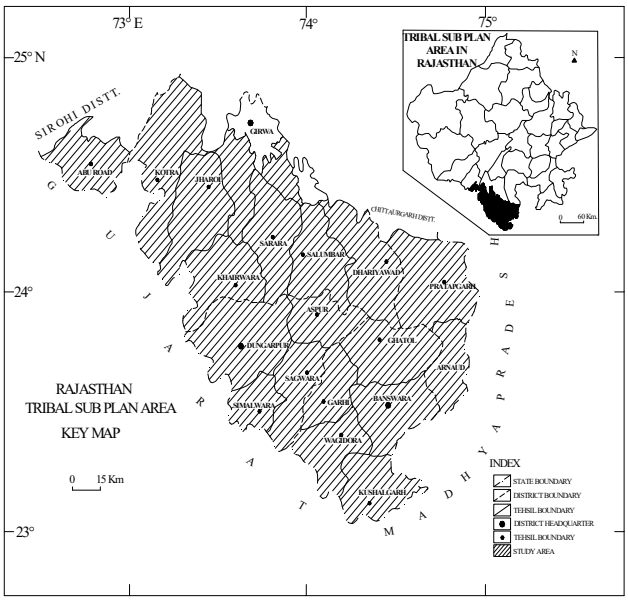

Fig. 1

Methodology

A lot of methods have been used to study the regional imbalances. The main work in this arena is done by Ashok Mitra(1961). He took 35 indicators to study regional disparities through the ranking method. Dasgupta(1971) , M.N.Pal (1975) and V.K.Puri (1983) have used Multiple Factor Analysis and the method of Principal Component Analysis to study regional disparities. The method has also been used to construct Composite Index Values. Dr. Hemlata Rao(1984) studied regional imbalances in 175 Talukas of Karnataka State having taken 85 development indicators during 1975-76 to 1975-80. Prof. Ashok Mitra(1965) found imbalances at the district level with the help of 63 parameters.

In the present paper, 'First Principal Component Method', developed by H. Horelling(1933) . It is an empirical technique for finding a correlation matrix. With the help of the Correlation Matrix, the weightage of each indicator is being found. On the basis of the First Principal Component, the Composite Index Value of each Tehsil is extracted, indicating the level of development.

Thus this method is helpful to give more transparent and in-depth results regarding regional imbalances.

The study is totally based on secondary data.(2001) For the measurement of regional imbalances, 14 indicators have been taken, they are as follows-

Development Indicators

1. Percentage of Workers
2. Literacy Rate (in Percentage)
3. Percentage of Cultivated Area to The Total Area
4. Percentage of Irrigated Area to The Total Cultivated Area.
5. Percentage of villages having Educational Facilities.
6. Percentage of villages having Medical Facility
7. Percentage of villages having Postal and Telegraph Facility
8. Percentage of villages having Bus Services
9. Percentage of villages having Banking Facility
10. Percentage of villages having Power supply
11. Percentage of villages having Co-Operative Societies
12. Percentage of villages having Paved Road
13. No. of Livestock for Every 10,000 Persons.
14. Percentage of Urban Population.

The following steps have been followed for finding the level of development-

1. On the basis of 14 indicators of 19 tehsils a Correlation Matrix (R) has been constructed (Table 2)
2. For each column sum of the correlation is obtained. It is referred to as Ua_1.
3. A normalization factor NF_1 is obtained by the square root of the sum of squares of Ua_1.
4. Normalized Vector Va_1 is obtained by using the formula: $Va_1 = Ua_1 / NF_1$
5. The elements of normalized column sums (Va_1) are multiplied by their respective coefficients in various rows of the correlation matrix one by one shorting with the first row and ending with the last row of the matrix and the sum of these products put at the end of the row. The resultant vector is referred to as Ua_2. With the help of the Ua_2 normalizing factor NF_2 has been found i.e. 6.389
6. Now to find out the First Principal Component, various elements of vector Va_1 are multiplied with the square root of NF_2 i.e. 2.53. The products constitute the elements of the First Principal Component F_1. (Table 3)
7. With the help of the First Principal Component, Eigenvalue has been found, which is the sum of the square of F_1.
8. Eigen Vector (w) corresponding to the Eigenvalue for each variable has been calculated. With the help of an eigenvector, the relative importance of each variable has been found. More the value of the eigenvector, the more important of that function.

Table: 1 Development Indicators of TSPA.

