

# REGIONAL ANALYSIS OF URBAN-RURAL DIFFERENTIALS IN LITERACY IN MALAPRABHA RIVER BASIN, KARNATAKA STATE, INDIA

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## **Abstract**

Literacy and Education are reasonably good qualitative indicators and plays a very crucial role in the social and economic development of a country. Spread and diffusion of literacy is positively associated with the essential traits of today's civilization such as, modernization, industrialization, urbanization, communication, trade and commerce. The present paper is an attempt to analyze the spatial distribution of population and literates by literacy, trends of differential in literacy rate, spatial patterns of urban-rural differentials and the relationship between rural and urban differential index among the talukas of Malaprabha River Basin Area, Karnataka State. India is one of the developing nation of the world, of which the study area is part, are characterized not only by low literacy rates but also by a great disparity in the literacy pattern between, rural and urban and between male and female, a disparity in consonance with differences in necessity, prosperity and opportunity to become literate. Equally striking are the regional disparities in literacy and literacy differentials itself. This study based upon the secondary sources of data, though the study area is a natural region, the taluka/ tehsils has been taken as unit of study.

**Key words:** Rural & Urban population, distribution, differential index, literacy rate. .

## **Introduction**

Literacy and Education are reasonably good qualitative indicators of development and plays a very crucial role in the social and economic development of a country. Spread and diffusion of literacy is positively associated with the essential traits of today's civilization such as, modernization, industrialization, urbanization, communication, trade and commerce. Literacy is one of the important demographic elements, which is a good measure of human process towards modernization. It is also the social characteristics and forms a significant input in the overall development of individuals enabling them to comprehend their economic, social, political and cultural environment better and respond to it properly. Higher levels of literacy and education lead to greater awareness and also contribute in improvement of overall conditions. It acts as catalyst of social upliftment enhancing the returns on investments made in almost every aspect of development effort, be it population control, health, hygiene, environmental degradation control, empowerment of women and weaker sections of the society. Lack of literacy on the other hand acts as a break on the social advancement, economic progress and political maturity of a society. Thus, literacy is that qualitative attribute of population which is a fairly reliable index of socio-economic development of an area.

The Indian Census defines, a person aged seven and above, who can both read, write and understanding in any language, is treated as literate. Literacy is defined as the ability to read and write at least a simple message in any language (Census of India, 2011). India is a developing nation of the world, of which the study area is part, are characterized not only by low literacy rates but also by a great disparity in the literacy pattern between rural and urban, between males and females and between young and the aged, a disparity in consonance

with differences in necessity, prosperity and opportunity to become literate. Equally striking are the regional disparities in literacy and literacy differentials itself. The rural urban disparities in literacy pattern are essentially a function of the different rates of change taking place in villages and towns. Literacy, like other innovations, initiates in towns and diffuses subsequently into the countryside. The process of literacy begins in the urban places and trickles down to the village. The pace of the process depends on the intensity of interaction between the two elements i.e. locality and literacy or gender and literacy. The degree of urban influence and the intensity of urban-rural interaction are evidently two major factors involved in the reduction of disparities between urban and rural literacy rates. Urban influence may also play an indirect role by stimulating diversification of the rural economy. A diversified economic base in village generally accelerates the progress of rural literacy (Krishan and Shyam, 1978).

## Objectives

The objectives of this analysis are: To evaluate the spatial distribution of population and literates by literacy rates in Malaprabha River Basin, in 2001 and 2011. To examine the trends of urban-rural differentials in literacy in Malaprabha River Basin, Karnataka State and India from 1971 to 2011. To describe the spatial distribution of differential in literacy in the talukas of Malaprabha River Basin, in 2001 and 2011, and To examine the relationship between rural and urban literacy rate, in 2001 and 2011

## Material and research methods

The study is mainly based on the secondary sources of data obtained from 1971 to 2001, District Census Hand Books C. Ds. of Belgaum, Dharwad, Gadag and Bagalkot districts, and Final Reports of 2011 Census from Directorate of Census Operations, Karnataka State Bangalore; besides this, data were also collected from various government offices in the districts. In the present paper, most suitable statistical and cartographic techniques have been applied. The talukas has been considered as the smallest unit of study. The study is based on 2001 and 2011 census data and urban-rural differential literacy rate is calculated by using the following formula (Krishna and Shyam, 1978).

$$ID = \frac{U - R}{T}$$

Where; **ID** = index of urban- rural differential in literacy; **U** = Percentage of literates in urban population; **R** = Percentage of literates in rural population, and **T** = Percentage of literates in total population.

