

Dynamics of Socio-economic Development in Maharashtra¹

Prem Narain, S.C. Rai and Shanti Sarup

Indian Society of Agricultural Statistics, New Delhi - 110012

SUMMARY

The level of development of various districts of Maharashtra was obtained with the help of composite index based on optimum combination of forty three economic indicators. Twenty nine districts of the State were included in the study. The district-wise data for the year 1991-92 on forty three economic indicators were used. The level of development was examined separately for agricultural, industrial, infrastructural and overall socio-economic developments. The district of Pune was ranked first and that of Gad Chiroli was the last in the levels of socio-economic development in the State. Wide disparities have been observed in the level of development in different districts. The socio-economic development was positively associated with the growth and progress of development in agricultural and industrial sectors in the State. The agricultural and industrial developments are going hand in hand in most of the districts of the State.

For bringing about uniform regional development, potential targets for various indicators had been estimated for low developed districts. The study revealed that the low developed districts required improvements of various dimensions in most of the indicators for enhancing the overall socio-economic development.

Key-words : Composite index, Development indicators, Model districts, Potential targets, Regional disparities

1. Introduction

The soil, topography and climate in Maharashtra are not very favourable for high valued crops and have led to relatively low yields of important crops in the State as compared to that at the all India level. Nearly one third of the State falls in the rain shadow area where the rains are not only scanty but erratic also. Even with regard to irrigation, the State is far below the national average, the percentage of gross irrigated area to gross cropped area in the State being only 15 per cent compared to 33 per cent for the country as a whole. The agriculture in the State is thus largely dependent on monsoon. But the State has a potential and plenty of scope to grow various horticultural crops

1 Study undertaken in the Research unit of ISAS during 1996.

Example

Let $m (=3)$ be the number of symbols, denoted by $S = (1, 2, 3)$. It is given that $m = 3$, we can construct $m! = 3! = 6$ latin squares following Theorem 2.2 and $(m + 1)! - m! = 4! - 3! = 18$ graeco latin squares following Theorem 2.3.

The latin squares are denoted by $L_i, i = 1, 2, \dots, 6$ and are given as

$$\begin{aligned} L_1 &= (1 \ 2 \ 3) \\ L_2 &= (1 \ 3 \ 2) \\ L_3 &= (2 \ 1 \ 3) \\ L_4 &= (2 \ 3 \ 1) \\ L_5 &= (3 \ 1 \ 2) \\ L_6 &= (3 \ 2 \ 1) \end{aligned}$$

The graeco latin squares are denoted by $G_i, i = 1, 2, \dots, 18$ and are given as

$$\begin{aligned} G_1 &= [(1, 3) (2, 2) (3, 1)] & G_{10} &= [(2, 2) (3, 1) (1, 3)] \\ G_2 &= [(1, 1) (2, 3) (3, 2)] & G_{11} &= [(2, 3) (3, 2) (1, 1)] \\ G_3 &= [(1, 2) (2, 1) (3, 3)] & G_{12} &= [(2, 1) (3, 3) (1, 2)] \\ G_4 &= [(1, 3) (3, 1) (2, 2)] & G_{13} &= [(3, 1) (1, 3) (2, 2)] \\ G_5 &= [(1, 1) (3, 2) (2, 3)] & G_{14} &= [(3, 2) (1, 1) (2, 3)] \\ G_6 &= [(1, 2) (3, 3) (2, 1)] & G_{15} &= [(3, 3) (1, 2) (2, 1)] \\ G_7 &= [(2, 2) (1, 3) (3, 1)] & G_{16} &= [(3, 1) (2, 2) (1, 3)] \\ G_8 &= [(2, 3) (1, 1) (3, 2)] & G_{17} &= [(3, 2) (2, 3) (1, 1)] \\ G_9 &= [(2, 1) (1, 2) (3, 3)] & G_{18} &= [(3, 3) (2, 1) (1, 2)] \end{aligned}$$

ACKNOWLEDGEMENT

The author wishes to thank the referee for the constructive comments which have improved the presentation of this paper.

