



Changing Pattern of Literacy and Predicted Literacy Rate in Kumaun Region

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Abstract: Literacy is a key for socio-economic progress and development of any region. There is a wide gender disparity in the literacy rate in mountains. Effective literacy rates (age 7 and above) in 2011 were 87.4% for men and 69.6% for women in Kumaun region. The average literacy rate of literacy in the Kumaun region is 78.5% which is ebullient to the Uttarakhand average literacy rate of 78.8%. Due to government programmes, Uttarakhand's literacy rate increased very fatedly. The basic purpose of this paper is to assess the fast growing pattern of literacy rates and prediction rate in the Kumaun region of Uttarakhand. Present study is based on secondary sources of census data (2011). The basic unit of study was Block level. Literacy rate depend on the level of awareness of the people, economic status of the family, development of educational infrastructures and government programmes. It has been observed that Kumaun region have very high literacy rates. In 1071 the literacy rate was 30% which raised 78.5% in 2011. The decadal growth rates have been calculated since 1971 and maximum growth rate (14%) recorded during 1991-2001. During the last decade literacy growth rate was 6.9%. The developmental block wise and physiographic zone wise literacy rates have been analysed that there is an uneven distribution of literacy rates in the region. The literacy rates higher in blocks of Greater and Lesser Himalayan physiographic zones than the Tarai-Bhabar and plain zones due to various social, migration and economic factors. It is predicted that if the growth rate of literacy will increase at the rate of 6.91%/decade than the region will be under 100% literacy before 2051 in the Kumaun region of Uttarakhand.

Keywords: Literacy, Growth, Kumaun, Demography, Prediction

Introduction

Literacy is the main component of Socio-economic changes in any region. Literacy has played a vital role in population growth and demographical changes. For geographers, demographers, planners and others, the phenomena of literacy growth has special significance because its value as an index of economic development and social awakening of a region. The concept of change or growth of population is determined either in terms of the change in literacy number or percentage during a specific period of time (Chandna, 1994). In order to know the demographical changes and migration pattern, it is essential to know literacy rates during specific duration of time. So a database of literacy is essential to study the population changes and economic growth of any region. Here, literacy studies include birth rates, general fertility rates, age group, death rates, etc. Moreover migration rates, urbanization and occupational structure are taken into consideration.

According to Census of India, a person aged seven and above, who can both read and write understanding in any language, is treated as literate. Modern meaning of literacy is to use language, numbers, images, computers, and other basic means to understand and gain useful knowledge. Children in the age group of 0-6 are treated as illiterate. During last four decades (1971-2011), this paper deals

with the growth and changes of literacy in Kumaun region. The analysis of literacy pertains to Community Development Units.

Area of study

Kumaun Region extends between 28 ° 44' to 30 ° 49' N latitudes and 78 ° 4' to 81 ° 1' E longitude is situated at the disjunction of Nepal, Tibet and India in the state of Uttarakhand (Fig. 1). The Kali River defines its border with Nepal and Kali – Satby water divide with Tibet. The high transverse mountain range separate it from Chamoli and Pauri district of Garhwal region and the southern limit of the Tarai belt demarcates its southern boundary (Jalal, 1988). It has a distinct geographical entity of great strategic significance. It covers 21158 km² areas within the elevation range 204m and 7436 m above msl. The Kumaun region is comprises six districts- Almora, Pithoragarh, Bageshwar, Champawat, Nainital and Udham Singh Nagar which are divided into 38 Tahsils, 41 blocks and 7457 villages (Fig. 2). According to 2011 census it has the total population of 4228998 persons with average density 200/km² person.

