

SOCIAL DEVELOPMENT IN TRIBAL AREAS OF HIMACHAL PRADESH A REGIONAL LEVEL ANALYSIS

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ABSTRACT

Social development in tribal area of Himachal Pradesh brings out an assessment of the program made during 1980-81 to 2010-11. In this paper, main component of development, viz. the social development has been analysed at regional level in state of Himachal Pradesh. It is a factorial analysis based on 18 indicators and helps to identify the lagging regions based on this evaluation, plan formulation could be made for the different physiographic region of development, based on their resource potentials, levels of development, and the objectives of socio economic equity and regional balance. Strategies have been suggested under decentralised multilevel planning process with stress on spatial organization and corporate management. Social development strategies focus attention on regional potentialities and maximization of production. These strategies would pave the way for a more balanced regional development of Himachal Pradesh, if and when properly implemented.

KEYWORDS : Social development, factorial analysis, regional development.

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INTRODUCTION

India has the largest tribal population in the world, numbering about 68.34 millions in 1991 census, in 2001 it was 84.3 million and in 2011 census it was 104.3 millions. There are about 427 tribes, sub-divided into different groups¹. India is a very vast country with the largest tribal population in the world. India is a vast country with a rich variety of culture and in this scene of delivery our tribal brothers occupy a very important place. In any economic development programme due to combination of factors which may be historical, territorial and sometime even natural, some areas have been found to be lagging behind unless a conscious effort on the part of the planners have not been taken to meet out their needs on priority basis. The successive five year plans have drawn attention to this problem of intra-regional and inter-regional imbalances and emphasized that the realization of the growth potentials in the tribal areas should be taken up on priority basis in order to give practical shape to the ideas of egalitarianism and social justice. It has been stressed that the strategy of socio-economic development should be structured in such a way that the relatively disadvantaged areas and sections of populations are gradually brought in the mainstream of the development process. The constitution of India in its very preamble pledges to secure to all citizens justice: Social, economic and political. Article 46 of the constitution prescribes that 'the state promotes with special care of the educational and social interests of weaker-sections and in particular or the scheduled castes and scheduled tribes and shall protect them from social injustice and all forms of exploitation. The Kinnaur, Lahul-Spiti districts in their entirety and Pangi and Bharmour (now tehsil Bharmour and sub-tehsil holi), Sub-division of Chamba district constitute the tribal areas in the state, fulfilling the minimum criterion of 50 percent scheduled tribe population concentration in a community development block. These are situated in the north east of the Pradesh forming a contiguous belt in the far hinter land behind high mountain passes and are amongst the remotest and the most inaccessible areas in the state with average altitude being 3281 meter above the mean sea level. The most distinguishing feature of the tribal areas in the state is that they are very vast in area but extremely small in population with the result that per unit cost of infrastructure activity is very exorbitant. These areas have been declared as scheduled area under the fifth schedule of constitution. The five integrated Tribal Development Project (ITDP) are Kinnaur, Lahul and Spiti, Pangi and Bharmour except Kinnaur which is spread over 3 community development blocks, rest of the integrated tribal development projects (ITDPs) comprise only one community

development block each. According to 2001 census, the tribal areas constitute 42.49 percent of the state 's geographical area and represent 2.74 percent of the total population of the state of the total population in the tribal areas 68 percent are scheduled tribes, 9.61 percent are scheduled castes and the rest are others.

Educational and medical institutions are the main sectors of social development. Education is the most crucial factor not only to equip the new generation with skills so essential for earning livelihood but also to create among them an awareness to social and environment realities, inculcates in them scientific temper independence of mind and spirit which are of paramount importance for them to become responsible citizen. Article 45 further guarantee free and compulsory education and promotion of educational interest of scheduled tribes is also one of the tasks assigned to the State under Article 46. Education is the main role instrument for developing human ability. Education brings number of changes in attitude to works, family size, traditions etc. It also affects the process of capital formulation through its effect on consumption preference and expenditure on social infrastructure, which helps an economy in achieving rapid economic development and technological progress. Government is committed to provide education for all. So the government has introduced the various programmes such as to encourage the enrolment, reduced the dropout rate and enhance the retention rate of the children also various scholarships and other incentives.