REFERENCE

- [1] Das, A. and Dey, A., 1990. A note on construction of Graeco latin square of order $2n + 1$. *J. Indian Soc. Agric. Statist.*, **42**, 247-249.

and the State Government has undertaken several programmes to promote horticultural development. The population of Maharashtra as per 1991 census was 7.89 crore. The population growth rate in the State during 1981-91 decade was 25.73 per cent which was higher than that at the all India level (23.51 per cent). It was also higher as compared to that during earlier decade 1971-81 (24.54 per cent) for the State. Maharashtra is the third largest State in India both in respect of area and population. The percentage of urban population in the State was 38.7 which was much higher than that of all India level of 25.7. In this regard also the State stands third amongst all the States. The rural population of the State was 61.3 per cent which was significantly lower than that of national level of 74.3 per cent. The density of population in the State increased from 204 in 1981 to 257 in 1991 and the density is less as compared to that at the all India level of 267. The literacy rate of population for the State according to 1991 population census was 64.9 per cent which was significantly higher than that at the all India level of 52.1 per cent. The State ranks fourth in respect of literacy rate amongst all the States in India. The literacy rate in the State for males and females was 76.6 and 52.3 per cent respectively.

Development has been defined as a process which improves the quality of life. Development of social sector along with technology absorption in both agriculture and industry which are the principal sectors of economy, could be considered as the primary objective of any socio-economic developmental efforts. Economic planning has been used in the country as an instrument for bringing about uniform regional development. It would be of interest to measure the level of socio-economic development at district level since there has been a growing consensus about the need of district level planning. A knowledge of the level of development at district level will help in identifying where a given district stands in relation to others.

The present study has been undertaken in the State of Maharashtra where an attempt has been made to evaluate separately the level of development in agricultural, industrial, infrastructural and overall socio-economic sectors by constructing the composite index of development at the district level. The relationships between the levels of development of different sectors have been studied. The study also throws light on the nature of regional disparities in the levels of development and uses the concept of distances and composite indices of development based on various indicators for identifying the districts which can be taken as models for poorly developed districts. The potential targets for various developmental indicators in respect of backward areas have been fixed on the basis of model districts.

2. *Methods of Analysis*

Socio-economic development is multi-dimensional and it is not pre-determined but is a continuous process of improvement of levels of living. Its impact can not be measured fully by a single indicator. A number of indicators when analysed individually, do not provide an integrated and easily comprehensive picture of reality. Hence there is a need for building up of a composite index of development based on various economic indicators combined in an optimum manner. For this study, districts have been taken as the unit of analysis. Twenty nine districts of the State excluding Greater Bombay have been included in the analysis. The district of Greater Bombay has been excluded from the analysis as it does not contain any rural area. Entire population of the district live in urban area and they are not very much affected by the rural development. The study utilises data for the year 1991-92 on forty three socio-economic indicators out of which sixteen indicators are directly concerned with agricultural development, five indicators depict the progress of industrial development and the rest twenty two indicators present the level of development for human resources and infrastructural service sector.

3. *Development Indicators*

Each district faces situational factors of development unique to it as well as common administrative and financial factors. Factors common to all the districts have been taken as the indicators of development. The composite indices of development for different districts have been obtained by using the data of the following development indicators.

1. Percentage of net area sown to total geographical area.
2. Percentage of area sown more than once to net sown area.
3. Percentage of total area under foodgrains to total gross cropped area.
4. Average yield of all cereals (kg/ha).
5. Foodgrains production per capita (in kg).
6. Average size of operational holdings (in ha).
7. Percentage distribution of marginal farmers (less than one ha).
8. Net area sown per cultivator (in ha).
9. Percentage of net area irrigated to net sown area.
10. Percentage of actual irrigated area to irrigation potential created.
11. Number of tractors per 1000 ha of net area sown.
12. Number of working cattle, buffaloes per 1000 ha of net area sown.

13. Number of cows and buffaloes in milk per 1000 human population.
14. Strength of total livestock per 100 human population.
15. Percentage of forest area to total geographical area.
16. Value of forest produce per ha of forest area (in Rs.).
17. Number of factory workers per working factory.
18. Number of factory workers per lakh population.
19. Percentage of factory workers.
20. Annual earnings per employee in manufacturing industries (in '000 Rs.).
21. Per capita industrial consumption of electricity (in kwh).
22. Density of population per square km of area.
23. Percentage of urban population to total population.
24. Percentage decadal growth rate of population during 1981-91.
25. Percentage of main workers to total population.
26. Percentage of literacy in rural areas.
27. Percentage of total literacy.
28. Number of hospitals per lakh population.
29. Number of beds in medical institutions per lakh population.
30. Number of registered deaths per lakh population.
31. Number of educational institutions per lakh population.
32. Number of students enrolment per lakh population (in '000).
33. Borrowings per agricultural and non-agricultural credit institution (in crore Rs.).
34. Number of members per agricultural and non-agricultural credit institutions (in hundred).
35. Domestic consumption of electricity per capita (in kwh).
36. Number of motor vehicles per lakh population (in hundred).
37. Road length per 100 square km of geographical area (in km).
38. Number of post and telegraph offices per lakh population.
39. Number of telephones per lakh population (in hundred).
40. Number of commercial banks per lakh population.
41. Number of co-operative banks per lakh population.
42. Number of establishments per lakh population (Economic Census 1990).

