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Geographical Analysis of Regional Disparities – A Case Study of Chitradurga District, Karnataka

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Abstract

The paper analyses the regional disparities of the nine talukas of Chitradurga district in Karnataka with the help of thirty-seven social, economic and demographic indicators. The identification of the regional disparities is made with the help of Kendall's ranking coefficient method for the years 1988-89 and 1998-99. The talukas show different degrees of development ranging from 'low' to 'very' highly developed regions. In 1998-99, two talukas showed less disparity as compared to the earlier period.

Introduction

Amongst the developing countries, India has seen a remarkable economic growth and a rise in the standard of living over the last decades. However the benefit of this process has spread highly unevenly, especially at the regional level. Usually the disparities within the district are much greater than between the states. Therefore, the intra- and interregional disparities and its relation are important issues nowadays. The aim of the paper is to illustrate how taking into considerations the social, economic and demographic indicators in fighting unsustainable regional disparities in future, can bring out regional disparities within a district.

Study Area

Chitradurga district is situated in the southern part of the Deccan peninsula and occupies a central position in the State of Karnataka. The district lies between 13° 34' and 15° 02' north latitude and 75° 37' and 77° 01' east longitude. The district has an area of 10,852 sq. km. It is bounded in the north by the district of Dharwad and Bellary, on the south by Tumkur district and on the west by the district of Shimoga and Chikkamagalure. On the north, the river Tungabhadra separates the district from Dharwad district.

Regional disparities in the levels of development have become a major concern for any type of spatial planning development. This is a multi-dimensional phenomenon which is governed by several factors of an area. Nowadays the central theme of research and planning relates to the socio-economic upliftment of the rural sector. The modes of development like planning, industrialization, rapid development of transport and

communication, development of banking facilities (with branches in most villages, towns and cities) and establishment of different types of educational institutions, health facilities, technological and institutional innovations in agriculture are the major factors contributing to regional development. However, in actual practice these infrastructural facilities may not be available in a uniform distribution pattern in a region. As a result, regional disparities do occur in a given time and space.

In order to reduce or eliminate such regional disparities it is essential to pay attention to the regions of low development. Population and society are dynamic factors of region. The overall development of a region is based on an equitable distribution and sustained growth of the relevant factors. Agricultural development is also co-related with a healthy development of a region.

The talukas that are highly developed in terms of their social, economic and demographic factors can also show significant growth and development in terms of optimum land use and agricultural efficiency. The reverse may be the case in those talukas in which the regional infrastructure is poor. It is believed that the regional disparities – in this study based on 37 factors - can also have an indirect influence on the level of agricultural development. Therefore, it is necessary to develop Chitradurga district on the basis of social, economic and demographic factors.

The regional disparities are due to the variations in the nature of physical, economic, social and demographic factors. To minimize such disparities their identification is the first step. There are number of factors to measure regional disparities. But based on the availability of data, the following 37 indicators are employed to find out the regional disparities in the levels of development (table 1).

With the help of Kendall's ranking coefficient method, the identification of regional disparities is made. These indicators are broadly divided into social, economic and demographic ones. Because of the different approaches of various authors viewing the development from various angles, the selections of these indicators here are purely made on an arbitrary base. The indicators selected are given in the table below (Table 1). The ranks of all talukas of the district with respect to each selected indicator and the total rank order scores of the levels of development is given in table no. 2a and 2b. The standard deviation grouping technique is applied to divide the districts into very high, high, medium, and low and very low developed regions based on combined rank scores of 37 indicators (Table 3, Map 1).

Table 1 - **Indicators**

Social	Economic	Demographic
1. Number of primary schools 2. Number of high schools 3. Number of colleges 4. Number of kindergartens 5. Number of post offices 6. Number telegraph offices 7. Number of villages with drinking water facilities. 8. Primary health centres. 9. Number of family welfare centres 10. Number of veterinary hospitals 11. Number of electrified villages 12. Number of adult education centres. 13. Number of permanent Talkies	1. Intensity of cropping 2. Intensity of irrigation 3. Number of co-operative Societies. 4. Number of regulated markets. 5. Net area sown (as percentage to the geographical areas) 6. Net area irrigated (as percentage to the net sown area) 7. Area under H.Y.V. (as percentage to the net sown area) 8. Number if agricultural credit societies 9. Number of industries (large/medium scale) 10. Length of roads in km 11. Length of railways in km 12. Number of commercial banks 13. Cultivators (as percentage to district total cultivators) 14. No. of co-operative banks. 15. Productivity Index (Bhatia's) 16. Degree of commercialisation 17. Number of co-operative go-downs 18. Irrigational pump-sets (as percentage to the total pump-sets in the dist) 19. Use of fertilizers (per hectare in kg)	1. Number of urban centres 2. Density of population 3. Cattle density (per 10,000 ha of sown area) 4. Total workers (as percentage to the total population) 5. Literacy (percentage to the total population)