Objective of study

The basic aim of the present study is to analysis the changing pattern (1971-2011) of literacy and predicted Literacy rate in Kumaun Region of Uttarakhand

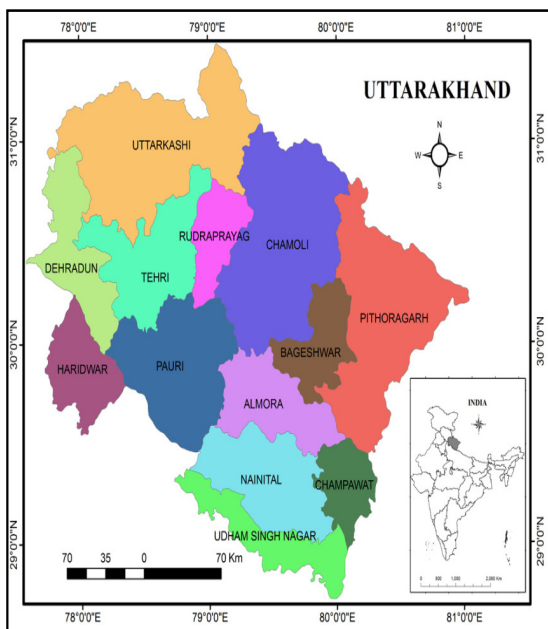


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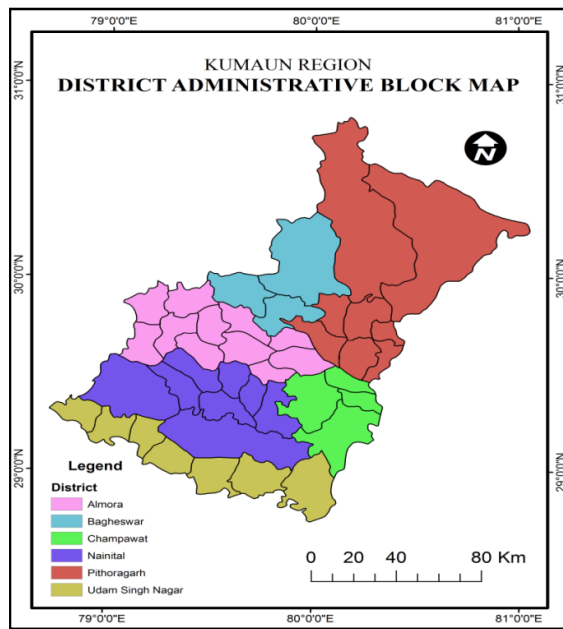


Fig. 2 Source: Compiled by Author

Methodology

Present study is based on secondary sources year (Census data 1971-2011). The blocks have been taken as a basic unit of the study. Total 41 blocks in Kumaun region analysed with coding system on GIS environment. Results and data have been represented with maps, diagrams and tables using computer cartographical techniques.

Literacy

Literacy particularly in the mountains depends upon the physiographic setup. The heterogeneity of environment in an area has influence the distribution of demographic parameters. Topography, altitude, slope, climate are the major physical factors which are responsible for the uneven distribution of literacy

in the region. Out of the physical factors some of socio-economic factors i.e. culture, society, means of communication etc. Are two also influence the rate of literacy in the region.

According to Census 2011 the overall literacy rate of Kumaun region is 78.52%. It confirms to almost same as literacy rate (78.8%) of Uttarakhand but higher than India (72.98). The highest literacy rate (83.9%) was found in the districts of Nainital, followed by Pithoragarh district (82.2%). The minimum literacy rates were found in Udham Singh Nagar (73.1%) and Champawat districts (79.83%). The literacy rates of male and female in Kumaun region are 87.4% and 69.6% respectively. The literacy rate of female was 9.21 points higher than the literacy rates of India.

Table .1 Physiographic Zones and Distribution of literacy (2011)

Physio graphic Zone	District	Literacy			Remark
		Total	Male	Female	
Greater Himalaya	Pithoragarh	81.82	92.89	71.59	High
Lesser Himalaya	Pithoragarh, Bageshwar, Almora, Champawat, Nainital	83.06	88.54	77.19	Very High
Siwalik, Doon & Bhabar	Nainital	77.49	90.22	64.98	Moderate
Tarai	Udham Singh Nagar	73.10	81.09	64.45	Low

Source- Census of India 2011

According to Census 2011, physiographic region wise literacy distribution is shown in Table 1. It reveals that the highest and high literacy rates (83.1%) are observed in the Lesser Himalayan region followed by Greater Himalayan region (81.8%). Beside this the moderate and low literacy rates are found in Doon-Bhabar and Tarai regions i.e.77.5% and 73.1% respectively.

