

SPATIAL ANALYSIS OF HUMAN RESOURCE DEVELOPMENT IN THE
NASHIK DISTRICT, MAHARASHTRA

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ABSTRACT

Human Resource Development means nothing but a development of mental and physical quality of individual. This quality of individual brings region to way of development. Human resource development is considered as the basic factor in the process of national development. Therefore, the study of human resource is very important in planning process. In India, at local and regional level, human resource development is not uniformly distributed. There is a large variation in spatial level of human resource development. Therefore, for framing planning and strategy of any region, it is very important to find out problem region. Once we identify the problem region, it gives to clue for planner to adopt proper remedial measures for correcting imbalances in development. The aim of the paper is to know the spatial level of human resource development in the Nashik district of Maharashtra. The present study is based on the secondary data, which are obtained from the Socio-Economic Abstract and District Handbook of Nashik district. The Kendall's ranking co-efficient index method is used for the present work. The levels of Human Resources development have been determined on the basic of seventeen indicators. The level of human resource development is not uniform in the study region. The level of human resource development is high in urbanized tahsils (Nashik and Malegaon) which promotes human resource development. In other hand level of human resource development is low in rugged topographical region and dry eastern part of the study region, where physical environment is not suitable.

KEY WORDS: Human Resource development, Problem region, Health facilities, Co-efficient Index.

INTRODUCTION

The study of human resources is vital from the point of view of economic welfare (*Datt & Sundharam, 2010*). Human resource development is considered as the basic factor in the process of national development (*Sandanshiv, 2009*). Therefore the study of human resource is very important in planning process. In India human resource development is not found uniformly distributed (*Bhole, 2010*). Human resource is the most precious of all resources (*Roy, 1997*). There is a large variation in development of human resources at local and regional level, which creates imbalance in the overall development. Therefore, for framing the plans for reducing such regional disparities in development, it is important to identify the problem region. Once we identify the problem region, it will give to clue for planner to adopt proper remedial measures for correcting imbalances in development. For this purpose to identify the problem region, the measurement of human resources development is very important. But it is not very easy task as it depends upon various indicators like education, health, communication facilities and different demographic aspects of the region, which are related with human resource development. In Nashik district also, human resource development is not uniformly distributed. It takes place in varied way due to variation in physical, socio-economic conditions and demographic attributes. A region which has favourable above mentioned factors, shows greater development on economic and human index while other regions stands backward in this regards.

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OBJECTIVES

The main objectives of the present paper are as follows.

- To appraise the human resource development in term of quality and quantity.
- To determine the spatial pattern of human resources development in the study region.
- To find out the problems regarding human resource development in the study region.
- To suggest the remedial suggestions for the balanced regional development in the study region.

STUDY AREA

Nashik district is situated partly in the Tapi basin and in partly upper Godavari basin. It lies between 19° 45' to 20° 45' North latitude and 73° 30' to 74° 45' East Longitude. It has an area of 15530 sq.k.m and population of 49, 93,796 as per the 2001 census. Location of the study area is showed in Fig. no.1. There are 15 talukas included in the Nashik District.