The health and family welfare occupy an important role in the welfare state, rather it is primary duty of the government to provide adequate medical and health services. To provide better health services to the people, the government is strengthening the health sector. Facility of health services both in quantity and quality terms is reflected one of the objectives under social sector development plans in both states.

Water verily is life. During the Sixth Plan, a massive programme for providing drinking water facility to rural areas was undertaken under the MNP and 89 percent of the villages in Tribal Area (as per 1991 census) have been provided with safe drinking water facilities. For providing sewerage in Reckongpeo, Kaza, Tabo, Keylong Udipur and Bharmour town sufficient fund provision has been made. In order to provide civil amenities at the ITDP headquarters and the

same time retaining their rural character, Reckongpeo, Kaza, Tabo, Keylong, Killar, Udipur and Bharmour have been declared as Special Areas under section 66 of the Himachal Pradesh Town and Country Planning Act, 1977. The Special Area Development Authorities have been constituted for administering the same with numerous functions like planning, development, civic administration, etc. funds proposed under the scheme are to be spent on civic amenities such as metalling of roads, improvement of sewerage, street lights, parks and beautification of pounds and other developmental activities.

OBJECTIVES

The main objectives of the study are to analyse the regional wise pattern of social development in tribal areas of Himachal Pradesh at four points of time, i.e. 1980-81 to 2010-11 and thus focusing on inter-regional disparities in level of development. The specific objectives are:

1. To rank the region according to their level of social development on the basis of a composite index of development
2. To identify the various dimensions of social development in tribal area
3. To identify the backward regions, this could be helpful in formulating regional policies for achieving the objectives of balanced growth.

Methodology

The study seeks to determine region-wise level of social development. For this purpose, a set of indicators have been identified comprising 15 indicators to examine economic development. The data is compiled mainly from published and unpublished secondary sources. To analyse the pattern of development in various sectors, a composite index was prepared with the help of Principal Component Analysis (PCA)/Factor analysis (FA)

$$P_1 = a_{11}Z_1 + a_{12}Z_2 + \dots + a_{1n}Z_n$$

$$P_2 = a_{21}Z_1 + a_{22}Z_2 + \dots + a_{2n}Z_n$$

.....

$$P_n = a_{n1}Z_1 + a_{n2}Z_2 + \dots + a_{nn}Z_n$$

Where a_{ij} are factor loadings (weights) of Z_i 's such that:

- i) P_i 's are uncorrelated

ii) P_i absorbs and accounts for the maximum possible proportion of the total variance in Z_i 's.

The data of four bench mark years were pooled together., i.e. the pooled correlation matrix was taken for the derivation of factor matrix. Here, the implicit assumption is that the relative importance of the variables did not change between 1980-81 to 2010-11. Theoretically this factor-matrix is obtained by maximizing the variance in P_i 's, given the condition that there is total unit variance in Z_j 's, by the method of characteristics roots and characteristics vectors.

Thus, the first principal component, which gives maximum correlation with variables and explains maximum of the total variance is considered as composite index of development for a vector.

In the present study, the data of four benchmark years, i.e. the correlation matrices for the years 1980-81, 1990-91 and 2000-01 and 2010-11 are analyzed separately for the derivation of factor matrix.

The sum of the squares of the factor loadings of the first principal component is the largest Eigen value, which measures the proportion of variance explained by the first principal component. In the present study Eigen value greater than one criterion was used and accordingly number of Principal Components with greater than one Eigen value have been considered. On the other hand, the sum of squares of the factor-loadings of all the principal components retained corresponding to the variables is communality h^2 , which expresses the percentage of variance explained by the factor model. In order to evaluate the dimension of social development at regional level, method of Kaiser,s Varimax Rotation was used. Further in order to examine the inter- regional disparities in the social development standard deviation and Coefficient of variation was used.

REGION-WISE COMPOSITE INDEX OF ECONOMIC DEVELOPMENT

The composite indices of development have been calculated with the help of first principal component analysis will help in analysing inter regional disparities in the levels of social development.