Table: 2a - **Chitradurga District: Regional Disparities in the Level of Development based on Social, and Demographic Indicators**

Social Indicator

	Name of the Taluka	Year	PS	HS	COL	KG	PO	TO	DW	PHC	FHC	VH	ELV	AEC	THE	Total Ranks
1	Challakere	1988	4	3	3	5	3	2	1	1	2	3	2	3	3	**35**
		1998	3	3	3	6	3	2	2	2	2	2	2	4	4	**38**
2	Chitradurga	1988	1	2	1	2	1	2	2	1	2	2	1	1	2	**20**
		1998	2	2	2	2	2	3	3	2	1	1	3	4	2	**29**
3	Davanagere	1988	3	1	1	4	1	1	3	1	1	1	3	4	1	**26**
		1998	1	1	1	1	1	-	5	1	1	2	5	1	1	**21**
4	Harihar	1988	7	7	7	5	7	2	9	2	3	2	7	7	3	**63**
		1998	8	5	6	3	6	2	8	3	4	2	8	6	2	**63**
5	Hiriyur	1988	3	5	2	5	2	2	4	1	2	2	4	2	4	**40**
		1998	5	6	3	4	3	2	6	2	2	2	6	5	3	**50**
6	Holalkere	1988	5	4	5	5	5	2	5	2	3	3	3	5	-	**45**
		1998	6	7	5	5	5	2	4	3	4	2	4	3	6	**58**
7	Hosadurga	1988	2	6	4	5	4	2	6	2	3	3	6	8	4	**54**
		1998	4	4	4	7	4	1	1	3	3	2	1	3	5	**43**
8	Jagalur	1988	6	8	6	1	6	2	7	2	3	4	5	6	4	**58**
		1998	7	8	7	7	7	3	7	4	4	2	7	2	6	**69**
9	Molakalmur	1988	8	9	8	3	8	2	8	2	3	5	7	5	-	**64**
		1998	9	9	8	8	8	3	9	4	4	2	9	5	6	**85**

Demographic Indicators

	Name of the Taluka	Year	UCE	DOP	CD/T	TW/T	LI/T	Total Ranks
1	Challakere	1988	2	9	6	1	7	**25**
		1998	2	8	9	6	7	**32**
2	Chitradurga	1988	2	3	9	8	1	**23**
		1998	2	3	7	9	4	**25**
3	Davanagere	1988	1	1	2	6	1	**11**
		1998	1	1	4	5	9	**20**
4	Harihar	1988	2	2	7	5	2	**18**
		1998	2	2	2	7	8	**21**
5	Hiriyur	1988	2	8	1	3	6	**20**
		1998	2	9	8	1	5	**25**
6	Holalkere	1988	2	4	5	7	3	**21**
		1998	2	4	5	3	1	**15**
7	Hosadurga	1988	2	5	4	9	4	**24**
		1998	2	6	3	4	2	**17**
8	Jagalur	1988	2	6	8	4	5	**25**
		1998	2	5	6	2	3	**18**
9	Molakalmur	1988	2	7	3	2	8	**22**
		1998	2	7	1	8	6	**24**

Table: 2b - **Chitradurga District: Regional Disparities in the Level of Development based on Economic Indicators**