## Study area

The Malaprabha River Basin area of Karnataka state is approximately triangular shape, located in the extreme western part of the Krishna basin. It lies between 15° 05' 02" to 16° 20' 19" N. latitudes and 74° 05' 43" to 76° 05' 33" E. longitudes, covering an area of 11549 sq.km, out of which 3880 sq.km in Belgaum(33.60%), 1950 sq.km in Bagalkot (16.88%), 2789 sq.km in Dharwad (23.72%) and 2657 sq.km in Gadag District (23.01%) [Fig.1]. The basin area is consists of Western Ghats and typical of the eastern part of Deccan plateau including natural sub divisions of the Semi-Malnad and the Northern Maidan, with the distinct characteristics. The river Malaprabha is the most important right bank tributary of the river Krishna. The Bennihall, Hire hall and others are the principle tributaries of the Malaprabha

River. The entire river basin experiences semi-arid type of climate, spread in Hilly, Northern Dry and Northern Transition Zone of Agro-Climatic Zones of Karnataka State. Geographically ubiquities deep black cotton soils, Unpredictable monsoonal rainfall, Droughts and famines are part of life of people in the study region.

The present study is a natural region and occupies 6.02% area of the Karnataka state. As per 2011 census, the population of Malaprabha River Basin is 3.38 million (5.53% of the state's total population) of which 77.66% is rural and 22.34% is urban inhabitants. The dominance of rural population makes the regional economy mainly agrarian. The basin's 68% of the work force, however, is still dependent on the agriculture and its allied activities for their livelihood. The economic development and prosperity of the masses depend primarily on agricultural base.

## Results and discussion

### Spatial Distribution of Population and Literates by Literacy Rates in Malaprabha River Basin, in 2001 and 2011

The comparable analysis of the distribution of population and literates by literacy rates in Malaprabha River Basin of the 2001 and 2011 censuses have been presented in the Table No; 1. As per the figures of 2011 census, numbers of talukas falling under different ranges of literacy rate as given in the table have remarkably changed during the decade. None of the talukas in the study area has below the 60 percent literacy rate, where as in 2001, five talukas had fallen under below the 60 percent rate and none of the taluka was under the range of 80+ literacy rate in the study area. The three talukas namely Saundatti, Badami and Ramdugra that fall in the range of 60 – 69.99 percent rate of literacy during 2011. These talukas have the 27.85 percent of total population and 18.94 percent of total literates of the basin area. All other ten talukas in the basin area have literacy rate above the 70 percent, more than 72 percent of total population and 81 percent of total literate habitats in this range of literacy.

With regard to urban areas, in 2011, seven talukas of basin area having less than 80 percent range of literacy rate with 57 percent of urban population and 54 percent of urban literates. Five talukas can be proud of having more than 80 + range of literacy rate, with more than 43.20 percent total urban population and 45.66 percent urban literates. Khanapur is the evidence of highest rate of literacy (85.97%) among the five talukas of basin area. While in 2001, three talukas have below 70 percent, eight talukas have less than 80 percent and only one taluka fallen 80 + percent ranges of literacy rate. Share of population and literates in less than 70 percent, less than 80 percent and 80+ ranges have 18.51, 77.93 and 3.56 percent of urban population and 16.62, 79.29 and 4.09 percent urban literates in basin area respectively. However, the scenario is not so remarkable in case of rural areas. In 2011, there are four talukas, which have less than 70 percent literacy range, with 37.29 percent rural population and 34.34 percent of rural literates, other nine talukas of the basin, which have less than 80 percent of rural literacy rate, with 62.71 percent rural population and 65.66 percent rural literates. But in 2001, out of thirteen talukas, five talukas falling under same range of literacy and remaining eight talukas falling below the 80 percent literacy rate. Share of population and literates in less than 70 percent and less than 80 percent range have 37.29 and 62.71 percent of rural population and 34.34 and 65.66 percent rural literates in basin area respectively.