43. Employment per establishment (Economic Census 1990).

A total of forty three developmental indicators have been included in the analysis. These indicators may not form an all inclusive list but these are the major interacting components of socio-economic development.

4. *Estimation of Composite Index of Development and Fixation of Potential Targets*

Since variables are taken from different population distributions and these are recorded in various measurement levels, their values are not quite suitable for analysis. Hence these have been standardised and their standardised values are used to construct composite index of development. The best district for each indicator (with maximum/minimum standardised value depending upon the direction of the indicator) is identified and the deviations of the standardised values from the best values of the indicator are obtained for each district. The statistical techniques presented by Narain, Rai and Sarup [1] are used to build up the composite index of development for agricultural, industrial, infrastructural service and overall socio-economic sectors for each district. The value of the composite index is non-negative and lies between 0 and 1. A value close to zero indicates higher level of development whereas the value close to one indicates lower level of development.

The developmental distances based on the indicators have been obtained for each pair of districts and model districts have been identified on the basis of critical distance and composite index. The best value of the model districts in respect of various indicators had been taken as potential target for the poorly developed districts.

5. *Results and Discussion*

Development Indices

The composite index of development had been worked out for different districts separately for agricultural, industrial, infrastructural and overall socio-economic developments. The districts have been ranked on the basis of their developmental indices. The composite indices of development along with the district ranks are presented in Table 1.

It may be seen from the table that out of twenty nine districts of the State which had been considered for analysis, the district of Gad Chiroli was ranked last in the overall socio-economic development. The composite indices of development varied from 0.67 to 0.98. For the purpose of classificatory analysis, a simple ranking of the district would do. A more meaningful

Table 1. Composite index of development

Districts	Agriculture		Industry		Infrastructure		Overall Socio-economic	
	Com- posite Index	Rank	Com- posite Index	Rank	Com- posite Index	Rank	Com- posite Index	Rank
1. Thane	0.81	10	0.25	1	0.89	21	0.80	4
2. Raigad	0.82	15	0.43	3	0.75	8	0.77	2
3. Ratnagiri	0.97	29	0.78	20	0.78	13	0.95	26
4. Sindhudurg	0.92	28	0.85	28	0.77	9	0.95	25
5. Nasik	0.80	6	0.60	4	0.71	3	0.78	3
6. Dhule	0.82	12	0.76	18	0.85	18	0.90	17
7. Jalgaon	0.82	13	0.71	12	0.79	14	0.85	11
8. Ahmadnagar	0.80	7	0.69	11	0.77	10	0.83	9
9. Pune	0.79	5	0.28	2	0.66	1	0.67	1
10. Satara	0.81	9	0.68	10	0.72	5	0.81	6
11. Sangli	0.86	21	0.65	7	0.70	2	0.81	5
12. Sholapur	0.88	26	0.77	19	0.78	12	0.89	16
13. Kolhapur	0.85	20	0.66	9	0.73	6	0.83	10
14. Aurangabad	0.76	3	0.74	14	0.83	16	0.86	13
15. Jalna	0.88	25	0.80	23	0.98	28	0.97	28
16. Parbhani	0.87	22	0.81	26	0.95	27	0.95	27
17. Beed	0.87	23	0.79	22	0.92	25	0.93	22
18. Nanded	0.87	24	0.74	15	0.91	24	0.92	21
19. Osmanabad	0.75	2	0.75	16	0.92	26	0.90	18
20. Latur	0.85	19	0.72	13	0.86	19	0.88	14
21. Buldana	0.82	14	0.81	24	0.89	22	0.93	24
22. Akola	0.84	18	0.76	17	0.82	15	0.89	15
23. Amravati	0.90	27	0.81	25	0.74	7	0.91	19
24. Yavatmal	0.84	17	0.78	21	0.86	20	0.91	20
25. Wardha	0.83	16	0.65	5	0.77	11	0.85	12
26. Nagpur	0.81	8	0.65	6	0.71	4	0.82	8
27. Bhandara	0.76	4	0.83	27	0.90	23	0.93	23
28. Chandrapur	0.74	1	0.66	8	0.85	17	0.82	7
29. Gad Chiroli	0.81	11	0.90	29	0.99	29	0.98	29