Economic Indicators

	Name of Taluka	Year	Int. Cro/ NSA	Int/Irr NA Irri	Co-op. Soc.	NAS/ TGA	NIA/ NSA	HYV/ NSA	AGR/ CRE/ Soc.	No. Indu sed	Road Len	Length Rail-ways
1	Challakere	1988	4	6	3	6	4	7	2	4	5	-
		1998	8	5	4	6	7	5	5	4	1	3
2	Chitradurga	1988	3	5	1	2	6	6	2	3	2	3
		1998	3	3	2	4	8	6	2	3	2	4
3	Davanagere	1988	2	3	2	3	1	2	2	1	6	2
		1998	2	1	1	2	2	2	1	1	3	2
4	Harihar	1988	1	2	7	1	2	1	6	2	9	4
		1998	1	2	3	1	1	1	3	2	6	5
5	Hiriyur	1988	6	1	3	9	3	3	1	7	1	-
		1998	4	6	5	7	4	9	4	5	4	-
6	Holalkere	1988	8	9	4	7	9	4	4	5	4	1
		1998	7	8	7	8	6	7	6	5	7	1
7	Hosadurga	1988	7	8	5	5	8	9	2	9	3	5
		1998	9	8	6	3	9	8	7	6	5	6
8	Jagalur	1988	5	7	6	4	7	5	3	8	7	-
		1998	6	4	8	5	5	3	6	8	8	-
9	Molakalmuru	1988	9	4	8	8	5	8	5	6	8	-
		1998	5	7	9	9	3	4	9	7	9	-

	Name of Taluka	Year	Com Banks	Cul% Dist Cul	No Coop. Bank	Pro ducts Invity	DEG/ of COM/ IN	Go Downs	Pumps sets%	Ferti/ NSA MAR	No REG	Total Ranks	Grand Total of all IND
1	Challakere	1988	3	1	4	3	7	6	1	8	2	76	**136**
		1998	6	2	2	7	1	6	1	9	4	86	**156**
2	Chitradurga	1988	2	3	1	9	5	2	4	6	1	66	**109**
		1998	2	1	1	6	3	2	3	4	1	60	**14**
3	Davanagere	1988	1	2	2	6	2	1	7	3	2	50	**87**
		1998	1	3	1	2	7	1	4	2	1	39	**60**
4	Harihar	1988	3	8	4	7	3	3	8	1	2	74	**155**
		1998	3	8	-	1	8	3	8	1	3	60	**144**
5	Hiriyur	1988	4	4	3	8	1	2	3	2	2	63	**123**
		1998	5	6	2	8	4	4	2	7	3	89	**164**
6	Holalkere	1988	3	5	3	4	8	4	6	5	-	93	**159**
		1998	5	5	-	5	6	5	6	5	3	102	**175**
7	Hosadurga	1988	4	6	5	2	9	5	9	9	2	112	**190**
		1998	4	4	-	9	9	7	9	8	2	119	**179**
8	Jagalur	1988	5	7	5	5	6	7	5	7	2	101	**184**
		1998	8	7	-	3	5	8	5	5	4	99	**186**
9	Molakalmuru	1988	4	9	5	1	4	8	2	4	-	99	**185**
		1998	7	9	2	4	2	9	7	3	3	108	**218**

Mean for Total Ranks (1988) 147.55, SD = 34.33 Mean for Total Rank (1998), 157.30 DS = 38.54

Table No. 3 - **Regional Disparities in the Levels of Development using Kendall's Rank Order Score Method**

Class	Rank	No. of Talukas	Name of the of the Talukas	Range	No. of Talukas	Name of the of the Talukas
	1988-89			**1998-99**		
Very High	<113.22	2	Chitradurga Davangere	< 118.79	2	Chitradurga Davangere
High	113.22-147.55	2	Challakere Harihar	118.80-157.332		Challakere Harihar
Medium	147.56-181.88	2	Harihar Holalkere	157.34-195.874		Holalkere Hosadurga Jagalur Hiriyur
Low	181.89-216.21	3	Hosadurga Jagalur Molakalmure	195.88-234.41	1	Molakalmure
Very Low	>216.21	0	NIL	>234.41	0	NIL

Very high development region

During both the study periods (1988-89 and 1998-99) very high development was observed in two talukas namely Chitradurga and Davangere. The points in favour of this development were, besides Chitradurga being the head quarter of the district and Davangere being facilitated by irrigation from the Tungabhadra river project, that most of the indicators like number of commercial banks, number of industries, urban centres, total workers, primary schools, high schools and college, family planning centres, agricultural implements, regulated markets etc. were satisfactory. The combined interplay of these indicators have led these talukas into a very high development