As far as the male and female literacy rates are concerned maximum male literates (92.9%) are found in the Greater Himalayan region followed by Doon and Bhabar (90.2%). Over all male literacy rates are more than 81% in all the physiographic regions (Table 1). The maximum female literacy rates are calculated in Lesser Himalaya and Greater Himalayan region i.e. 77.2% and 71.6% respectively. Beside this the minimum female literacy rates are in Tarai and doon and Bhabar region i.e. 64.5% and 65% respectively.

The analysis shows that maximum total, male and female literacy is found in the mountain regions and lowest in the plain region while it should become maximum in the plain and minimum in the mountain region. The basic reasons for this anomaly and uneven distribution of literacy are migration of male from hill to plain districts, immigration of illiterate agricultural labour from UP and Bihar to Tarai region for the search of employment, maximum SC and Muslim population and illiterate industrial labour in the Tarai and Bhabar region. Although the Tarai region is well developed by the educational facilities even than the literacy rate is very low. The illiterate labours are working on the factories, mining in rivers and agricultural fields for which the literacy rate become low in the Tarai region of Kumaun Himalaya.

Beside this total, male and female literacy rate is higher in the Higher and Lesser Himalaya because the educational institutes are opened in each village of the region and awareness program run by the Govt. on the hills. Therefore, the literacy percentage is continuously increased on the hill districts. Now peoples are very much aware to educate their female child in the remote areas on the hills. The school and colleges are also opened very nearer to their native places so that the female children also joined the school as a result female literacy rate increased very rapidly (Fig. 3).

One of the most important reasons also influences the higher literacy rates in the region is role of tertiary activities on the mountains. Numbers of schools, colleges, hospitals, offices, business centres, factories etc tertiary activities are opened in all the districts. Thousand of local peoples are engaged in these institutions, so that socio economic status of the natives is become high. Its direct impact can be seen on literacy in the hill district of Kumaun region.

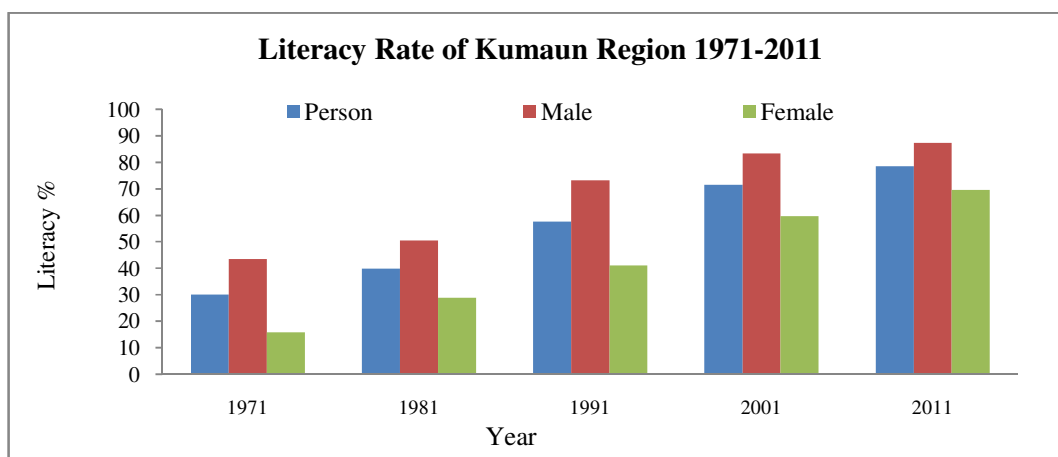


Fig. 3 Source: Compiled by Author

Table 2 comparative status of literacy of the Kumaun region

Comparative Study of Literacy Rate (1971-2011)					
Unit	1971	1981	1991	2001	2011
India	34.45	43.57	52.21	64.84	72.98
Uttarakhand	33.26	46.06	57.75	71.62	78.82
Kumaun Region	30.08	39.87	57.59	71.61	78.52