characterisations of different stages of development would be in terms of fractile classification from an assumed distribution of the mean of composite indices. It appears appropriate to assume that the mean has a Beta distribution in the range (0, 1). The distribution is generally skewed and perhaps relevant to characterise positive value random variables. Let $(0, Z_1)$; (Z_1, Z_2) and $(Z_2, 1)$ be linear intervals such that each interval has the same probability weight of 0.33. These fractile groups can be used to characterise the different stages of development. For relative comparison, the districts with composite indices upto 0.82 may be taken as developed and put in category I. The districts with composite indices between 0.83 to 0.90 may be taken in category II, as developing and with composite indices greater than 0.90 as poorly developed districts and these may be put in category III. It is observed that according to this classification, in overall socio-economic development in districts of Thane, Raigad, Nasik, Pune, Satara, Nagpur and Chandrapur fall in category I and these may be taken as developed districts. The districts of Dhule, Jalgaon, Ahmadnagar, Sholapur, Kolhapur, Aurangabad, Osmanabad, Latur, Akola and Wardha may be put in category II and classified as developing districts. The remaining districts of Ratnagiri, Sindhudurg, Jalna, Parbhani, Beed, Nanded, Buldana, Amravati, Yavatmal, Bhandara, and Gad Chiroli fall in category III and these might be taken as poorly developed districts in the State.

It will be quite interesting and useful to examine the levels of development of different districts separately for agricultural, industrial and infrastructural service sectors. The composite indices of development varied from 0.74 to 0.94 in agriculture sector, from 0.25 to 0.90 in industrial sector and from 0.66 to 0.98 in infrastructural service sector. The district of Chandrapur was placed in the first rank and the district of Ratnagiri was ranked last in the level of development in agricultural sector. In agricultural development, fifteen districts were developing and the remaining two districts were found to be poorly developed. In case of industrial development, the districts of Thane, Pune and Raigad were observed to be very highly developed. All the remaining districts of the State were found to be much behind as compared to these districts in the level of industrial developments. However, twenty six districts were in category I and the remaining three districts were in category II. In respect of infrastructural service sector, the district of Pune was placed on the first position and the district of Gad Chiroli was ranked last. Fifteen districts were developed, eight districts were found to be developing and the remaining six districts were poorly developed. The district of Gad Chiroli was observed to occupy the last position in the levels of development in industrial, infrastructural and overall socio-economic development. More than 85 per cent area in this district is

covered under forest and about 51 per cent population belongs to scheduled caste and scheduled tribes with very little literacy percentages.

Relative Share of Area and Population

An important aspect of the study is to find out the relative share of area and population affected under different stages of development. Table 2 describes the percentage area and population covered by the districts falling under different stages of development.

It is evident from the table that about 24 per cent area consisting of about

Table 2. Area and population under different stages of development

<i>Levels of Development</i>	<i>Sector of Economy</i>	<i>Member of Districts</i>	<i>Area (%)</i>	<i>Population (%)</i>
High	(a) Agriculture	15	55.9	59.7
	(b) Industry	26	90.9	94.4
	(c) Infrastructure	15	50.2	57.3
	(d) Socio-economic	8	23.8	34.0
Medium	(a) Agriculture	12	38.6	36.0
	(b) Industry	3	9.1	5.6
	(c) Infrastructure	8	33.7	28.5
	(d) Socio-economic	10	40.7	38.8
Low	(a) Agriculture	2	5.5	4.3
	(b) Industry	—	—	—
	(c) Infrastructure	6	16.1	14.2
	(d) Socio-economic	11	35.5	27.2