Region-wise level of social development has been analysed with the help of composite indices of social development. These indices have been calculated by taking first principal component from the principal component matrix derived from the inter-correlation matrix of 18 variables. The list of these variables is given under:

SD-1	Number of medical institute per 000 sq km
SD-2	Number of medical institute per lakh of population
SD-3	Number of beds per 000sq km
SD-4	Number of beds per lakh of population
SD-5	Number of villages provided piped water supply per 000sq km
SD-6	Number of villages provided piped water supply per lakh of population
SD-7	Number of primary school per 000 sq km
SD-8	Number of primary school per lakh of population
SD-9	Number of middle school per 000 sq km
SD-10	Number of middle school per lakh of population
SD-11	Number of senior secondary school per 000 sq km
SD-12	Number of senior secondary school per lakh of population
SD-13	Number of educational institutional per lakh of population
SD-14	Number of teacher in educational institutions per 000sq km
SD-15	Number of teacher in educational institutions per lakh of population
SD-16	Percentage of literate
SD-17	Percentage of female literate to total literate
SD-18	Density of population

On the basis of Principal component matrix for the year 1980-81, three components have been retained which taken together explain 91.77 percent of the total variance. It may be seen that out of 18 indicators, 12 indicators are significantly correlated with first principal component $P_1(a_1)$'s $>$ or 0.576 is significant for 10 degrees of freedom at 5 percent level of significance). It explains 53.76percentage of the total variance. It is evident from the last column of table that all the communalities (h^2) are very high ranging in 1.000. This indicated that each variable taken for analysis was significantly correlated with all other variables. The composite index of social development for the year 1980-81 has been computed by using the following equation:-

$$SD_1 = (.951)Z_1 + (-.927)Z_2 + (.717)Z_3 + (-.644)Z_4 + (.764)Z_5 + (-.515)Z_6 + (.853)Z_7 + (-.160)Z_8 + (.860)Z_9 + (-.847)Z_{10} + (.860)Z_{11} + (-.567)Z_{12} + (-.351)Z_{13} + (.914)Z_{14} + (-.876)Z_{15} + (-.324)Z_{16} + (-.243)Z_{17} + .84Z_{18} \dots \dots \dots (1)$$

Where SD is composite index of social development and $Z_1, Z_2, Z_3, \dots, Z_{18}$ are the standardized values of variables and figures in parentheses are factor loading or weights.

On the basis of Principal Component Matrix for the year 1990-91, three components have been retained which taken together explain 94.43 percent of the total variance. It may be seen that out of 18 indicators, 14 indicators are significantly correlated with first principal component $P_1(a_1's > 0.576$ is significant for 10 degrees of freedom at 5 percent level of significance). It explains 65.92 percentage of the total variance. All the communalities (h^2) are very high ranging in +1.000. This indicated that each variable taken for analysis was significantly correlated with all other variables.

The composite index of social development for the year 1990-91 has been computed by using the following equation:-

$$SD_2 = (.900)Z_1 + (-.495)Z_2 + (.898)Z_3 + (-.460)Z_4 + (.950)Z_5 + (-.992)Z_6 + (.949)Z_7 + (-.856)Z_8 + (.960)Z_9 + (-.909)Z_{10} + (.911)Z_{11} + (-.712)Z_{12} + (-.381)Z_{13} + (.962)Z_{14} + (-.889)Z_{15} + (-.535)Z_{16} + (.263)Z_{17} + (.985)Z_{18}$$

Similarly for the year 2000-01, three components have been retained in the principal component matrix which taken together explain 95.23 percent of the total variance. It may be seen that out of 18 indicators, 17 indicators are significantly correlated with first principal component $P_1(a_1's > 0.576$ is significant for 10 degrees of freedom at 5 percent level of significance). It explains 73.83 percentage of the total variance.