Source- Census of India 1971-2011

Growth of Literacy

For the sake of growth in literacy percentage, since 1971 census data has been taken into consideration and compare with national and state literacy rate

Table 2 presents the comparative status of literacy of the Kumaun region during last four decades. In 1971 census, the literacy of India was 34.5% and whole Uttarakhand was only 33.3% while in the same decade the literacy percentage of Kumaun region was 30.1% which 3.18 points less than whole Uttarakhand and 4.37 points less than India average literacy.

Similarly, in 1981 census the literacy of the Kumaun region 9.81% increased but still it was 3.70 points less than Uttarakhand and 6.19 points less than India. After 1971 the schools, colleges, technical institutes and universities opened in the hills of U P so that the literacy rates increased at constant rates. Therefore, in 1991 the literacy rate increased 18.38 points in comparison to previous decade. As the result of this change growth rate of literacy of Kumaun region became equal of Uttarakhand and higher than India (Table 2). In 2001 census the level of literacy was equal in Kumaun and Uttarakhand but 7.77 points higher than India. After the formation of separate state in 1998, the numbers of primary schools, junior high schools, middle and inter colleges, Navodaya Vidyalaya, Sainik schools, ITI, polytechnics and other educational institutes opened very fastely in the remote hilly terrain of Uttarakhand. Therefore, the literacy rate increased 6.81 points higher than 2001 and equivalent to Uttarakhand but 5.54 points higher than India (Table 2). During 40 years (1971 to 2011) the literacy rate increased from 30 to 78 in the Kumaun region weather average annual change of 1.2% per year. Maximum growth rate 14% was recorded in 1991-2001.

Changes in Male-Female Literacy

Higher growth has been noticed in the male literacy in the study area. In 1971 the male literacy was 43.5% which rose to 50.5% in 1981. Further in 1991, 2001 and 2011 it was 73.2%, 83.4% and 88.4%

respectively. During this period, the male literacy rate has increased 101% during over the span of 40 years. Highest change in male literacy rate was recorded in 1991 i.e. 22.7%. Over all male literacy increased at the rate of 1.1% per year in the Kumaun region.

Table 4 shows that in the female literacy rates was reached 15.8%, 28.8%, 41.1%, 59.7% and 69.6% respectively in the five consecutive censuses. Since 1971 to 2011 the female literacy increased by 340%. It is a very good indicator of development and awareness. The female literacy rate was 2.8 points lower than the rate of Uttarakhand in 1971 but it was 3.8 point higher than the rate of 1981. After word the female literacy rates of Kumaun region were equivalent to the rates of Uttarakhand. Before 1981 the limited school and colleges were available in the region and existing schools and colleges were very far from the native places so that female child unable to attend the school. Earlier few female children were literate or educated around the district head quarters. After 1991, the drastic changes were noted due to the awareness programme were started by the govt and social groups. Primary schools were opened in every revenue villages, as a result of which female literacy increased day by day in the mountainous region. Since 1971 to 2011 the female literacy rate increased at the rate of 1.32% per year.

Spatial Pattern of Literacy

According to 2011 census, distributional pattern of literacy has been assessed in different 41 developmental blocks in the Kumaun region (Fig. 4). The range of literacy from 67% to 90% is classified into five classes with interval of 5. Table 3 shows that maximum 30 blocks (73.2%) were under 75-85% literacy class which covers 61.4% literate population of Kumaun region. Only 12.2% blocks were under 85- 90% literacy class. Similarly, 6 blocks (14.6%) were under lowest categories but covers 25.8% literate population. If we see the distributional pattern of male literacy than it is found that 85.4% blocks were under highest literacy class (>85%). Rest of the blocks are under the category of 75-85% literacy. No one block falls under the lower category (< 75%). Beside this maximum female literacy percent was found in the lowest categories of <70 and 70-80% which covers 56.1% and 26.8% female literacy population respectively in the Kumaun region. Only 3 blocks were under >80% literacy class.