Sr. No.	Tehsil	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.	Ghatol	49.80	37.70	47.47	22.14	88.64	30.30	30.60	31.55	5.04	57.10	18.30	39.43	12575	0.00
2.	Garhi	40.30	53.80	57.40	24.50	96.47	48.24	49.41	47.65	10.00	89.40	47.65	60.60	9607	4.00
3.	Banswara	45.30	52.40	53.09	21.89	83.13	24.85	27.30	33.13	4.30	47.55	31.60	44.20	8390	23.50
4.	Wagidora	50.30	40.90	68.97	15.64	93.90	28.91	24.50	31.00	5.80	55.44	19.40	46.60	11899	0.00
5.	Kushalgarh	49.90	37.30	49.80	2.60	92.95	26.70	20.65	26.70	3.53	50.90	15.62	42.82	11314	3.60
6.	Dungarpur	45.40	51.70	29.45	7.90	98.22	44.50	47.33	44.50	5.70	96.44	31.00	55.52	11360	11.00
7.	Aspur	46.00	44.70	34.14	18.16	93.84	47.26	50.70	53.42	8.22	80.82	19.90	60.96	11761	0.00
8.	Sagwara	43.50	52.40	38.72	13.50	97.60	45.40	50.50	47.60	7.80	83.01	26.21	57.30	10667	13.10
9.	Simalwara	58.90	41.60	33.00	5.08	97.00	36.00	35.56	36.89	4.44	42.44	30.22	48.00	14174	0.00
10.	Jharol	45.90	58.70	40.42	12.53	90.00	26.51	21.30	41.40	2.81	57.03	17.70	32.53	15818	0.00
11.	Khairwara	42.80	57.10	21.55	12.02	89.00	30.56	39.00	35.00	2.78	35.00	17.10	47.62	11521	5.50
12.	Kotra	44.0	24.20	7.73	2.16	76.32	14.40	11.51	26.00	2.63	21.05	6.91	19.00	17443	0.00
13.	Sarara	40.4	56.20	9.07	13.80	94.05	34.05	46.50	50.30	7.03	75.14	35.13	56.80	14518	5.00
14.	Salumbar	46.30	58.90	18.27	11.20	92.00	27.80	31.62	41.45	3.85	74.00	32.91	37.20	14530	7.50
15.	Dhariawad	49.40	37.50	30.38	15.75	86.00	18.00	32.00	38.00	2.00	71.60	9.60	44.40	14843	4.90
16.	Girwa (Partial)	41.20	44.37	13.50	26.50	89.00	45.68	53.08	55.56	8.64	76.54	18.52	56.50	10218	0.00
17.	Pratapgarh	52.80	57.40	43.90	13.30	74.02	17.32	21.23	31.00	3.63	64.53	22.06	37.15	8024	15.00
18.	Arnaud	54.80	46.80	64.33	13.18	75.42	12.30	22.35	26.82	3.35	63.70	20.11	33.00	8533	0.00
19	Abu Road	43.25	32.85	17.36	22.30	95.06	33.30	59.30	39.51	8.64	70.40	38.30	62.96	11908	0.00

Source : Census Report, 2001.