It is evident from the last column of table that all the communalities (h^2) are very high ranging in .576+1.000. This indicated that each variable taken for analysis was significantly correlated with all other variables. The composite index of social development for the year 2000-01 has been computed by using the following equation:-

$$SD_3 = (-.986)Z_1 + (.970)Z_2 + (-.845)Z_3 + (.680)Z_4 + (-.894)Z_5 + (.967)Z_6 + (-.905)Z_7 + (.916)Z_8 + (-.864)Z_9 + (.724)Z_{10} + (-.957)Z_{11} + (.978)Z_{12} + (.938)Z_{13} + (-.874)Z_{14} + (.817)Z_{15} + (.638)Z_{16} + (-.110)Z_{17} + (-.966)Z_{18}$$

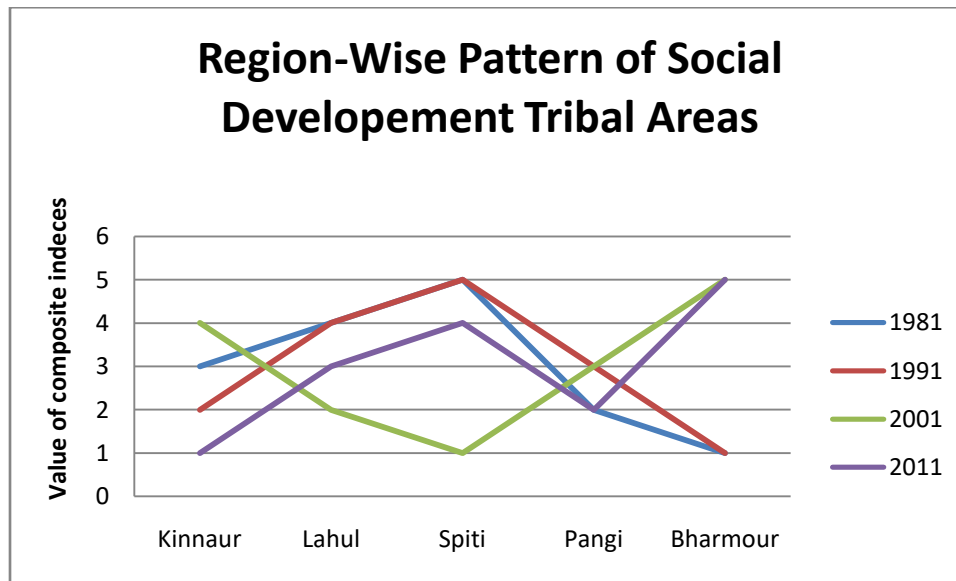
On the basis of Principal component matrix for the year 2010-11, three components have been retained which taken together explain 92.165 percent of the total variance. It may be seen that out of 18 indicators, 14 indicators are significantly correlated with first principal component $P_1(a_1's > 0.576$ is significant for 10 degrees of freedom at 5 percent level of significance). It explains 61.16 percentage of the total variance. It is evident from the last column of table that all the communalities (h^2) are very high ranging in +1.000. This indicated that each variable taken for analysis was significantly correlated with all other variables. The composite index of social development for the year 2010-11 has been computed by using the following equation:-

$$SD_4 = (.928)Z_1 + (-.485)Z_2 + (.929)Z_3 + (-.685)Z_4 + (.718)Z_5 + (-.122)Z_6 + (.937)Z_7 + (-.786)Z_8 + (.885)Z_9 + (-.798)Z_{10} + (.838)Z_{11} + (-.798)Z_{12} + (-.887)Z_{13} + (.852)Z_{14} + (-.925)Z_{15} + (-.534)Z_{16} + (-.456)Z_{17} + (.968)Z_{18}$$