Fig. 5 shows that highest literacy percent is found in the blocks around Almora and Pithoragarh district head quarters. Among them Tarikhet, Ramgarh, Hawalbag and Bhimtal are prominent. These blocks are well developed and connected with centres since beginning. Therefore, male and female literacy was higher in these blocks. Beside this low literacy is found in those blocks which are situated outer margin of the centres such as Salt, Dhauladevi, Barakot, Syalde etc (Fig. 5). Very low literacy was calculated in all Tarai Bhabar blocks of plain. Among them Bajpur, Jaspur, Rudrapur, Sitarganj and Gadarpur were prominent. This indicates that literacy growth rate were higher in the hills developmental blocks in comparison to the plain blocks.

In 1971 there was a reverse position in the distributional pattern of literacy. The literacy percentage was higher in the plain blocks rather than hill and sub hill blocks. The prominent plain blocks are Bajpur, Gadarpur, Rudrapur, Sitarganj, Kotabag, Bhimtal, Dhari, Ramnagar etc (Fig. 4). The lowest density is observed in the hill blocks of Kapkot, Bhikiyasain, Salt, Bhaisiachana, Lohaghat etc. Comparative, distribution pattern of literacy in 1971 and 2011 are shown in Fig. 4 and 5. The block wise range of literacy was 17 to 45% in 1971 and 67 to 90% in 2011. It also shows that the literacy rate is higher in the hills block and lowers in the Doon, Bhabar, Tarai and plains. The reason is already explained above. Female literacy rates increased very rapidly on the hills. For the detail analysis the block level literacy rates are classified into five categories.

Table 3 reveals that 73.16% blocks comes under the literacy class of 75-85% which covers 61.44% literate population. More than 85% literacy is found in the 12.20 % blocks in the *study area*. Only 14.64% blocks are under the literacy rate of less than 75% which covers 25.76 % literate population. Minimum literacy rate is observed in the Bajpur, Gadarpur and Sitarganj i.e. 66.71%, 71.26% and 71.95% respectively (2011). All block are situated in the Udham Singh Nagar of Tarai region. Its basic reasons for this are occupational structure, immigration of male/female workers from UP and Bihar and

