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## LEVELS OF INFRASTRUCTURAL DEVELOPMENT IN KOLHAPUR DISTRICT: A GEOGRAPHICAL PERSPECTIVE

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### *Abstract*

*Infrastructure is one of the most important indicators of development, without which the developments of any region or country and progress of people is highly impossible. Infrastructure is the first need in achieving the social and economic well being of the people. Socio-economically and particularly agriculturally Kolhapur district is one of the developed districts in Maharashtra.*

*The present research paper is based on secondary sources of data which is obtained from socio-economic review 2014, District Statistical Abstracts & District Census Handbook of Kolhapur, 2011. This paper examines the extent of levels of infrastructural development at tahsil level. The secondary data has been processed and composite Index has been computed by considering 9 indicators. The composite indices of infrastructural development of different tahsils in the district are grouped into four categories. It is observed that there is greater disparity in the levels of infrastructural development. The lowest indices found in Chandgad tahsil (70.76) and the highest indices are found in Karveer (145.95) tahsil in the district.*

**Key-word:** *Levels of Development, Indicators, Composite Index, Indices.*

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### **INTRODUCTION:**

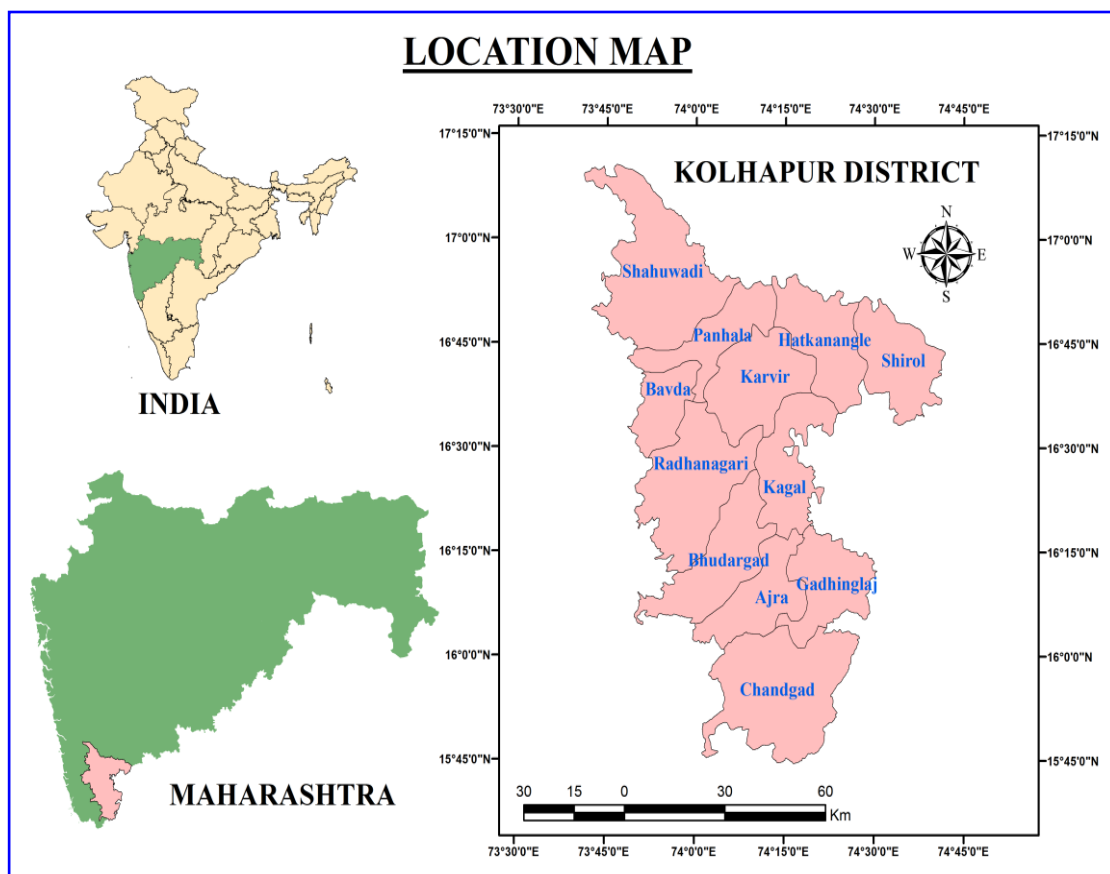
Infrastructure, in general, defines as a set of facilities through which goods and services are provided to the public. It is the stock of basic facilities and capital equipments needed for the functioning of a country or area. The infrastructural facilities play a catalytic role in the process of development, hence great emphasis should be placed on infrastructural facilities like education, health, transport, communication, banking, co-operation and power in the programs of economic development (Rao, 1984). In spite of various schemes, implemented under the successive five year plans for the infrastructural development in the various regions of the country, all the region have not attained the equal development and many have not attained minimum standard so far.