Table 1. Distribution of Population and Literates by Literacy Rates in Malaprabha River Basin, Karnataka State: 2001-2011 [Share of Talukas]

Range of Literacy Rate	No of Talukas	2001				No of Talukas	2011			
		Population		Literates			Population		Literates	
		Absolute	%	Absolute	%		Absolute	%	Absolute	%
<b>Total</b>	<b>13</b>	<b>3070963</b>	<b>100</b>	<b>1619656</b>	<b>100</b>	<b>13</b>	<b>3383512</b>	<b>100</b>	<b>2130605</b>	<b>100</b>
<b>40 – 49.99</b>	-	-	-	-	-	-	-	-	-	-
<b>50 – 59.99</b>	5	1337076	43.54	645862	39.88	-	-	-	-	-
<b>60 – 69.99</b>	7	1410876	45.65	768457	47.44	3	942316	27.85	403602	18.94
<b>70 – 79.99</b>	1	332011	10.81	205337	12.68	10	2441196	72.15	1727003	81.06
<b>80 +</b>	-	-	-	-	-	-	-	-	-	-
<b>Rural</b>	<b>13</b>	<b>2429845</b>	<b>100</b>	<b>1210124</b>	<b>100</b>	<b>13</b>	<b>2627516</b>	<b>100</b>	<b>1596359</b>	<b>100</b>
<b>40 – 49.99</b>	-	-	-	-	-	-	-	-	-	-
<b>50 – 59.99</b>	-	-	-	-	-	-	-	-	-	-
<b>60 – 69.99</b>	5	1098970	45.23	497567	41.12	4	979802	37.29	548129	34.34
<b>70 – 79.99</b>	8	1330875	54.77	712557	58.88	9	1647714	62.71	1048230	65.66
<b>80 +</b>	-	-	-	-	-	-	-	-	-	-
<b>Urban</b>	<b>12</b>	<b>641118</b>	<b>100</b>	<b>409532</b>	<b>100</b>	<b>12</b>	<b>755996</b>	<b>100</b>	<b>534246</b>	<b>100</b>
<b>40 – 49.99</b>	-	-	-	-	-	-	-	-	-	-
<b>50 – 59.99</b>	-	-	-	-	-	-	-	-	-	-
<b>60 – 69.99</b>	3	118628	18.51	68065	16.62	-	-	-	-	-
<b>70 – 79.99</b>	8	499650	77.93	324738	79.29	7	429399	56.80	290858	54.44
<b>80 +</b>	1	22840	3.56	16729	4.09	5	326597	43.20	243388	45.56

### Trends of Urban-Rural Differential in Literacy, 1971 To 2011

Table No: 2 reveals that the literacy rate improved from 32.38% in 1971 to 53.80% in 1991 and rose further to 72.40% in 2011. Similarly, the literacy rate for urban areas which was 44.92% in 1971 rose to 65.67% in 1991 and then increased further to 80.36% in 2011. In rural areas, the literacy rate which was only 29.41% in 1971 increased to 50.66% in 1991 and further improved to 70.08% in 2011 (Table No: 2).

A considerable growth has taken place in literacy during 20th century, but it has not been satisfactory. It is however, well known that this progress is mainly concentrated in the urban areas, while the vast rural areas are far behind. An encroaching feature is that the growth rate of literacy in the decade ending 2011 has been higher in the rural areas. Despite these improvements, literacy in urban areas was 80.36% and that in rural areas, 70.08%. The most important reason behind the increase in literacy is the new definition and concept of

literacy in the census of 1991 which excludes the population in the age-group of 0 to 6 years from the total population. In this way, the 1991 census uses the term 'Literacy Rate' in relation to the age-group of seven years and above (Census of India, 1991). The urban-rural differential index in literacy rate in Malaprabha River Basin decreased continuously from 0.48% point in 1971 to 0.14% point in 2011. Karnataka State and India has also made remarkable differences in literacy since green revolution. It has decreased during the same period from 0.73% to 0.22% and 0.94% point in 1971 to 0.23% point in 2011 respectively.