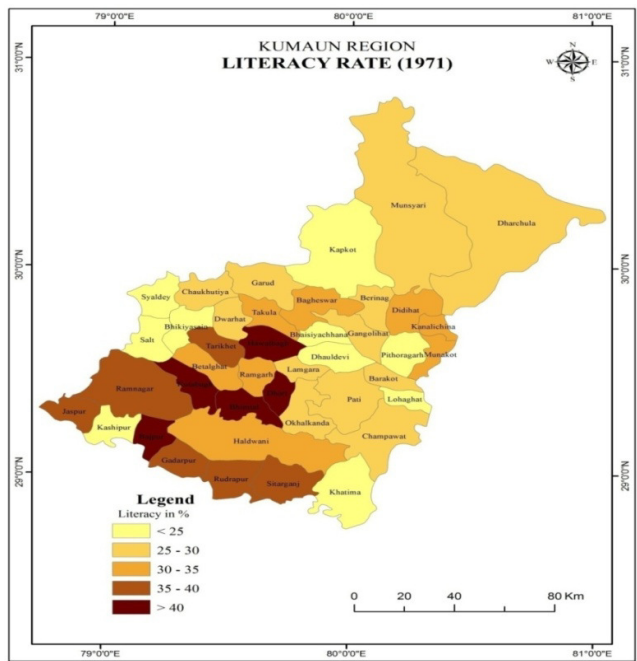


Fig. 4 Source: Compiled by Author

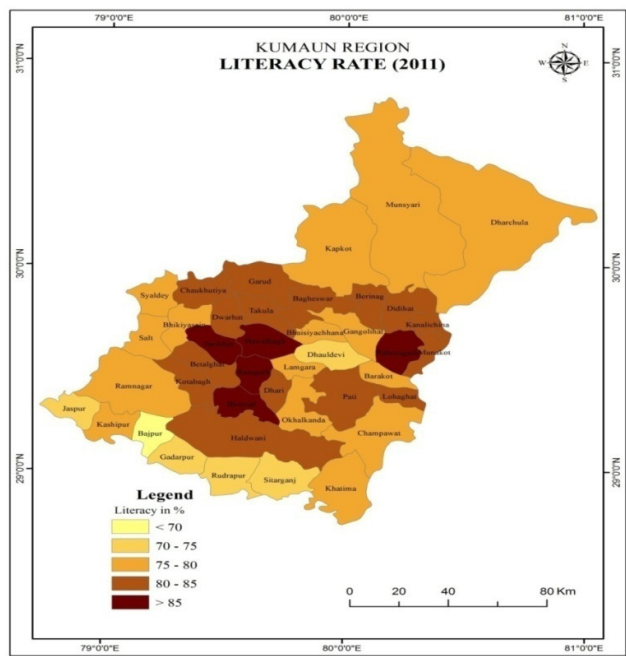


Figure 5 Source: Compiled by Author

migration of male from hills. Most of the male workers are engaged in agriculture, mining on the rivers and industries. The female literacy is also very low in the SC and Muslim communities in this area. Beside this, highest literacy rate is found in the blocks of Bhimtal (90.44%) followed by Pithoragarh (88.77%). The literacy percentage is much higher in the centres of district head quarters because of the tertiary activities and all kinds of educational facilities are available around the district headquarters. It is noted that 48.79% blocks of the Kumaun region have more literacy percent than total Kumaun region's (78.52%) and Uttarakhand state's literacy (78.82%). Over all the block level literacy rates are higher than rate of India which shows a symbol of good development in the region.

Predicted Literacy Rate of Kumaun Region

Literacy prediction gives a picture of expected literacy that may happen. Literacy projection is estimates of the literate population for the near future. They are typically based on an estimated literate population consistent with the most recent decennial census and are produced using the *Clarke method* (1972). Projections are based on assumptions about future literacy trends. The base literate population is advanced each year by using projected survival rates. Each year, new literates are added to the population by applying the projected literacy rates. For a more detailed explanation of following methodology used for present study.

$$P = L_p (1 + r/100)^n$$

Where

- P = Predicted
- L_p = Literate population
- r = Growth rate
- n = Time

$$\begin{aligned} \text{So that } P &= 78.52(1 + 6.91/100)^1 \text{ decade} \\ &= 78.52(1.0691)^1 \\ &= 78.52(1.0691) \\ &= 83.95\% \text{ (predicted literacy rate in 2021).} \end{aligned}$$

Table 4 Predicted Literacy Rate

Literacy Rate of Kumaun Region				Re ma rk
Year	Person	Male	Female	
1971	30.08	43.47	15.85	Real
1981	39.87	50.46	28.85	
1991	57.59	73.22	41.12	
2001	71.61	83.44	59.69	
2011	78.52	87.36	69.61	
2021	83.95	90.79	76.51	Predicted
2031	89.75	94.35	84.11	
2041	95.95	98.04	92.45	
2051	102.58 (100)	101.89 (100)	101.62 (100)	

