

# Kerala's Development Matrix

*An alternative analysis of inter district socio-economic variations in Kerala*

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## **Abstract**

*The level of development of different districts of Kerala was derived by analysing a collection of twenty five indicators. However, the usual approach of creating a composite index was not undertaken. Instead a new tool called the Development Matrix is devised, which enables the policy maker to visually identify areas where districts of the state perform poorly, individually and in relation to one another. The Development Matrix separates all the chosen indicators into different spaces based on existing theories of human motivation and development to portray the inter-district variation in Kerala.*

## **1. Introduction**

From the very beginning of the planning process in India, Planners have always been concerned with regional disparities in development. Policies and Plan documents are prepared and executed to enhance the quality of life of people by providing basic necessities as well as improving their social and economic well being, so as to reduce developmental gaps. Most studies on the issue of regional disparity, express disparities in terms of a limited number of social and economic indicators and hence are not comprehensive in nature. In order to understand regional disparities, it is therefore essential that we first identify "backwardness".

The idea of backwardness is inversely related to the level of development in a region. Development is multidimensional in character and requires several indicators to capture its intricate pathways. The challenge lies in selecting such indicators that reveal developmental patterns and if these patterns were to be summarised by an index method, the weight attached to each indicator while formulating the index. This issue has gained prominence in policy circles with the recent constituting of an Expert Committee under the Chairmanship of Dr Raghuram G. Rajan, to consider backwardness of the States under criteria such as per capita income and other human development indicators and for evolving a Composite Development Index of States.

Prior to the formulation of the HDI and other composite indices, GDP per capita was looked upon as a measure of development in a region. The change from a GDP per capita perspective to that of a Human Development perspective occurred as a result of the publication of the HDI in the Human development report, 1990. This changed the myopic

vision of most decision makers and encouraged them to look at measures beyond GDP per capita.

Kerala like any other region is beset with inter-regional disparities. This study avoids the composite index method due to the limitations arising from attaching of weights to each indicator.

Instead, this study focuses on the generation of a multi-coloured development matrix to visually portray inter-district socio-economic variation in Kerala and identify backwardness amongst the districts.

The need for creating a colour coded development matrix is, to shift the policy mentality of representing inter-district socio-economic variations through a simplistic composite index to a richer layout where indicators are ranked and the visual presentation helps understand the inter-district socio-economic variation in far greater detail.

## **2. Literature review**

The Planning Commission appointed a working group (Pande Committee) in 1968 to go into the question of identification of backward areas. The committee identified 238 districts of India as industrially backward on the basis of six indicators viz., total per capita Income, per capita income in industry and mining, number workers in registered factories, per capita annual consumption of electricity, length of surfaced roads in relation to population and railway mileage in relation to population and area.

The Chakravarty Working Group studied the problem of identification of backward districts using the three methods, viz., simple ranking, indices and principal component analysis and suggested fourteen indicators for the identification and classification of backward areas. It was also noted that, when there is a multiplicity of indicators, there is a statistical problem of constructing composite indicators.

Sankaranarayan and Karunakaran [1985], analysed and explained various aspects of the problems of Kerala economy by looking into the physical and demographic features of Kerala, income and employment, irrigation, fisheries, forests etc. The study also examines the role of industries in the economic development of the state.

Thomas George in his paper, Regional Disparities in Kerala's Economic Development [1988] analysed Kerala's economic development, district-wise by utilising 25 indicators of development. The indices are classified in to agriculture, industry, human resource development, transport, health, banking, housing and income.

K.P. Kannan [2000], examines the crucial role of education in alleviating poverty in Kerala and the importance of historical factors of poverty alleviation.

### 3. Data collection

This study is based on primary and secondary data. Primary data is limited to information gathered from experts. The secondary data necessary for analysis was collected from: (1) Economic Review (2010), State Planning Board, Thiruvananthapuram (2) Annual vital statistics report (2009), Directorate of Economics and Statistics, Thiruvananthapuram

#### 3.1. Choice of development indicators

To understand the level of development of a district, twenty five indicators (district-wise) were selected for generating a development matrix and analysing inter-district socio-economic variations in Kerala. Below in Table 3.1, a detail of the indicators used and the rationale for choosing them over other available indicators is given. Data for the twenty five indicators are available in the Appendix (Table 3.1, 3.2, 3.3).