Table 2. Literacy Rates and Differential Index, Malaprabha River Basin, Karnataka State and India, 1971 to 2011

Census Year	Malaprabha River Basin			
	Total Literacy	Urban Literacy	Rural Literacy	Urban-Rural Differential Index
1971	32.38	44.92	29.41	0.48
1981	36.72	47.71	33.79	0.38
1991	53.82	65.87	50.66	0.28
2001	62.03	74.01	58.80	0.25
2011	72.40	80.36	70.08	0.14

Census Year	Karnataka State				India			
	Total Literacy	Urban Literacy	Rural Literacy	Urban-Rural Differential Index	Total Literacy	Urban Literacy	Rural Literacy	Urban-Rural Differential Index
1971	31.50	52.09	29.23	0.73	34.5	60.2	27.9	0.94
1981	46.21	68.03	38.72	0.63	43.6	67.2	36.0	0.72
1991	56.04	74.21	47.70	0.47	52.2	73.1	44.7	0.54
2001	66.64	81.05	59.68	0.32	64.8	79.9	58.7	0.33
2011	75.60	84.58	68.31	0.22	74.04	82.4	65.5	0.23

The narrowing down of the urban-rural differential index as well as disparity ratio was associated with increasing degree of urban-rural interaction, increasing socioeconomic functional value of education in the countryside, improving standards of living, and increasing facilities for schooling in the countryside. The 2001 to 2011 decade period when the absolute number of Uttar Pradesh illiterates declined (by 1, 79,386), indicating that the literacy growth rate is now outstripping the population growth.

### Urban-Rural Differential in Literacy

The urban-rural differential in literacy is marked with notable variations in its distribution among the talukas of the basin. It varies from 0.258 in Ramadurg to 0.006 in Naragund taluka with a basin average of 0.142 in 2011 (Table 3). These variations may be conveniently grouped into five grades (Table 4). The graded distribution of urban-rural differential in literacy as given in Table No: 4 shows that none of the taluka of the basin fallen under very high grade (0.300 and above) during 2011 decade, where as in 2001, twenty five percent talukas of the basin lie under this grade, comprising the talukas of Badami (0.405), Ramadurg (0.397) and Dharwad (0.340) in north eastern and western part of the basin. These talukas having very high differential index which is more than the basin average (0.245 in 2001). The reasons for these differentials are low level of urbanization, basically traditional agrarian economy, and high concentration of socio-economically backward sections of the society, inadequate educational infrastructure and late start of education in rural areas.

In 2011, only one taluka (8.33%) i.e. Ramadurg (0.258) having high differential index of 0.225 to 0.300% forms a distinct regions in the northern part of the basin. But in 2001, there are four talukas was fallen under this high grade of urban-rural differentials, which consists of 33.34 percent of talukas of basin area. The urban-rural gap in terms of literacy is minimizing continuously due to educational facilities in rural mass and the rural population is more aware about the benefit of literacy. About forty two percent talukas of the basin fall under the medium grade of 0.150 to 0.225 urban-rural differential literacy indices in 2011, forms two distinct regions in the western and north eastern part of the study area. This region encompasses of the talukas of Badami (0.210), Bailhongal (0.195), Dharwad (0.169), Hunagund (0.164) and Khanapur (0.157). Where as in 2001, only one taluka i.e. Gadag taluka (0.218) noticed under this category. The urban-rural differential has been reducing continuously due to faster increase in rural literacy in the recent decade. The Gadag (0.140), Saundatti (0.139) and Ron (0.096) talukas of basin are observed in the low grade of 0.075 – 0.150 urban- rural differential literacy indices in 2011. While in 2001, seventeen percent talukas of the basin lays under this grade, comprising the talukas of Ron (0.145) and Kundagol (0.131).