Source- Census of India 1971-2011

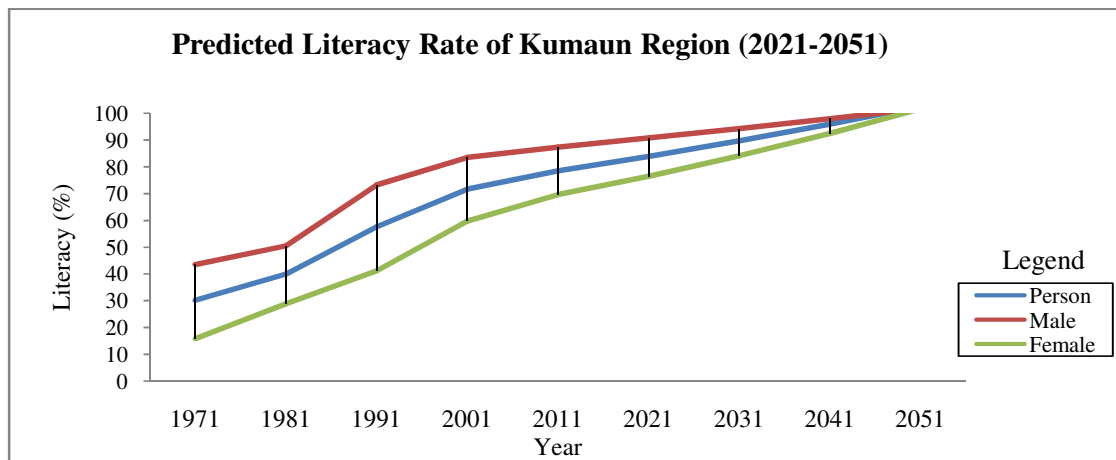


Fig. 6 Source: Compiled by Author

Table 4 reveals that average growth rate of literacy was 12.11/decade during 1971 to 2011 in the Kumaun region. Average growth rate of male and female has been 10.97/ decade and 15.17/decade respectively.

For the sake of prediction, 2001-2011 growth rates i.e. 6.91 (total), 3.92 (male) and 9.92 (female) have been taken base for the calculation of future estimates up to 2051. It shows that if the growth rate of literacy will increase on basis of 6.91%/decade, then the region will be under 100% literacy up to 2051. Fig. 6 clearly indicates that all growth curves are joining each other in one point. It is clear that after 2041 the whole population of the region (male and female) will be literate.

Conclusions

International Literacy Day is celebrated each year on 8 September with the aim to highlight the importance of literacy to individuals, communities and societies. The right to education is a fundamental right and UNESCO aims at education for all by 2015. The National Literacy Mission launched in 1988, aimed at attaining a literacy rate of 41 percent by 2035. The Continuing Education Scheme provides a learning continuum to the efforts of the total literacy and post literacy programmes in India. The Census 2011 indicated that Kumaun region has made significant progress in the field of literacy during 1971 to 2011. The literacy rate in 2011 has been recorded at 78.52% as against 71.61% in 2001. The 17.72% points increase in the literacy rate during the period 1981-91 which is the highest increase in any decade in the study area. The eradication of illiteracy from an uneven mountainous terrain like Uttarakhand beset by several physical, social and economic hurdles is not an easy task. The National Literacy Mission and state govt. had accepted the literacy campaigns as the dominant strategy for eradication of illiteracy. Therefore, the significant growth rates are observed in not only total but also in female literacy in the region. The Kumaun region female literacy rate has grown to 69.61% (2011) from 15.85% at the end of 1971. The female literacy rates increased 53.76% during 40 years span of time which shows 1.32% growth per year. It is remarkable that overall and female literacy rates are rapidly increased in the hill blocks and districts in comparison to plain blocks and districts i.e. Udham Sing Nagar. Results shows that 85.38 % block of Kumaun region have more than 75% literacy which shows fast growing symbols of literacy. The maximum literacy rate (83.06%) is found in the Lesser Himalaya followed by Greater Himalaya 81.82%. Beside this the minimum literacy rate was found in the Tarai & Bhabar zone i.e.73.10% and 77.49% respectively. On the basis of 2011 literacy growth rate (6.91%/decade), it is predicted that before 2051 the literacy will be 100% in the Kumaun region of the Uttarakhand.

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