Table 3.1: Indicators chosen for analysis and the rationale behind such choices		
S.no	INDICATORS	RATIONALE
1	Infant Mortality Rate (IMR) - 2009	Signifies the provision of healthcare for the new born
2	Maternal Mortality Rate (MMR) - 2009	Signifies the level of care provided to the mother's health
3	Still Birth Ratio (SBR) - 2009	Signifies the level of nutrition and care provided during pregnancy
4	% of District Population Covered by Water Supply Schemes (as on 31.03.2009-10)	Signifies access to clean water
5	Population for one doctor (Medical and Para-Medical Personnel) under DHS – (2010)	Signifies medical infrastructure capability
6	Leptospyrosis infection rate per one lakh population – (2010)	Leptospyrosis is commonly transmitted to humans by allowing water that has been contaminated by animal urine to come in contact with unhealed breaks in the skin, the eyes, or with the mucous membranes. This indicator signifies the level of concern for sanitation & hygiene in the district.
7	Drop out Ratio in Lower Primary Schools (2008-09)	Signifies the necessity for education, higher the drop-out rate, lower is seen the demand for education
8	Drop out Ratio in Upper Primary Schools (2008-09)	“ ”
9	Drop out Ratio in High Schools (2008-09)	“ ”
10	SSLC Results from 2010 (pass percentage)	Signifies the quality of education provided
11	Number of Arts & Science colleges as a percentage of Total Arts & Science colleges in Kerala (Govt. & Private Aided), 2010	Signifies the demand for higher education in the field of Art and Science
12	Number of Engineering colleges available as a percentage of Total Engineering colleges in Kerala (2010)	Signifies the demand for higher education in the field of engineering
13	District-wise suicide rate using mid-year population, 2008	Signifies the level of mental depression in the population
14	Road Accidents in Kerala per 1000 motor vehicles (2010)	Signifies the level of road safety

15	(%) of Primary Sector contribution to the GDDP (Gross Domestic District Product)) (2009-10)	Signifies the concentration of the primary sector in the economy
16	District-wise Per capita income (2009-10)	Signifies the average level of wealth each individual in a district has
17	District-wise (%) investment in SSI/MSME sector of the Total investment in Kerala's SSI/MSME sector (up to 2009-10)	Signifies the concern for improving the industrial sector of the district. Since the SSI/MSME units are the backbone for developing the industrial sector.
18	District-wise (%) commercial bank branches available of Total commercial bank branches in Kerala (March 2010)	Signifies the level of business and commercial transactions taking place in a district
19	District-wise (%) of Work Seekers who are Professional/Technical (As on 31.03.2010)	Shows the level of technical intensity in the economy
20	District-wise Total roads per 100 sq.km (district area in sq.km on 2001 census basis)	Shows the physical (road) level of connectivity within the district
21	District-wise (%) of motor vehicles of the total number of motor vehicles in Kerala (2009-10)	Shows the utilisation of road connectivity within a district and also the capacity to own a car
22	District-wise Area served by one Post Office (2009-10)	Signifies the access to the basic form of communication, pace of commerce and the demand for bulk ordering
23	District-wise (%) of working Telephone connections of Kerala (Telephone Network during 2009-10)	Signifies the level of telephone connectivity
24	District-wise (%) of Kerala's foreign tourist arrivals (2009)	Signifies the level of external interaction in the economy through tourism
25	District-wise (%) of Kerala's domestic tourist arrivals (2009)	Signifies the level of domestic interaction in the economy through tourism

#### 4. Method of analysis

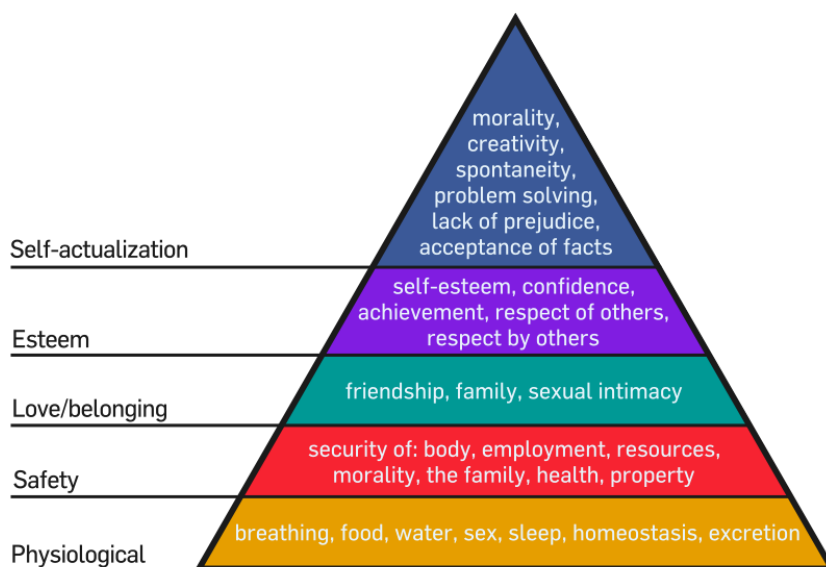
Almost all studies dealing with differentiating development patterns in a particular region follow a composite index method of evaluation i.e. after all the chosen indicators are collected and standardised, the standardised values are averaged with equal or varying weights, arithmetically or geometrically. The generation of such composite indexes have drawn severe criticism mainly due, in some cases, to the limited number of indicators involved and the assumptions behind their inclusion, and in other cases due to the arbitrariness with which the indicators have been weighted to generate such a composite index. While several statistical methods exist to aid the selection of weights, there are limitations regarding robustness. A poorly constructed composite index may induce simplistic and misleading policy agendas that may prove detrimental to regional development convergence.