Table 3. Taluka wise Literacy Rates and Urban- Rural Differential Index in Literacy, Malaprabha River Basin, Karnataka State, 2001 & 2011

Talukas	2001				2011				Gap
	Total	Urban	Rural	URDI	Total	Urban	Rural	URDI	2001 - 11
Khanapur	66.02	83.68	64.14	<b>0.296</b>	75.65	85.97	74.07	<b>0.157</b>	<b>0.139</b>
Bailhongal	63.09	78.17	60.97	<b>0.273</b>	72.90	85.25	71.04	<b>0.195</b>	<b>0.078</b>
Saundatti	56.54	69.65	54.67	<b>0.265</b>	68.64	77.06	67.49	<b>0.139</b>	<b>0.125</b>
Ramadurga	54.98	73.22	51.37	<b>0.397</b>	66.36	81.10	63.98	<b>0.258</b>	<b>0.139</b>
Badami	56.37	73.02	50.19	<b>0.405</b>	68.43	79.05	64.69	<b>0.210</b>	<b>0.195</b>
Hunagund	59.68	72.04	55.57	<b>0.276</b>	70.11	77.13	65.64	<b>0.164</b>	<b>0.112</b>
Naragund	64.08	65.24	63.45	<b>0.028</b>	74.16	74.46	73.99	<b>0.006</b>	<b>0.022</b>
Ron	63.86	70.64	61.35	<b>0.145</b>	73.62	78.75	71.67	<b>0.096</b>	<b>0.049</b>
Gadag	71.44	78.84	63.27	<b>0.218</b>	78.88	84.13	73.11	<b>0.140</b>	<b>0.078</b>
Dharwad	59.22	77.83	57.70	<b>0.340</b>	72.13	83.48	71.28	<b>0.169</b>	<b>0.171</b>
Hubli	0.00	0.00	63.09	<b>0.000</b>	0.00	0.00	73.68	<b>0.000</b>	<b>0.000</b>
Navalagund	63.89	66.02	63.10	<b>0.046</b>	74.67	76.36	74.03	<b>0.031</b>	<b>0.015</b>
Kundagol	65.39	73.00	64.46	<b>0.131</b>	74.50	76.96	74.18	<b>0.037</b>	<b>0.093</b>
MRB	62.03	74.01	58.80	<b>0.245</b>	72.40	80.36	70.08	<b>0.142</b>	<b>0.103</b>

### Changes in Urban- Rural Differential Index in Literacy, Malaprabha River Basin, Karnataka State, 2001 & 2011

Table No: 5 reveals that, Badami (0.195) and Dharwad (0.171) talukas of basin area have registered very high category of change of urban-rural differentials indices during the study period. Because of lack of educational facilities, careless of girls education in rural areas, diversified economy and high degree of rural mobility.

High category of change of urban-rural differentials indices is observed in four talukas of basin area, namely Khanapur (0.139), Ramdurga (0.139), Saundatti (0.126) and Hunagund

(0.112). The medium change of urban-rural differentials indices is noticed in Kundagol (0.093), Bailhongal (0.078) and Gadag (0.078) talukas of basin area. Ron (0.049), Naragund (0.022) and Navalagund (0.015) talukas falls under the low category of change of urban-rural differentials indices of Malaprabha River Basin.

Table 4. Category wise Urban- Rural Differential Index in Literacy, Malaprabha River Basin, Karnataka State, 2001 & 2011

Category	2001			2011		
	No. of Talukas	Talukas %	Name of the Talukas	No. of Talukas	Talukas %	Name of the Talukas
<b>Very High</b> ( > 0.300)	3	25.00	Badami (0.405) Ramdurga (0.397) Dharwad (0.340)	--	--	--
<b>High</b> (0.225 – 0.300)	4	33.34	Khanapur (0.296) Hunagund (0.276) Bailhongal (0.273) Saundatti (0.265)	1	8.33	Ramadurga (0.258)
<b>Medium</b> (0.150 – 0.225)	1	8.33	Gadag (0.218)	5	41.67	Badami (0.210) Bailhongal (0.195) Dharwad (0.169) Hunagund (0.164) Khanapur (0.157)
<b>Low</b> (0.075 – 0.150)	2	16.66	Ron (0.145) Kundagol (0.131)	3	25.00	Gadag (0.140) Saundatti (0.139) Ron (0.096)
<b>Very Low</b> ( < 0.075)	2	16.66	Navalagund (0.046) Naragund (0.028)	3	25.00	Kundagol (0.037) Navalagund (0.31) Naragund (0.006)
	<b>12</b>	<b>100.00</b>		<b>12</b>	<b>100.00</b>	