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Table: 2 Correlation Matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	**Ua_2**
1.	1.00	-0.18	+0.48	-0.40	-0.27	-0.50	-0.57	-0.57	-0.42	-0.26	-0.26	-0.54	+0.02	-0.18	**-1.41**
2.	-0.18	1.00	-0.12	-0.05	+0.01	+0.08	+0.03	+0.37	-0.01	+0.23	+0.36	-0.06	-0.23	+0.52	**+0.53**
3.	+0.48	-0.12	1.00	+0.20	-0.05	-0.09	-0.22	-0.36	+0.10	-0.07	+0.12	-0.08	-0.60	+0.09	**-0.19**
4.	-0.40	-0.05	+0.20	1.00	-0.001	+0.39	+0.57	+0.46	+0.63	+0.30	+0.30	+0.51	-0.31	-0.10	**+1.37**
5.	-0.27	+0.01	-0.05	-0.001	1.00	+0.78	+0.61	+0.56	+0.63	+0.62	+0.51	+0.74	+0.08	+0.02	**+1.88**
6.	-0.50	+0.08	-0.09	+0.39	+0.78	1.00	+0.84	+0.80	+0.82	+0.72	+0.42	+0.87	-0.14	-0.04	**+2.27**
7.	-0.57	+0.03	-0.22	+0.57	+0.61	+0.84	1.00	+0.83	+0.75	+0.72	+0.48	+0.90	-0.14	+0.01	**+2.31**
8.	-0.57	+0.37	-0.36	+0.46	+0.56	+0.80	+0.83	1.00	+0.65	+0.81	+0.45	+0.73	-0.01	+0.09	**+2.22**
9.	-0.42	-0.01	+0.10	+0.63	+0.63	+0.82	+0.75	+0.65	1.00	+0.66	+0.66	+0.80	-0.33	-0.09	**+2.21**
10	-0.26	+0.23	-0.07	+0.30	+0.62	+0.72	+0.72	+0.81	+0.66	1.00	+0.57	+0.63	-0.18	+0.14	**+2.09**
11.	-0.26	+0.36	+0.12	+0.30	+0.51	+0.42	+0.48	+0.45	+0.66	+0.57	1.00	+0.47	-0.14	+0.30	**+1.70**
12.	-0.54	-0.06	-0.08	+0.51	+0.74	+0.87	+0.90	+0.73	+0.80	+0.63	+0.47	1.00	-0.14	-0.01	**+2.26**
13.	+0.02	-0.23	-0.60	-0.31	+0.08	-0.14	-0.14	-0.01	-0.33	-0.18	-0.14	-0.14	1.00	-0.40	**-0.56**
14.	-0.18	+0.52	+0.09	-0.10	+0.02	-0.04	+0.01	+0.09	-0.09	+0.14	+0.30	-0.01	-0.40	1.00	**+0.35**
Ua_1	**-2.65**	**+1.89**	**+0.34**	**+3.50**	**+5.24**	**+5.95**	**+5.81**	**+5.81**	**+5.85**	**+5.89**	**+5.25**	**+5.82**	**-1.68**	**+1.35**	
Va_1	**-0.16**	**+0.11**	**+0.02**	**+0.21**	**+0.31**	**+0.35**	**+0.34**	**+0.34**	**+0.34**	**+0.35**	**+0.31**	**+0.34**	**-0.09**	**+0.08**	

Table: 3 Extraction of the First Principal Compnent

Sr. No.	Variables	Va_1	Normalizing Factor of Ua or √ 6.398 i.e. 2.53	First Principal Component (F_1)	Eigen Vector (W)
1.	Percentage of workers	-0.156	X 2.53	-0.39	-1.45
2.	Literacy Rate (%)	+0.11	X 2.53	+0.28	+1.04
3.	Percentage of Cultivated Area To the Total Area	+0.02	X 2.53	+0.05	+0.19
4.	Percentage of Irrigated Area to the Total Cultivated Area	+0.206	X 2.53	+0.52	+0.193
5.	Percentage of Villages Having Educational Facilities	+0.31	X 2.53	+0.78	+2.90
6.	Percentage of Villages Having Medical Facilities	+0.35	X 2.53	+0.89	+3.31
7.	Percentage of Villages Having Postal/ Telegraph Facilities	+0.34	X 2.53	+0.86	+3.20
8.	Percentage of Villages Having Bus Services	+0.342	X 2.53	+0.87	+3.23
9.	Percentage of Villages Having Banking Facilities	+0.344	X 2.53	+0.87	+3.23
10	Percentage of Villages Having Power Supply	+0.35	X 2.53	+0.89	+3.31
11.	Percentage of Villages Having Co-operative Societies	+0.31	X 2.53	+0.78	+2.90
12.	Percentage of Villages Having Paved Road	+0.34	X 2.53	+0.86	+3.20
13.	No. of Livestock on Every 10,000 persons	-0.09	X 2.53	-0.23	-0.86
14.	Percentage of Urban Population	+0.08	X 2.53	+0.20	+0.74
	Eigen Value			**7.23**	

9. A higher Eigen Vector shows more importance of that variable. The percentage of Villages having different facilities with Eigen Vector more than +1.00 shows relatively more importance.
10. At last Composite Index Value for each district has been found by doing a total of standardized values for each variable with multiplication of their eigenvector.
11. Where standardized values, are assessed by extracting each value with its mean and dividing with its standard deviation.
12. The gross value is found by summing up the standardized values of each Tehsil. This gross value is divided by the total no. of variables i.e. 14, which shows the Composite Index Values of every Tehsil.
13. High Composite Index Value shows, a higher level of development.(Table:4)

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Table : 4 Composite Index Method
Standard Values