Table 1.1

Region-wise Indices of Social Development in Tribal Areas of Himachal Pradesh

S.No	Regions	1980-81		1990-91		2000-01		2010-11	
		Index	Rank	Index	Rank	Index	Rank	Index	Rank
1	Kinnaur	2.75 (14.07)	3	4.60 (19.75)	2	-6.54 (8.35)	4	2.51 (16.82)	1
2	Lahul	-7.86 (3.46)	4	-7.87 (7.28)	4	10.32 (25.21)	2	-9.34 (4.97)	3
3	Spiti	-11.32 (0.00)	5	-15.15 (0.00)	5	17.24 (32.13)	1	-13.1 (1.21)	4
4	Pangi	3.65 (14.97)	2	2.86 (18.01)	3	-6.13 (8.76)	3	-8.92 (5.39)	2
5	Bharmour	12.78 (26.10)	1	15.55 (30.70)	1	-14.89 (0.00)	5	-14.31 (0.00)	5
Mean		11.72		15.14		14.89		5.67	
S.D.		10.34		11.85		13.28		6.65	
C.V.		88.30		78.29		89.20		117.13	

Figure 1.1

(based on table 1.1)

The region-wise indices are shown in table 1.1. All the districts have been ranked according to their level of social development during the four selected time periods i.e. 1980-81, 1990-91, 2000-01 and 2010-11. It is observed from the table that the level of social development in tribal regions of Himachal Pradesh during 1980-81, Bharmour was at the top followed by Pangi, Kinnaur, Lahul and Spiti. In 1990-91 the comparative levels of social development as reflected in the ranking of the regions does not show any significant change except Pangi region which was ranked on second place shifted to third place during this period. Similarly, in 2000-01 significant change can be observed in the levels of social development which is evident from the ranking patterns of the regions, whereas during 2010-11 the ranking patterns has also changed. During this period Kinnaur was at the top followed by Pangi, Lahul, Spiti and Bharmour. The value of Coefficient of variation decreased from 88.30 in 1980-81 to 78.29 in 1990-91 which further increased to 89.20 in 2000-01 to 117.13 in 2010-11. This indicated that the disparities in the level of social development have increased during the period 1980-81 to 2010-11.

DIMENSION OF SOCIAL DEVELOPMENT IN 1980-81

$$SD_1 = (.901)Z_1 + (-.796)Z_2 + (.669)Z_3 + (.790)Z_5 + (-.910)Z_7 + (.930)Z_9 + (-.650)Z_{10} + (-.830)Z_{12} + (.970)Z_{14} + (.919)Z_{18}$$

$$SD_2 = (.590)Z_2 + (-.690)Z_{11} + (.990)Z_{17} + (.987)Z_{18}$$

From the above analysis of 1980-81, it was found that the Bharmour was at the top position followed by Lahul, Pangi, Kinnaur and Spiti whereas in respect of the second dimension Lahul was at the top position followed by Pangi, Spiti, Kinnaur and Bharmour.

DIMENSION OF SOCIAL DEVELOPMENT IN 1990-91

$$SD_1 = (.707)Z_1 + (-.816)Z_2 + (.891)Z_3 + (.856)Z_5 + (-.710)Z_6 + (.905)Z_7 + (.651)Z_9 + (-.709)Z_{10} + (.963)Z_{11} + (.881)Z_{14} + (.827)Z_{18}$$

$$SD_2 = (-.664)Z_1 + (.681)Z_4 + (.682)Z_6 + (.924)Z_8 + (-.619)Z_9 + (.625)Z_{10} + (.969)Z_{12} + (.890)Z_{15}$$

DIMENSION OF SOCIAL DEVELOPMENT IN 2000-01

$$SD_1 = (-.611)Z_1 + (.831)Z_2 + (-.673)Z_3 + (.724)Z_4 + (.854)Z_6 + (.937)Z_8 + (.613)Z_{10} + (-.586)Z_{11} + (.795)Z_{12} + (.896)Z_{13} + (.965)Z_{15} + (-.582)Z_{18}$$

$$SD_2 = (.789)Z_1 + (.823)Z_5 + (.890)Z_7 + (.805)Z_9 + (.801)Z_{11} + (.937)Z_{14} + (-.899)Z_{16} + (.744)Z_{18}$$

In 2000-01, it was found that Spiti was as at the top position followed by Lahul, Pangi, Kinnaur and Bharmour. Whereas in respect of the second dimension Bharmour was at the top position followed by Pangi, Kinnaur, Lahul and Bharmour.