The present study attempts to analyze the tahsilwise levels in infrastructural development of Kolhapur district. The level of infrastructural development has been determined on the basis of nine indicators. With the help of related data we calculated tahsil-wise Composite Index and Indices.

**STUDY AREA:**

In India, Maharashtra occupies a very important position which ranks third in area and second in population. Within the state of Maharashtra the Kolhapur district has also a very significant position as regards to area and population. Kolhapur district lies in Southern Maharashtra, particularly at the western limit of Deccan table land. The region under study extends between 15° 17' north and 17° 17' north latitudes and 73° 40' east and 74° 42' east longitudes and comprising 12 tahsils. Kolhapur district is enclosed by Sangli district in the north, in the south of Karnataka state in Belgaum district and in the west it is bounded by Ratnagiri and Sindhudurg districts. The district sharing 2.62 % area of the Maharashtra state. According to 2011 census the total population of the district is 3876001. Kolhapur is the 'Historical and Religious City' is currently emerging as the largest educational center of certain cool stations, goods and services. Kolhapur district having 18 towns and 1206 villages. The distribution of the total population in the urban and rural areas is 1229896 and 1050353 respectively.

For Administrative convenience the district has been divided into 12 tahsils and development blocks. The study has been made at the tahsil level. The data have been compiled from various publications of the State Government and from the Census of India publications.



**Fig. 1 Location Map of Study Area**

**OBJECTIVES:**

The precise aim of the present study is to analyze the levels of infrastructural development in Kolhapur District by considering various related indicators and disparities at tahsil level.

**DATA SOURCE AND METHODOLOGY:**

The present research work is based on the secondary data collected from the following sources.

1. District Census Handbook of Kolhapur District, 2011.
2. Socio Economic Review of Kolhapur District, 2014.
3. Statistical Abstract of Kolhapur District.
4. Related Books, Journals, Unpublished Ph. D thesis, dissertation etc.

The collected data is processed with the help of various appropriate statistical and cartographic techniques have been applied for analyzing the data to measure the levels of infrastructural development. Computed levels of infrastructural development are categorized in four groups namely Infrastructurally Developed Tahsils, Infrastructurally Fairly Developed Tahsils, Infrastructurally Poorly Developed Tahsils and Infrastructurally Very Poorly Developed Tahsils.

The present study intends to analyze the tahsilwise levels of infrastructural development of Kolhapur district in the year 2014, by using the method of 'Proportional Standardized Mean and Composite Index' (Shrivastava, 1983). In this study, the weight of particular indicator and Composite Index are calculated by using following formula.

$$W = \frac{X}{\sigma}$$

Where, W = Weight of one particular Indicator

X = Average of the series of one particular indicator

$\sigma$  = Standard deviation of same series

$$C. I. = \frac{X_1W_1 + X_2W_2 + X_3W_3 + X_4W_4 + \dots + X_8W_8 + X_9W_9}{W_1 + W_2 + W_3 + W_4 + \dots + W_9}$$

Where,

C.I. = Composite Index.