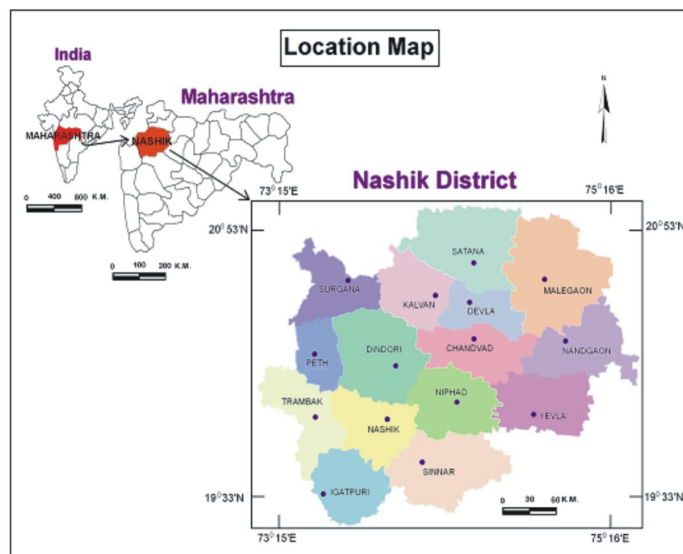


Fig.No.1

Source: Drawn by authors

The main system of hills is the *sahyadries*, which runs north- south in the western portion of the district. From the main *Sahyadrian* range, three prominent spurs stretch out to the east. In the extreme north is *selbari* range, which approximately forms a boundary between Nashik and Dhule district. Next is the *Satmal* range which runs right across the district. *Kalsubai* range is located in the south part of the district (*Gazetteer of the Bombay presidency, 1883*). The district has two main rivers namely the *Girna* and the *Godavari*. The district is surrounded by Dhule district in the north, Jalgaon and Aurangabad districts in the east, Ahemadnager district in the south, and Thane district in the south- west and Gujarat state in the north- west. There are four kinds of soils in the Nashik District, Black (Kali), Red (Lal), Red and Black (Koral) and Light Brown (Barad). Rice, Sugarcane, Onions, Grapes, Jowar, Bajra and Vegetables are the dominant crops of this region. The climate of the district is generally dry except during the monsoon season. The average annual rainfall of the district as a whole is 1034.5mm. The rainfall in general decreases

from west to east. The summer season is moderately hot and the temperature varies from 36° C to 43° C. The air is humid during the monsoon season and is generally dry during the rest of the year.

DATA BASE AND METHODOLOGY

The present study is based on the secondary source of data. Secondary data has been obtained from socio-economic abstract of the Nashik district (2007-08), District census handbook & District Gazetteers. The Tahsil has been taken as a unit for analysis for the level of agricultural development in the study region .Statistical tools like percentage and average have been used in the study. Data is processed and represented with the Choropleth map. The **Kendall’s ranking co-efficient index** method is used for the present work. The levels of Human Resources development have been determined on the basic of seventeen indicators. Out of these seventeen indicators, four are related with education, seven are related with health, four are related with population and two are related with communication facilities. They are as follow.

- 1) X₁=Total Population.
- 2) X₂= Population Density.
- 3) X₃=Total Literacy.
- 4) X₄= Sex Ratio (Females per 1000 males).
- 5) X₅=Urban Population
- 6) X₆= Numbers of Hospitals
- 7) X₇= Numbers of Dispensaries.
- 8) X₈= Numbers of Doctors.
- 9) X₉=Numbers of Nurses.
- 10) X₁₀= Primary Health Centers.
- 11) X₁₁=Numbers of Sub-centers.
- 12) X₁₂=Numbers of Beds.
- 13) X₁₃= Numbers of Post Offices.
- 14) X₁₄=Primary Schools.
- 15) X₁₅= Numbers of Colleges
- 16) X₁₆=Total Students (Up to 12th class).
- 17) X₁₇= Individual Telephone

By using data, the Co-efficient Index has been calculated for each tahsil of the Nashik district with help Kendall’s co-efficient Index method. For the calculation of co-efficient Index, following formula has been used.

$$\text{Kendall's Co-efficient Index} = \frac{\sum R}{N}$$

Where $\sum R$ = Sum of rank, N=Numbers of variables.

The co-efficient index is inversely related to development i.e. lower the index, more the development and higher the index, lower the development.

RESULT AND DISCUSSION

Level of Human Resources development To find out the level of human resource development in the Nashik district, seventeen indicators are selected. These all indicators are shown in the Table1. It includes socio-economic indicators like total population, population density, literacy rate, sex-ratio, urban population and other indicators that are related with health, education and communication. By using the Kendall’s co-efficient index method, the co-efficient index is calculated for each tahsil of the study region, which is shown in the Table 2.On the basis of co-efficient index, tahsils of the study region are classified into four grouped. These all groups and tahsils are shown in Table 3 and figure 2.

TABLE 1, NASHIK DISTRICT: SPATIAL DISTRIBUTION OF HUMAN RESOURCES DEVELOPMENT

Name of Tahsil	X1	X2	X3	X4	X5	X6	X7	X8	X9
Surgana	145135	172	53.9	988	4.24	2	10	21	73
Kalwan	165609	193	57.85	974	0	4	9	35	90
Deola	129988	225	73.76	930	0	7	5	20	143
Satana	311395	211	69.45	947	10.46	11	14	31	101
Malegaon	789230	432	76.06	946	57.78	22	14	81	256
Nandgaon	236319	217	84.67	935	40.45	5	7	16	66
Chandwad	205189	214	84.32	936	0	5	6	19	39
Dindori	264727	197	81.96	951	0	9	12	24	67
Peth	96774	173	56.9	992	0	2	8	29	59
Trambak	136417	154	83.62	976	7.42	17	8	33	179
Nashik	1317367	1625	52.54	876	87.75	51	36	596	1636
Igatpuri	228208	270	62.7	947	22.88	9	10	21	54
Sinnar	292075	216	73.62	930	10.85	11	7	19	47
Niphad	439842	417	76.96	932	13.54	7	11	27	65
Yeola	235521	221	72.51	938	18.44	7	6	16	39