DIMENSION OF SOCIAL DEVELOPMENT IN 2010-11

$$SD_1 = (.673)Z_1 + (.874)Z_3 + (.651)Z_7 + (-.694)Z_8 + (-.978)Z_{10} + (-.978)Z_{12} + (-.856)Z_{13} + (.763)Z_{14} + (-.731)Z_{15} + (.768)Z_{18}$$

$$SD_2 = (.666)Z_1 + (.818)Z_9 + (.865)Z_{11} + (-.932)Z_{16} + (-.954)Z_{17}$$

In 2010-11, it was found that Bharmour was as at the top position followed by Kinnaur, Pangi, Lahul and Spiti. Whereas in respect of the second dimension Pangi was at the top position followed by Bharmour, Lahul, Kinnaur and Spiti.

Table 1.2**Factor Scores (based on first factor) of social development in tribal areas**

S.No.	Regions	1980-81		1990-91		2000-01		2010-11	
		Index	Rank	Index	Rank	Index	Rank	Index	Rank
1.	Kinnaur	2.15 (7.32)	2	4.66 (14.9)	2	-7.03 (0.53)	4	4.65 (14.17)	2
2.	Lahul	-3.17 (2.00)	4	-3.49 (6.75)	4	7.32 (14.88)	2	-5.36 (4.16)	4
3.	Spiti	-5.17 (0.00)	5	-10.24 (0.00)	5	10.36 (17.92)	1	-9.52 (0.00)	5
4.	Pangi	0.09 (5.26)	3	-0.190 (10.05)	3	-3.09 (4.47)	3	2.22 (11.74)	3
5.	Bharmour	6.97 (12.14)	1	12.27 (22.51)	1	-7.56 (0.00)	5	8.01 (17.53)	1
Mean		5.47		10.84		7.96		9.52	
S.D.		4.73		8.47		9.16		7.24	
C.V.		88.68		78.19		112.04		76.12	

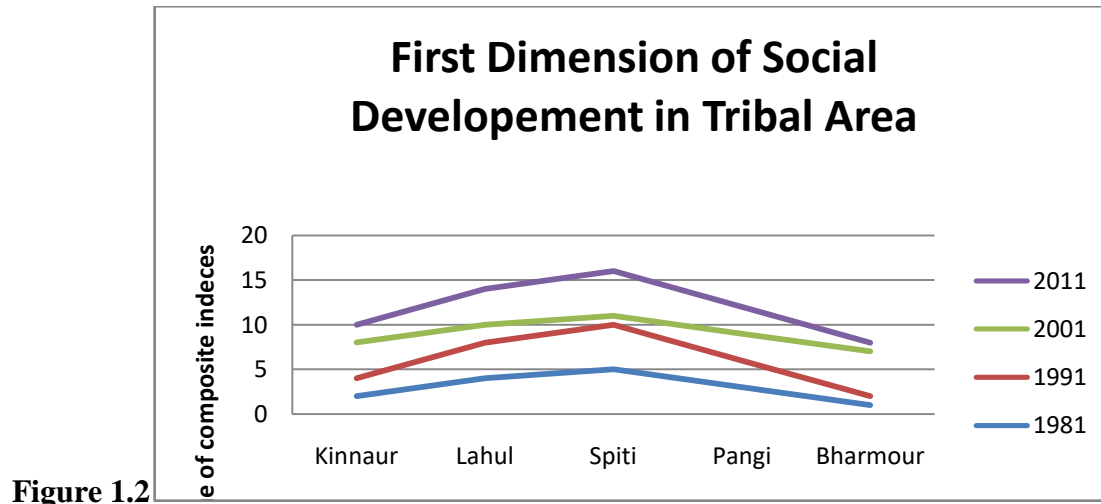
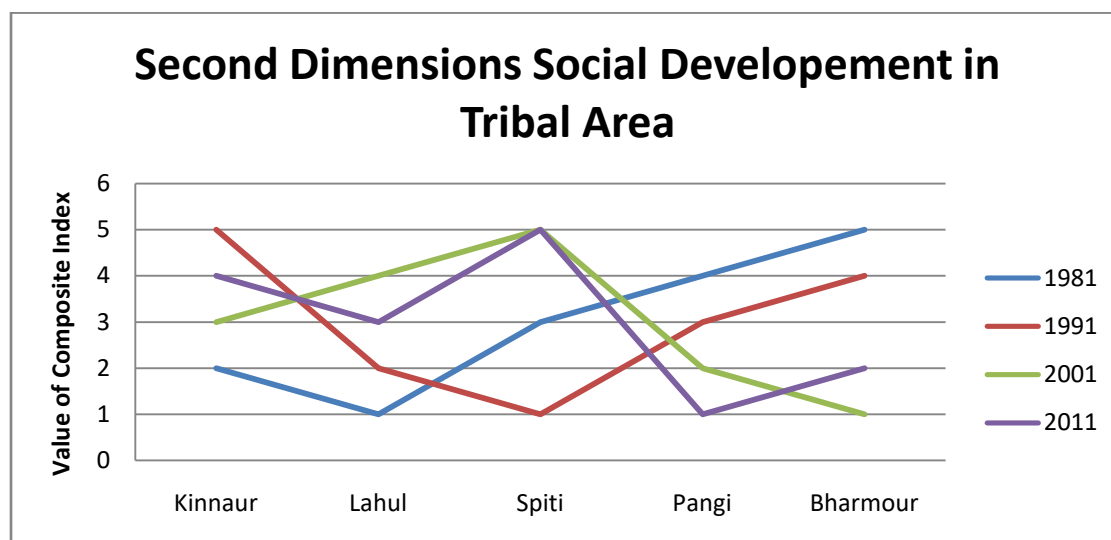
**Figure 1.2**