34 per cent population of the State fall in the districts which are better developed in the over all socio-economic field. About 41 per cent area and 39 per cent population come from the districts which are middle level developed. The remaining 35 per cent area and 27 per cent population fall in the districts which are low developed or backward in the socio-economic field. In agriculture sector about 56 per cent area and 60 per cent population belong to the districts which

are better developed. Middle level developed districts cover about 39 per cent area and 36 per cent population where as poorly developed districts occupy about 5 per cent area and are having about 4 per cent population of the State. The situation regarding the industrial development in the State is slightly different where about 91 per cent area and 94 per cent population belong to the better developed districts and the rest 9 per cent area and 6 per cent population come from the middle level developed districts. It is observed that about half of the area of the State covering about 57 per cent population belong to the districts having better infrastructural facilities. About one third area with 29 per cent population are affected with middle level infrastructural facilities. The remaining 16 per cent area and 14 per cent population are having poor level of infrastructural facilities. It is further observed that poorly developed or backward districts are not as thickly populated as the districts belonging to the category of better development.

Inter-relationships Among Different Sectors

For better economic growth and development, it is essential that agriculture and industry must flourish together in the State because industries provide basic inputs for agricultural improvement and use agricultural produce as the principal raw material for preparation of finished goods. For examining the relationships among the levels of development in different sectors of economy, pair-wise rank correlations have been worked out and presented in Table 3.

Table 3. Pair-wise rank correlation coefficients

Pair of Sectors	Correlation Coefficient
1. Agriculture and Industry	0.38*
2. Agriculture and Infrastructure	0.05
3. Agriculture and overall socio-economic development	0.49*
4. Industry and Infrastructure	0.59**
5. Industry and overall socio-economic development	0.93**
6. Infrastructure and overall socio-economic development	0.69**

* Significant at 0.05 probability level.

** Significant at 0.01 probability level.

The correlation coefficients between the ranking of industrial and socio-economic developments and between the infrastructural service facilities and socio-economic developments are found to be very high and these are highly significant. The association between agricultural and overall socio-economic developments is of lower order but found to be statistically significant. The level of socio-economic development in the State depends upon the progress and development of agriculture and industry. The correlation coefficient between the levels of development in agricultural and industrial sectors is positive and significant which implies that the districts which are agriculturally developed, are mostly developed in industrial sector also and vice-versa. The levels of development in agricultural and industrial sectors seem, therefore, to go hand in hand in the State. Infrastructural facilities are not influencing agricultural development but their influence in industrial development is observed to be significant and in positive direction.

Potential Targets for Low Developed Districts

It is observed that there are wide disparities in the level of development in different regions of the State. It would be quite useful to examine the extent of improvement required in various indicators of the low developed districts. It will also provide avenues to bring about uniform regional development in the State. Such information may help the planners and administrators to readjust the resources and priorities to reduce inequalities in the levels of development among different districts of the State. For estimation of potential targets of different indicators, model districts have been identified for the low developed districts. The identification of model districts has been made on the basis of composite index of development and developmental distances between different districts.

Eleven districts covering an area of about 36 per cent and population of about 27 per cent of the State are found to be very poorly developed in respect of overall socio-economic development. The extent of improvement needed in various indicators is presented below in respect of poorly developed districts.

Ratnagiri District

Only 28 per cent area of the district is under cultivation. There is not enough irrigation facilities and modern agricultural equipments are also lacking. There is very poor maintenance of cows, buffaloes and other livestock. On the whole, the district is backward in agricultural development. Major improvements are required in enhancing the irrigation facilities and livestock products by proper maintenance of cows and buffaloes and other livestock.

Sindhudurg District

Only 21 per cent area of the district is under cultivation. The progress of development in agriculture sector in the district is very poor. Major improvements are required in the indicators of agricultural development in the district. The district does not have enough medical facilities, road transport and communication system. These indicators require improvements of various dimensions.

Jalna, Parbhani, Beed and Nanded Districts

The industrial developments in these districts are very poor. The indicators related to industrial development require major improvements. There is very low literacy percentage in these districts and the number of educational institutions is not enough to enhance the literacy rate. Special drive should be made for improvement of literacy rate in the districts. Internal transport and communication systems are poor which require major improvement. About one third population of Nanded district belong to weaker section (scheduled caste and scheduled tribes).