Name of Tahsil	X10	X11	X12	X13	X14	X15	X16	X17
Surgana	8	38	78	28	317	1	34232	443
Kalwan	7	49	142	28	195	2	43384	3466
Deola	5	25	60	19	102	1	30278	2727
Satana	11	53	96	47	243	4	66624	9298
Malegaon	18	49	234	101	333	7	92546	19060
Nandgaon	5	20	80	26	179	2	47397	8639
Chandwad	5	27	80	52	168	6	55690	2277
Dindori	10	66	90	71	229	4	62066	5761
Peth	7	29	72	24	170	1	38100	591
Trambak	6	35	96	35	219	2	30739	1743
Nashik	27	92	2606	79	393	11	452299	98500
Igatpuri	8	49	78	34	214	1	51733	3343
Sinnar	6	34	104	54	181	1	65306	8329
Niphad	9	53	84	56	229	7	52959	17908
Yeola	4	22	60	34	204	11	58995	4156

Source: Socio-Economic Abstract of Nashik District-2007-08

TABLE 2, NASHIK DISTRICT: RANKING CO-EFFICIENT INDEX

Name of Tahsil	X1	X2	X3	X4	X5	X6	X7	X8	X9
Surgana	12	14	14	2	10	14.5	6.5	9.5	7
Kalwan	11	12	12	4	-	13	8	3	6
Deola	14	5	7	13.5	-	9	15	11	4
Satana	4	10	10	6.5	10	4.5	2.5	5	5
Malegaon	2	2	6	8	2	2	2.5	2	2
Nandgaon	7	7	1	11	3	11.5	11.5	14.5	9
Chandwad	10	9	2	10	-	11.5	13.5	12.5	15
Dindori	6	11	4	5	-	6.5	4	8	8
Peth	15	13	13	1	-	14.5	9.5	6	11
Trambak	13	15	3	3	9	3	9.5	4	3
Nashik	1	1	15	15	1	1	1	1	1
Igatpuri	9	4	11	6.5	4	6.5	6.5	9.5	12
Sinnar	5	8	8	13.5	7	4.5	11.5	12.5	13
Niphad	3	3	5	12	6	9	5	7	10
Yeola	8	6	9	9	5	9	13.5	14.5	15

Name of Tahsil	X10	X11	X12	X13	X14	X15	X16	X17	ΣR	Co-efficient Index
Surgana	6.5	8	11.5	11.5	3	13	13	15	171	10.06
Kalwan	8.5	6	3	11.5	10	9	11	9	137	8.06
Deola	13	13	14.5	15	15	13	15	12	188.5	11.09
Satana	3	3.5	5.5	7	4	6.5	3	4	94.46	5.56
Malegaon	2	6	2	1	2	3.5	2	2	49	2.88
Nandgaon	13	15	9.5	13	12	9	10	5	162	9.53
Chandwad	13	12	9.5	6	14	5	7	12	161	9.47
Dindori	4	2	7	3	5.5	6.5	5	7	92.5	5.44
Peth	8.5	11	13	14	13	13	12	14	181.5	10.68
Trambak	10.5	9	5.5	8	7	9	14	13	138.5	8.15
Nashik	1	1	1	2	1	1.5	1	1	46.5	2.74
Igatpuri	6.5	6	11.5	9.5	8	13	9	10	142.5	8.38
Sinnar	10.5	10	4	5	11	13	4	6	146.5	8.62
Niphad	5	3.5	8	4	5.5	3.5	8	3	100.5	5.91
Yeola	15	14	14.5	9.5	9	1.5	6	8	166	9.76

Source: Compiled by Researcher, 2012.

High Developed Region A region having ranking co-efficient index less than 3 is considered as high developed human resource region. In this class, Nashik and Malegaon tahsils are included. In this region, out of seventeen, fifteen indicators are dominated. Nashik tahsil is district headquarter and has two industrial (Satpur and Ambad) centers, where communicational facilities are well developed. Malegaon tahsil is also well developed in this regards, where small scale industries are developed. This region is an educationally advanced, so literacy is high as well as because of the municipal corporation; medical facilities are well developed in urban region.