Table 5. Category wise Change of Volume in Urban- Rural Differential Index in Literacy, Malaprabha River Basin, Karnataka State, 2001 & 2011

Category	Change of Volume 2001 & 2011		
	No. of Talukas	Talukas %	Name of the Talukas
<b>Very High</b> ( > 0.150)	2	16.67	Badami (0.195) Dharwad (0.171)
<b>High</b> (0.100 – 0.150)	4	33.33	Khanapur (0.139) Ramdurga (0.139) Saundatti (0.126) Hunagund (0.112)
<b>Medium</b> (0.50 – 0.100)	3	25.00	Kundagol (0.093) Bailhongal (0.078) Gadag (0.078)
<b>Low</b> ( < 0.050)	3	25.00	Ron (0.049) Naragund (0.022) Navalagund (0.015)
	<b>12</b>	<b>100.00</b>	

### Relationships between Rural-Urban Literacy Rate :

The regional dimensions of rural and urban literacy rate are shown in Table No: 6, the talukas with reference to percentage may be arranged into three categories, high, medium and low; these categories in terms of value are not found to be same. The table reveals that, in 2011, about seventeen percent talukas of the basin lie under the low grade of rural literacy

rate, of which each only one talukas are associated with medium and with high urban literacy rate, while low rural literacy with low urban literacy category is not found in the study area. Two talukas lie under the medium grade of rural literacy rate, of which the same two talukas associated with medium score of urban literacy rate; whereas, medium grade rural literacy rate with low and high grade urban literacy category is not found in the basin area. The category of high grade rural literacy rate incorporates eight talukas (66.66%), only one belong to low, three to medium, four to high grade of urban literacy rate in 2011.

Table 6. Category wise Relationship between Rural Urban Literacy Rate, Malaprabha River Basin, Karnataka State, 2001 & 2011

Category	Level of Urban Literacy	2001		Level of Urban Literacy	2011		
		No. of Talukas	%		No. of Talukas	%	
Low Grade of Rural Literacy	Low	1	8.33	Low	--	--	
	Medium	2	16.67	Medium	1	8.33	
	High	--	--	High	1	8.33	
		<b>3</b>	<b>25.00</b>			<b>2</b>	<b>16.67</b>
Medium Grade of Rural Literacy	Low	--	--	Low	--	--	
	Medium	1	8.33	Medium	2	16.67	
	High	1	8.33	High	--	--	
		<b>2</b>	<b>16.67</b>			<b>2</b>	<b>16.67</b>
High Grade of Rural Literacy	Low	2	16.66	Low	1	8.33	
	Medium	2	16.66	Medium	3	24.99	
	High	3	25.00	High	4	33.32	
		<b>7</b>	<b>58.33</b>			<b>8</b>	<b>66.66</b>
<b>River Basin Area</b>		<b>12</b>	<b>100</b>			<b>12</b>	<b>100</b>

## Conclusion

The analysis clearly indicates that there is a wide range of variations in rural-urban differential in literacy among the talukas of the river basin. The observation further adds that the urban-rural differential indices in the western and northeastern talukas are relatively high as compared to the central, eastern and southern talukas of the basin. The statistical analysis reveals that low urban-rural differential in literacy is characteristics of areas marked by relatively high degree of commercialization of agriculture, literacy rate, educational facilities, medical facilities, urbanization and dense road network. A sum of six talukas have very high and high category of change of urban-rural differential indices (above the average of basin value i.e. 0.103). This is indeed a situation of great concern. Hence, proper progressive mechanism assumes critical importance par with low category of change of differential indices areas, and the concept of planning with social justice proves successful.

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