X = Particular Indicator

W = Weight of series of one particular Indicator

Composite index of development has been calculated for all sectors of Indicators. Depend upon Composite index the Indices have been calculated by taking whole region as 100 (for average Composite Index) by using following formula:

$$\text{Indices} = \frac{\text{Composite Index of any Unit}}{\text{Average of Composite Index}} \times 100$$

**Indicators used for measurement of infrastructural development:**

The list of indicators used by various researchers is a long and varied one. The availability of data and their appropriateness seen to be the reason for their selection as indicators (Singh, 1995). The present study includes nine indicators which belong to six categories, *namely*, indicators of No. of Banks, indicators of health, indicators of post office, no. of telephone, no. of bus stations, and villages approached by Pucca road. Infrastructural development of the study area of Kolhapur District of south Maharashtra is measured at Tahsil level. For the tahsil level the data for the infrastructural indicators are obtained from the 2011 census and Socio Economic Review of Kolhapur District, 2014.

To compute composite index on infrastructural developmental performance of Kolhapur District in 2014, 9 indicators at tahsil level are taken into consideration. The following indicators have used, *namely*,

- 1) Number of Scheduled Banks per 10,000 of population. ( $X_1$ )
- 2) Number of Co-Operative Banks per 10,000 of population. ( $X_2$ )
- 3) Number of Primary Health Centres per 10,000 of population. ( $X_3$ )
- 4) Number of Sub Centres per 10,000 of population. ( $X_4$ )
- 5) Number of Hospitals and Dispensaries at tahsil level. ( $X_5$ )
- 6) Number of post offices per 100 sq.km. ( $X_6$ )
- 7) Number of telephones per 100 sq.km. ( $X_7$ )
- 8) Number of Bus Stations per 100 sq.km. ( $X_8$ )
- 9) Villages linked with pucca roads in percent. ( $X_9$ )

**RESULTS AND DISCUSSION:**

Kolhapur district is one of the Socio-economically, agriculturally well developed district in Southern Maharashtra. It has also developed in infrastructurally as compared to other districts of state, but within the district there is a disparity in the infrastructural development. Therefore, an attempt has been made to study tahsil-wise levels of infrastructural development.

In the district, the infrastructural development is not uniform, because some geographical reasons behind that.

**Table No.-1**  
**Kolhapur District**  
**Composite Index of Infrastructural Development (2014)**

Sr. No.	Name of Tahsil	Composite Index	Indices
1	Shahuwadi	23.66	80.13
2	Panhala	25.55	86.52
3	Hatkanangle	40.52	137.22
4	Shirol	36.59	123.91
5	Karveer	43.10	145.95
6	Gaganbavda	23.91	80.95
7	Radhanagari	21.43	72.56
8	Kagal	34.57	117.05
9	Bhudargad	23.90	80.94
10	Ajra	25.24	85.47
11	Gadhinglaj	34.97	118.41
12	Chandgad	20.89	70.76
<b>District Average</b>		<b>29.53</b>	<b>100</b>

*Source: Compiled by the Author*

Table No.1 shows that the composite Index of infrastructural development In Kolhapur district during 2014. It is observed that in the Kolhapur district, the infrastructural development is not homogeneous but it is related with great disparity.

The average composite indexes of twelve tahsils are 29.53 in study region. Karveer, Hatkanangle and Shirol tahsils are High composite index of infrastructural development i.e. 43.10, 40.52 & 36.59 respectively.

The individual weights of all the above indicators are 2.17, 2.84, 2.08, 2.87, 0.78, 1.82, 1.05, 1.76, & 6.11. In the study area it is observed that the highest weight is shows for the percentage of villages having approached by pucca road (6.11), followed by number of co-operative banks per 10,000 of population (2.84), number of sub centres per 10,000 of population (2.87). The lowest weight (0.78) found in number of hospitals and dispensaries.

All the tahsils value of composite index has been given in table 1. The indices have calculated by considering Kolhapur district as 100 (for average composite index 29.53) as given above. In the study composite indices of infrastructural development is to varied from the lowest of 20.89 in Chandgad tahsil to a highest of 43.10 in Karveer tahsil, it means that the Karveer is Infrastructurally well developed tahsil and Chandgad is Infrastructurally backward tahsil.