Tehsil	1	2	3	4	5	6	7	8	9	10	11	12	13	14	C.I.
Ghatol	-0.87	-0.97	+0.14	+0.22	-0.38	-0.25	-1.17	-2.63	-0.31	-1.52	-1.60	-2.35	-0.18	-0.57	**-0.89**
Garhi	+1.95	+0.77	+0.24	+0.28	+2.71	+5.16	+3. 32	+3.20	+6.45	+4.43	+6.77	+4.23	+0.83	-0.10	**+2.87**
Banswara	+0.46	+0.62	+0.19	+0.21	-2.56	-1.90	-1. 96	-2.06	-1.32	-3.28	+2.19	-0.87	+1.24	+2.15	**-0.49**
Wagidora	-1.02	-0.62	+0.36	+0.03	+1.70	-0.67	-2.63	-2.83	+0.72	-1.83	-1.29	-0.12	+0.05	-0.57	**-0.62**
Kushalgarh	-0.90	-1.01	+0.16	-0.33	+1.32	-1.34	-3.55	-4.39	-2.37	-2.67	-2.36	-1.30	+0.25	-0.15	**-1.33**
Dungarpur	+0.43	+0.54	-0.05	-0.18	+3.41	+4.04	+2.83	+2.06	+0.59	+5.73	+2.02	+2.65	+0.25	+0.71	**+1.79**
Aspur	+0.26	-0.21	-0.002	+0.11	+1.67	+4.87	+3.63	+5.30	+4.02	+2.85	-1.14	+4.34	+0.09	-0.57	**+1.80**
Sagwara	+0.99	+0.62	+0.04	-0.03	+3.16	+4.23	+3.58	+3.09	+3.45	+3.25	+0.66	+3.20	+0.50	+0.95	**+1.99**
Simalwara	-3.58	-0.55	-0.01	-0.26	+2.92	+1.47	+0.01	-0.70	-1.13	+1.30	+1.71	+0.31	-0.72	-0.57	**+0.01**
Jharol	+0.29	+1.30	-0.21	-0.05	+0.15	-1.40	-3.39	+0.94	-3.35	-1.54	-1.77	-4.50	-0.27	-0.57	**-1.098**
Khairwara	+1.21	+1.13	-0.13	-0.07	-0.24	-0.17	+0.84	-1.38	-3.39	-5.60	-3.08	+0.19	+0.18	+0.07	**-0.75**
Kotra	+0.85	-2.42	-0.27	-0.35	-5.26	-5.13	-5.73	-4.64	-3.60	-8.17	-4.85	-5.60	-1.82	-0.57	**-3.40**
Sarara	+1.92	+1.03	-0.26	-0.02	+1.74	+0.88	+2.63	+4.17	+2.40	+1.80	+3.20	+3.05	-0.83	+0.01	**+1.55**
Salumbar	+0.17	+1.32	-0.17	-0.09	+0.95	-1.01	-0.93	+0.96	-1.94	+1.59	+2.57	-3.05	-0.84	+0.30	**-0.012**
Dhariawad	-0.75	-1.00	-0.04	+0.04	-1.43	-3. 97	-0.84	-0.29	-4.46	+1.15	-4.08	-0.81	-0.94	0.00	**-1.24**
Girwa (Partial)	+1.68	-0.25	-0.22	+0.34	-0.24	+4.39	+4.20	+6.07	+4.59	+2.06	-1.54	+2.95	+0.62	-0.57	**+1.72**
Pratapgarh	-1.76	+1.16	+0.10	-0.03	-6.17	-4.17	-3.41	-2.83	-2.24	-0.15	-0.53	-3.06	+1.36	+1.17	**-1.47**
Arnaud	-2..36	+0.02	+0.31	-0.04	-5.16	-5.69	-3.41	-4.35	-2.62	-0.31	-1.08	-4.35	+1.19	-0.57	**-2.01**
Abu Road	+1.07	-1.49	-0.18	+0.22	+2.16	+0.66	+5.68	+0.25	+4.59	+0.93	+4.10	+4.96	+0.05	-0.57	**+1.60**

Level Development in Tribal Sub-Plan Area

On the basis of composite index, Tribal Sub Plan Area may be divided into three categories of level of development. Although TSPA is not developed yet variation is found regarding development. (fig.2)

Table : 5 Level of Development in TSPA

Sr. No.	Composite Index Value	Level of Development	Name of the Tehsil
1.	More than +1.00	Average	Garhi, Sagwara, Aspur, Dungarpur, Girwa (Partial), Abu Road, Sarara.
2.	-1.00 to +1.00	Poor	Simalwara, Salumbar, Banswara, Wagidora, Khairwara, Ghatol.
3.	Less than –1.00	Very Poor	Jharol, Dhariawad, Kushalgarh, Pratapgarh, Arnaud, Kotra.