To avoid such imperfections and controversies a tool called the development matrix is devised. This is done by first separating the chosen indicators into different spaces.

#### 4.1. The concept of “spaces”

In his 1943 paper, “A Theory of Human Motivation”, Abraham Maslow proposed the theory of hierarchy of needs. His theory is based on the fact that humans are need driven beings and fulfilment of needs is imperative for overall development. While Maslow used the terms Physiological, Safety, Belongingness and Love, Esteem, Self-Actualization and Self-Transcendence.

The theory of hierarchy of needs is often portrayed in the shape of a pyramid (Figure 1) to describe the pattern that human motivations generally move through. In his theory, Maslow identified five types of human needs arranged in a hierarchy of their importance and priority. He concluded that when one set of needs is satisfied, it ceases to be a motivating



factor. Thereafter, the next set of needs in the hierarchy order takes its place. These needs in hierarchy can be compared to a pyramid. At the lowest level, there will be first set of needs which can be described as basic needs and are universal in character. This will be followed by other sets of needs.

**Figure 1: Maslow’s hierarchy of needs**

Maslow's hierarchy of needs was further developed by Clayton Paul Alderfer by categorizing the hierarchy into his ERG (Existence, Relatedness and Growth) theory. The existence group is concerned with providing the basic material existence requirements of humans. They include the items that Maslow considered to be physiological and safety needs. The second group of needs is those of relatedness – the desire people have for maintaining important interpersonal relationships. These social and status desires require interaction with others if they are to be satisfied, and they align with Maslow's social need and the external component of Maslow's esteem classification. Finally, Alderfer isolates growth needs: an intrinsic desire for personal development. These include the intrinsic component from Maslow's esteem category and the characteristics included under self-actualization.

However, according to the school of Human Scale Development developed by Manfred Max-Neef and others (Antonio Elizalde and Martin Hopenhayn), Fundamental human

needs are seen as ontological (stemming from the condition of being human), are few, finite and classifiable (as distinct from the conventional notion of conventional economic "wants" that are infinite and insatiable). They are also constant through all human cultures and across historical time periods. What changes over time and between cultures is the strategies by which these needs are satisfied. Human needs can be understood as a system - i.e. they are interrelated and interactive. In this system, there is no hierarchy of needs (apart from the basic need for subsistence or survival) as postulated by Western psychologists such as Maslow, rather, simultaneity, complementarities and trade-offs are features of the process of needs satisfaction.

This school of Human Scale Development is described as "focused and based on the satisfaction of fundamental human needs, on the generation of growing levels of self-reliance, and on the construction of organic articulations of people with nature and technology, of global processes with local activity, of the personal with the social, of planning with autonomy, and of civil society with the state."

Max-Neef classifies the fundamental human needs as: subsistence, protection, affection, understanding, participation, leisure, creation, identity and freedom. Needs are also defined according to the existential categories of being, having, doing and interacting, and from these dimensions, a 36 cell matrix is developed. Recent research appears to validate the existence of universal human needs.

On the basis of the above existing theories of human motivation and development, the chosen indicators are categorised into three separate spaces: the basic space, the social space and the economic space.