Karveer, Hatkanangle, Shirol, Gadhinglaj and Kagal tahsil has infrastructurally well developed in district, whose indices is higher (145.95, 137.22, 123.91, 118.47 and 117.05) than the district average (100.00). Remaining 7 tahsils would be taken as infrastructurally moderately and poor developed, because their indices are below the district average.

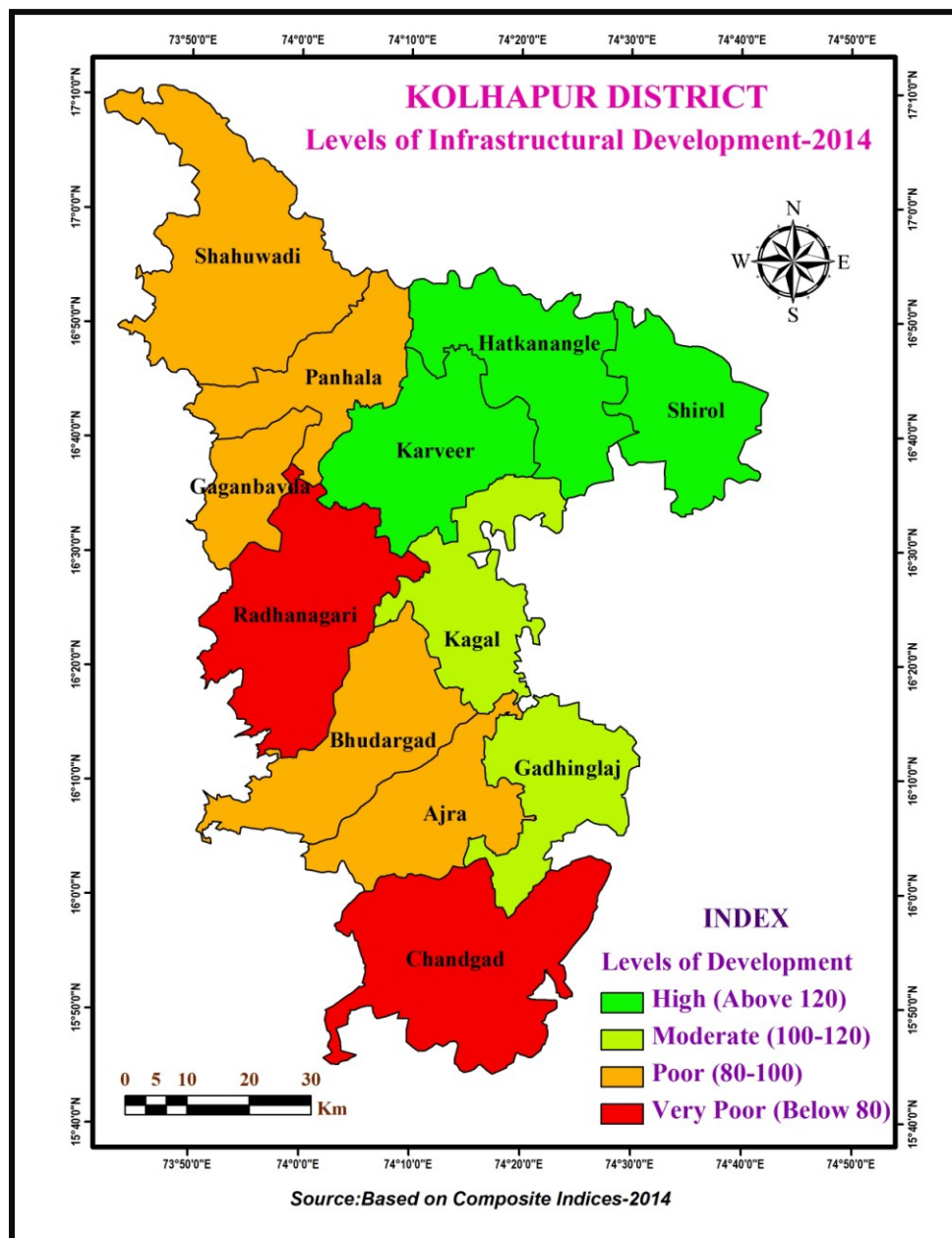
#### **THE LEVEL OF INFRASTRUCTURAL DEVELOPMENT:**