1. Average Level of Development

This category includes the tehsils, having composite index values more than +1.00, namely Garhi, Sagwara, Aspur, Dungarpur, Girwa, Abu Road and Sarara.

Garhi Tehsil leads all other tehsils regarding development. The causative factor is its plain feature, which is responsible for the availability of infrastructural facilities. The tehsil has a high literacy rate, so it has a maximum no. of villages having medical, banking, and cooperative facilities.

Sagwara and Aspur tehsils too have plain physiography, which causes average development.

Dungarpur is leading all the tehsils regarding the percentage of villages having educational and power supply. A good educational facility is responsible for the development.

Girwa tehsil has a high percentage of irrigated area to the total cultivated area and good transport services, whereas Abu Road shows good pattern in respect of connectivity to the paved road.

So plain feature an average literacy rate is the basic reason behind the average development of the tehsils.

Special attention should be given to making it a developing zone.

2. Poor Level of Development

This category includes the tehsils having composite index values between –1.00 to +1.00. Simalwara, Salumbar, Banswara, Wagidora, Khairwara and Ghatol tehsils are included in this category.

Simalwara tehsil has a maximum percentage of workers, whereas Salumbar has a maximum literacy rate. Banswara tehsil leads regarding the percentage of the urban population.

These tehsils have poor levels of development, and needed to be upgraded to average level development.

3. Very Poor Level of Development

This category includes the tehsils having composite index values less than –1.00. Six tehsils are included in this category- Jharol, Dhariawad, Kushalgarh, Pratapgarh, Arnaud and Kotra.

Amongst all the tehsils Kotra has the least composite index value, indicating least development level. The basic reason is its hilly nature, which is a physical obstacle in the course of development. Besides this, it has the least literacy rate i.e. 24.20%. It is a hindrance in respect of human resources. Thus this tehsil left behind in other aspects too, such as the availability of infrastructural facilities.

There is an urgent need to pay attention to this zone.

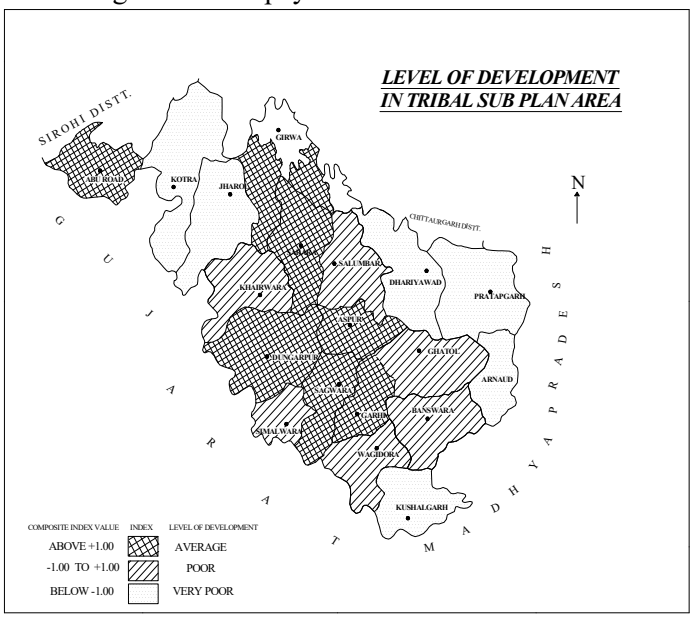

Fig. 2

Conclusion

Thus it is evident that although the total Tribal Sub Plan Area is under development yet variations and inequalities are found in the area.

The area has physical obstacles, yet it is an urgent need to take up development programs as per the level of development.

Now it is required to plan this TSPA keeping the view to avail more infrastructural facilities to the area, so the average may become a developed zone,

and poor and very poor zone may become a developing zone. This will help to eradicate the imbalances and the area will not remain isolated regarding progress and maintain equalised speed towards the destination of progress.

Thus this backward part of Rajasthan may shine with pride on the map of Rajasthan and India as well.

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