TABLE 3, NASHIK DISTRICT: LEVEL OF HUMAN RESOURCES DEVELOPMENT

Co-efficient Index	Level of Human Resources Development	Names of Tahsils
0-3	High	Nashik and Malegaon
3-6	Medium	Niphad,Dindori and Satana
6-9	Low	Kalwan, Sinnar ,Trimbak and Igatpuri
Above 9	Very Low	Peth, Surgana, Deola, Yeola, Nandgaon and Chandwad

Source: Compiled by Researcher, 2012.

Medium Developed Region: A region having co-efficient index from 3 to 6 is included in this category. There are three tahsils, which have such index in the study region. They are Satana, Dindori and Niphad. This is a region where small scale industries and agro-based industries are well developed along with educational and health facilities. This helps to develop human resources in the region.

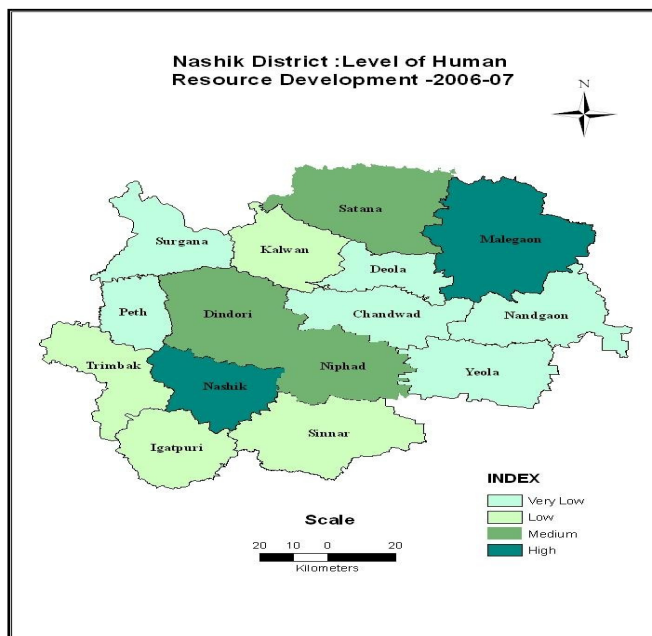


Fig. 2

Low Developed Region

A region having a co-efficient index from 6 to 9 is considered as a low developed region. In this region, Kalwan, Igatpuri, Trimbak and Sinnar tahsils are included. Igatpuri, Trimbak and some parts of Kalwan are located on the eastern part of western ghat because of undulating topography and inaccessible areas, health and educational facilities are not properly developed. In Sinnar tahsil, most part of the tahsil is dry, which is not suitable for human resource development. This region is considered as a problem region of the study region, which requires special attention in future human resource planning in the study region.

Very Low Developed Region

These regions have a co-efficient index more than 9 and are considered as problem regions. In this region six tahsils are included. These are Surgana, Peth, Nandgaon, Chandwad, Deola and Yeola. In this region, very low human resources are developed due to two main reasons. First is that, the parts of Peth and Surgana have rugged topography, which is not suitable for human resource development. Educational, health and communicational facilities are also not well developed in this region. Second is that, eastern part of the district is rain shadow area, where agricultural and industrial developments are not well developed.

CONCLUSION

The level of human resource development is not uniform in the study region. The level of human resource development is high in urbanized tahsils (Nashik and Malegaon) which promotes human resource development. In other hand, level of human resource development is low in rugged topographical region and dry eastern part of the study region, where physical environment is not suitable for human resource development. It has been observed that urban areas are better looked in terms of education, health and communicational facilities.

SUGGESTIONS

There is an urgent need to extend health, educational and communicational facilities to enhance the quality of people where human resources development is less developed in the study region. Nashik tahsil has achieved good progress in human resource development but sex ratio and literacy rate are still low as compared to other tahsils of the study region. Therefore, there is a need to consider this point in future planning, which requires special attention of planner for framing plans. There is a need to increase more infrastructural facilities in remote and problem regions, which can help to reduce the regional disparities. Numbers of school should be increased in the problems regions which will help to increase the literacy in the region. In problem regions, some agro-based and small scale industries should be started, which may be helpful in future development of health, communication and educational facilities.

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