The basic space represents those indicators that provide an environment for human survival. In this study the following indicators are taken to fall under the basic space category:

<b>1</b>	<b>Infant Mortality Rate (IMR) - 2009</b>
<b>2</b>	<b>Maternal Mortality Rate (MMR) - 2009</b>
<b>3</b>	<b>Still Birth Ratio (SBR) - 2009</b>
<b>4</b>	<b>% of District Population Covered by Water Supply Schemes (as on 31.03.2009-10)</b>
<b>5</b>	<b>Population for one doctor (Medical and Para-Medical Personnel) under DHS – (2010)</b>
<b>6</b>	<b>Leptospyrosis infection rate per one lakh population –(2010)</b>

The social space represents those that induce a sense of community and enables society to function effectively. In this study the following indicators come under the social space category:

<b>1</b>	<b>Drop out Ratio in Lower Primary Schools (2008-09)</b>
<b>2</b>	<b>Drop out Ratio in Upper Primary Schools (2008-09)</b>
<b>3</b>	<b>Drop out Ratio in High Schools (2008-09)</b>
<b>4</b>	<b>SSLC Results from 2010 (pass percentage)</b>

5	Number of Arts & Science colleges as a percentage of Total Arts & Science colleges in Kerala (Govt. & Private Aided), 2010
6	Number of Engineering colleges available as a percentage of Total Engineering colleges in Kerala (2010)
7	District-wise suicide rate using mid-year population, 2008
8	Road Accidents in Kerala per 1000 motor vehicles (2010)

The economic space consists of indicators that represent the level of economic interactions taking place in a district. In this study the following indicators come under the economic space category:

1	(%) of Primary Sector contribution to the GDDP (Gross Domestic District Product) (2009-10)
2	District-wise Per capita income (2009-10)
3	District-wise (%) investment in SSI/MSME sector of the Total investment in Kerala's SSI/MSME sector (up to 2009-10)
4	District-wise (%) commercial bank branches available of Total commercial bank branches in Kerala (March 2010)
5	District-wise (%) of Work Seekers who are Professional/Technical (As on 31.03.2010)
6	District-wise Total roads per 100 sq.km (district area in sq.km on 2001 census basis)
7	District-wise (%) of motor vehicles of the total number of motor vehicles in Kerala (2009-10)
8	District-wise Area served by one Post Office (2009-10)
9	District-wise (%) of working Telephone connections of Kerala (Telephone Network during 2009-10)
10	District-wise (%) of Kerala's foreign tourist arrivals (2009)
11	District-wise (%) of Kerala's domestic tourist arrivals (2009)

#### 4.2. Creating the colour coded Kerala Development matrix

After the data collection and the separation of indicators into the three different spaces are done, the indicators are ranked. The ranking is done in such a manner that; the district which has, for an indicator, a numerical value that represents the most developed condition of this indicator among the fourteen districts, is given rank number 1 and districts having values that reflect a lower developed status than this with regard to the indicator, occupy a lower rank. Such a ranking process is completed district-wise for each indicator.

Once the ranking is completed a 25x14 matrix is laid out with rows showing the selected indicators and the columns showing the districts, see Appendix (Table 4.1). The ranks 1, 2 and 3 are coloured as blue and display those districts that have a developed status with regard to the indicator in the row. The ranks 12, 13 and 14 are coloured red and represent those districts that are performing poorly for the respective indicator. Ranks 7 and 8 are coloured yellow and represent districts that have reached the half-way mark with regard to the development status of the indicator.

#### 4.3. Space wise analysis

Now that the colour coded development matrix is created we can use this tool to analyse inter-district socio economic variation across the three spaces.

#### 4.3.1. Basic space analysis

Thiruvananthapuram performs poorly for the first three indicators of the basic space, viz. Infant mortality rate, Maternal mortality rate and Still birth ratio, a reflection perhaps of the level of inequality in access to medical care for the mother and child. What is most interesting is the performance of Kozhikode in the basic space. While Kozhikode and Thiruvananthapuram seems to do fairly well in the other spaces, they are found wanting in the basic space – having four of the six indicators red coloured.

#### 4.3.2. Social space analysis

In the social space, Wayanad and Idukki have problems. Wayanad and Idukki each have seven of the eight indicators red coloured. In the case of Mallapuram, while the drop out ratios are not too bad, the pass percentage is low indicating perhaps that the quality of education provided in schools are not at par with the levels available in the other districts. The drop out ratio for LPS in Thiruvananthapuram is high and this pattern is seen in UPS also, however it significantly reduced in HPS, indicating that those students that stay within the system beyond UPS continue until they finish their schooling years. It is interesting to note that the SSLC pass percentage for Thiruvananthapuram is red coloured too, considering that Thiruvananthapuram is the capital city and access to quality education would not be seen as a problem. The districts – Alappuzha, Ernakulam, Kollam and Kottayam have performed well in the social space having three or more blue coloured indicators.