The composite index of the indicators for twelve tahsils has been divided into four categories. Three tahsils belongs to first category, two tahsils to the second category, five tahsils to the third category and two tahsils to the fourth and last category. The tahsil of the first category have infrastructurally high developed, those of the second category have moderately developed, those of third category have poorly developed and those of fourth and last category have very poorly developed. (Table-2)

**Table No.-2**  
**Kolhapur District**  
**Levels of Infrastructural Development (2014)**

<b>Indices Value</b>	<b>Above 120</b>	<b>100 to 120</b>	<b>80 to 100</b>	<b>Below 80</b>
<b>Category</b>	Highly Developed	Moderately Developed	Poorly Developed	Very Poorly Developed
<b>Tahsils</b>	Karveer Hatkanangle Shirol	Gadhinglaj Kagal	Shahuwadi Panhala Gaganbavda Ajara Bhudargad	Radhanagari Chandgad
<b>No. of Tahsil</b>	<b>3</b>	<b>2</b>	<b>5</b>	<b>2</b>

Source: Compiled by the author.



*Fig.2 Levels of Infrastructural Development*

### 1) Infrastructurally Developed Tahsils:

In this category three tahsil consist viz. Karveer, Hatkanangle and Shirol whose indices are 120 and more point above the district average. (Table-2). The high infrastructural development in this tahsil is due to more number of scheduled and co-operative banks, primary health centres, sub centres, hospitals and dispensaries, post and telephone offices, number of bus stations and also more number of villages linked with pucca roads. In the study area, Hatkanangle tahsil have 100 percent villages are linked with pucca roads.

## **2)Infrastructurally Moderately Developed Tahsils:**

The tahsils have composite indices value in between 100 to 120 are included moderately developed tahsils. In this category consist of two tahsils namely, Gadhinglaj and Kagal. The composite indices value of these tahsil is higher than the district average (118.41 & 117.05). These tahsil all indicators are also well developed but less than the developed tahsil. This sound infrastructure support in these tahsils has further resulted in the levels of socio-economic development. Rather these two tahsil are politically very much conscious which has helpful influence on the infrastructural development.

## **3)Infrastructurally Poorly Developed Tahsils:**

In these category five tahsils namely, Shahuwadi, Panhala, Gaganbavda, Ajra and Bhudargad whose indices value is less than the district average. Composite Indices value in between 80 to 100. The levels of infrastructural development in these tahsil is low due to very less number of scheduled and co-operative banks, primary health centres, sub centres, hospitals and dispensaries, post and telephone offices, number of bus stations and also low number of villages linked with pucca roads.

## **4)Infrastructurally Very Poorly Developed Tahsils:**

The tahsils which have very low index value i.e. Below 80 are included in very poorly developed tahsils. It covers two tahsils namely Radhanagari and Chandgad. These tahsils having infrastructurally very poor position in respect of all the indicators of infrastructure development. These two tahsil having poor political background resulting in the low level of infrastructural development.

In the study area, first two category tahsils having high infrastructural development because of these located to the eastern and central part of the district. This area has plain in nature. Last two categories which is infrastructurally very less developed comprises seven tahsils and covers the western and southern hilly part of the district.

## **CONCLUSION:**

To conclude, it is found that there is wide inequality in the infrastructural development in the district. The study area has categorized the infrastructurally developed, moderately developed, poor developed and very poor developed zones covering three, two, five and two tahsil respectively. The main cause of regional disparities in the infrastructural development is that the Physiographic conditions of the whole district. In study area western part having mostly hilly zone, undulating topography so that less development in infrastructural facilities.

In the eastern part of district having tahsils Karveer, Hatkanangle, Shirol, Kagal and Gaganbavda is number of infrastructural facilities and well developed transport network, that's why these tahsils having well developed in infrastructurally as compared to other tahsils of Kolhapur district.



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