Amraoti and Yavatmal Districts

These districts are backward in industrial development. Agricultural progress is badly affected by the non-availability of modern agricultural equipments and poor irrigation facilities. Literacy rate and the educational institutions in the districts are very low. These districts do not have sufficient medical, transport and communication facilities. The indicators of these factors require major improvements. About one third population of these districts belong to poor section of the society and about 28 per cent area is covered by forest.

Bhandara and Gad Chiroli Districts

About 85 per cent area of Gad Chiroli district and 47 per cent area of Bhandara district are covered under forest. Only 13 per cent area in Gad Chiroli and about 39 per cent area in Bhandara are put under cultivation. About 51 per cent population of Gad Chiroli and 32 per cent population of Bhandara belong to weaker section of the society. These districts are very poor in industrial development, medical, transport, communication and banking facilities. Literacy rates are also very low. Indicators concerning these factors require major improvements.

6. Conclusions

The broad conclusions emerging from the study are as follows:

1. With respect to overall socio-economic development, the districts of Thane, Raigad, Nasik, Pune, Satara, Sangli, Nagpur and Chandrapur were found to be better developed as compared to the remaining districts of the State. The districts of Ratnagiri, Sindhudurg, Jalna, Parbhani, Beed, Nanded, Buldana, Amraoti, Yavatmal, Bhandara and Gad Chiroli were socio-economically low developed.
2. The situations regarding the agricultural and industrial developments in the state were found to be slightly different as compared to overall socio-economic development. Fifteen districts were observed to be developed districts and only two districts were low developed in agriculture sector. The remaining districts were having the tendency of improvement in the level of development. In case of industrial development, the districts of Thane, Pune and Raigad were found to be very highly developed. The remaining districts were much behind in industrial development as compared to these districts. There is much variation between the districts in the availability of infrastructural facilities. Fifteen districts were having better level of infrastructural facilities and six districts were having lower level of these facilities.
3. The overall socio-economic development was positively associated with agricultural and industrial developments in the State. The growth and progress in the fields of agriculture and industry have influenced the level of overall socio-economic development in the positive direction. The levels of development in agricultural and industrial sectors seem to go hand in hand in most of the districts. The infrastructural facilities have a greater impact in enhancing the level of socio-economic development but these facilities are not fully utilised in the growth and development of agriculture.
4. On the basis of identification of model districts for the poorly developed districts, it was found that low developed districts required improvements of various dimensions in different indicators for enhancing their level of present development.
5. Wide disparities in the level of development had been observed among different districts.

REFERENCES

- [1] Narain, P., Rai, S.C. and Shanti Sarup, 1991. Statistical evaluation of development on socio-economic front. *J. Indian Soc. Agric. Statist.*, **43**, 329-345.
- [2] Narain, P., Rai, S.C. and Shanti Sarup, 1992. Evaluation of economic development in India. Souvenir of 11th Economic Development Conference in "Complementarity of Agriculture and Industry in Development". Instt. Trade and Industrial Development, New Delhi, 67-77.
- [3] Narain, P., Rai, S.C. and Shanti Sarup, 1992. Classification of districts based on socio-economic development in Orissa. *Yojana*, **36**, No.23, 9-12.
- [4] Narain, P., Rai, S.C. and Shanti Sarup, 1993. Evaluation of economic development in Orissa. *J. Indian Soc. Agric. Statist.*, **45**, 249-278.
- [5] Narain, P., Rai, S.C. and Shanti Sarup, 1994. Regional dimensions of socio-economic development in Andhra Pradesh. *J. Indian Soc. Agric. Statist.*, **46**, 156-165.
- [6] Narain, P., Rai, S.C. and Shanti Sarup, 1994. Inter-district disparities in socio-economic development in Kerala. *J. Indian Soc. Agric. Statist.*, **46**, 362-377.
- [7] Narain, P., Rai, S.C. and Shanti Sarup, 1995. Regional disparities in the levels of development in Uttar Pradesh. *J. Indian Soc. Agric. Statist.*, **47**, 288-304.
- [8] Regional Dimensions of India's Economic Development. Proceedings of Seminar held on April 22-24, 1992 sponsored by Planning Commission, Govt. of India and State Planning Institute, Govt. of U.P.
- [9] Economic Survey of Maharashtra, 1993-94. Directorate of Economics & Statistics, Govt. of Maharashtra, Mumbai.
- [10] Selected Indicators for Districts in Maharashtra and States in India, 1990-91. Directorate of Economics & Statistics, Govt. of Maharashtra, Mumbai.