Table 1.3**Factor Scores (based on Second factor) of Social Development in Tribal Areas of Himachal Pradesh**

S.No.	Regions	1980-81		1990-91		2000-01		2010-11	
		Index	Rank	Index	Rank	Index	Rank	Index	Rank
1.	Kinnaur	2.46 (7.16)	2	-5.11 (0.00)	5	-0.92 (6.73)	3	-2.48 (1.92)	4
2.	Lahul	3.77 (8.47)	1	5.58 (10.69)	2	-3.72 (3.93)	4	-1.05 (3.35)	3
3.	Spiti	1.15 (5.85)	3	6.10 (11.21)	1	-7.65 (0.00)	5	-4.40 (0.00)	5
4.	Pangi	-1.87 (2.83)	4	-1.90 (3.21)	3	3.96 (11.61)	2	5.25 (9.65)	1
5.	Bharmour	-4.70 (0.00)	5	-4.67 (0.44)	4	8.34 (15.99)	1	2.68 (7.08)	2
Mean		4.86		5.11		7.62		4.4	
S.D.		3.42		5.47		6.29		3.9	
C.V.		70.53		107.13		82.24		89.01	

Figure 7.3

Conclusion:- From the above analysis of 1980-81, it was found that the Bharmour was at the top position followed by Lahul, Pangi, Kinnaur and Spiti whereas in respect of the second dimension Lahul was at the top position followed by Pangi, Spiti, Kinnaur and Bharmour. During 1990-91, it was found that Bharmour was at top position followed by Kinnaur, Pangi, Lahul and Spiti whereas in second dimension Spiti was at the top position followed by Lahul, Pangi, Bharmour and Kinnaur. On the basis of these two identified dimensions of social development, it is observed that the first dimension indicates availability of social facilities relative to population but the second dimension shows availability of these relative to geographical area. It is an undeniable fact that diverse demographic character of regions in the state presents a different picture of attainment of level on social facilities on them. In 2000-01, it was found that Spiti was as at the top position followed by Lahul, Pangi, Kinnaur and Bharmour. Whereas in respect of the second dimension Bharmour was at the top position followed by Pangi, Kinnaur, Lahul and Bharmour. In 2010-11, it was found that Bharmour was as at the top position followed by Kinnaur, Pangi, Lahul and Spiti. Whereas in respect of the second dimension Pangi was at the top position followed by Bharmour, Lahul, Kinnaur and Spiti.

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