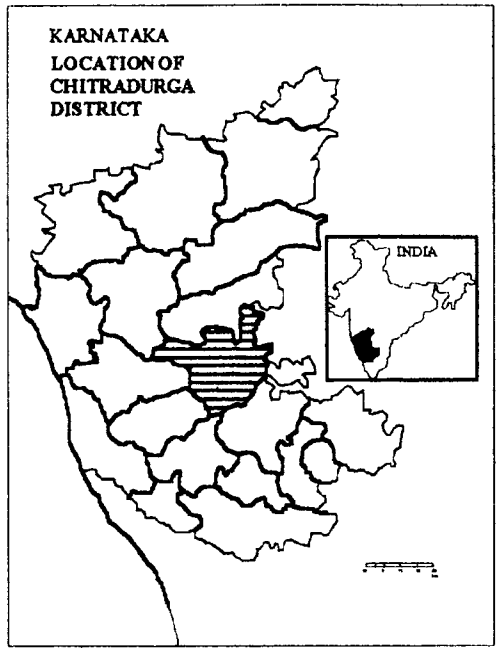
High development region

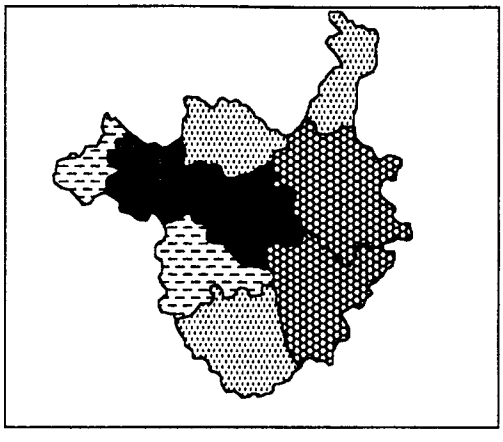
In this category fall two talukas, namely Challakere and Hiriyur, during 1988-89, and two talukas viz. Challakere and Harihar during 1998-99. These talukas are leading in some of the indicators like agricultural co-operative societies, use of agricultural implements, agricultural banks and net sown area etc.

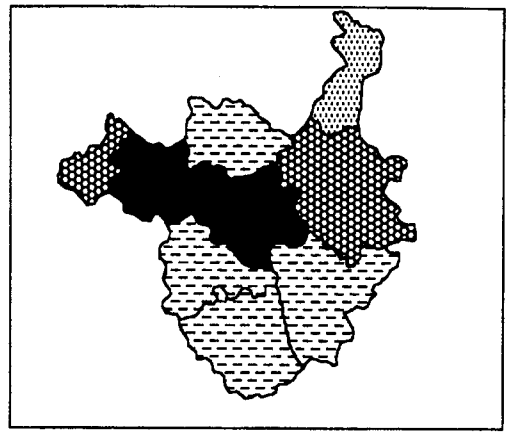
Medium developed region

In this group we find two talukas namely Harihar and Holalkere in 1988-89, and four talukas namely Hiriyur, Holalkere, Hosadurga and Jagalur during 1988-99. They score order ranks in many indicators.

Karnataka Chitradurga District
Regional Disparities in Level of Economic Development







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Level of Development & Scores

1988-89		1998-99
Below-113.22[VH]		Below-118.79[VH]
113.23-147.55[H]		118.80-157.33[H]
147.56-181.88[M]		157.34-195.87[M]
181.89-216.21[L]		195.88-234.41[VL]
Above-261.21[VH]	NIL	Above-234.41[VH]

Low developed region

In this group are three talukas namely Hosadurga, Jagalur and Molakalmuru during 1988-89. Besides that this group has the least rank score in many of the indicators, the low development can be also explained by the physical constraints of the rugged terrain, the less fertile soils and less rainfall/ irrigation.

Very low developed region

In the district no taluka falls under the very low development category during both the study periods.

Changes

During 1988-89, Hiriyur taluka was classified as high developed region, whereas it has been shifted to medium development region during 1998-99, due to the lack of irrigation facilities and other related factors like soil fertility etc., Harihar taluka was in the category of medium development during 1988-89, whereas it has moved to the high category of development during 1998-99. Hosadurga and Jagalur talukas were in the category of low development during 1988-89, whereas they were shifted to the medium category of development during 1998-99. A combination of favourable factors during the 1998-99 period have brought about an improvement in the level of development.

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