#### 4.3.3. Economic space analysis

Here, Wayanad, Kasaragod and Idukki are low in almost all the indicators. Both Wayanad and Kasaragod have each, nine of the eleven indicators red coloured while Idukki has six of the eleven indicators red coloured. Thiruvananthapuram, Ernakulam and Thrissur having ten, nine and six blue coloured indicators respectively are the best performers in this space indicating that increased urbanisation and concentration of industries result in improvements in the economic space.

#### 4.3.4. Total rank and weighted rank

While a detailed space based analysis was done, a simple total rank analysis is also done to understand the effectiveness of policy analysis using a development matrix vis-à-vis a simple composite rank method. First a total rank is generated for each district by summing up all the indicator ranks of each district. The districts are then ranked based on the total rank generated.

The ranked table is given below:

RANK	DISTRICTS
1	Ernakulam
2	Kottayam



3	Alappuzha
4	Thrissur
5	Thiruvananthapuram
6	Kollam
7	Kannur
8	Kozhikode
9	Pathanamthitta
10	Malappuram
11	Palakkad
12	Idukki
13	Kasaragod
14	Wayanad

However, while summing up the indicator ranks district wise, the weights attached to each indicator was equal. So a weighted ranking is also done by the formula

$$TR_1 = 0.25*B + 0.35*S + 0.4*E$$

TR<sub>1</sub> = Total weighted rank

B = sum of indicator ranks in the basic space

S = sum of indicator ranks in the social space

E = sum of indicator ranks in the economic space

The districts are then ranked based on the weighted total rank generated. The ranked table based on the weighted total rank is given below:

RANK	DISTRICTS
1	Ernakulam
2	Kottayam
3	Thiruvananthapuram
4	Thrissur
5	Alappuzha
6	Kozhikode
7	Kollam
8	Kannur
9	Pathanamthitta
10	Malappuram
11	Palakkad
12	Idukki
13	Kasaragod
14	Wayanad

## Conclusion

While several methods exist to depict the level of development, the colour coded development matrix is the richest in content to analyse inter-district socio-economic variation. While there are limitations with regard to the indicators chosen, this can be rectified by collecting more robust indicators by the implementation of the Kerala State Strategic Statistical Plan (KSSP). The collected indicators can be then be divided into the three spaces: basic, social and economic.

If the Kerala development matrix were to be published every year, it would put pressure on key agencies to deliver in areas hitherto ignored. It would also change the policy stances among decision makers, just like how the publishing of HDI resulted in a shift in perception regarding development. Since the needs of districts are different from one another, only a development matrix format will help us realise where each district lags and will help in devising such policy that will reduce regional disparities.

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# APPENDIX

Table 3.1: Data for the basic space indicators						
DISTRICTS	Infant Mortality Rate	Maternal Mortality Rate	Still Birth Ratio	Population Covered by Water Supply Scheme	Population for one doctor (Medical and Para-Medical Personnel)	Leptosyrosis infection rate per one lakh population -2010
Alappuzha	4	0.08	6.27	81.13	8014	4.52
Ernakulam	9.1	0.53	6.37	96.19	9164	2.03
Idukki	5.07	0.06	1.22	60.9	8230	3.25
Kannur	5.79	0.06	6.95	63.85	7219	1.20
Kasaragod	3.57	0.24	6.38	74.29	8006	4.09
Kollam	2.69	0.13	2.71	69.21	10516	0.76
Kottayam	5.83	0.03	6.98	64.35	7979	2.23
Kozhikode	18.5	0.14	9.24	52.94	11483	0.97
Malappuram	5.86	0.19	4.94	59.15	13611	0.44
Palakkad	4.07	0.22	4.31	69.15	9727	0.71
Pathanamthitta	6.02	0.11	3.22	74.62	5911	0.55
Thiruvananthapuram	14.52	0.35	9.03	79.16	7997	6.45
Thrissur	12.53	0.15	5.35	89.47	8215	0.66
Wayanad	10.18	0.06	7.66	87.7	7701	6.14





<b>DISTRICTS</b>	<b>% Drop out in Lower Primary Schools</b>	<b>% Drop out in Upper Primary Schools</b>	<b>% Drop out in Schools (HS)</b>	<b>SSLC pass percentage</b>	<b>Number of Arts &amp; Science colleges as a percentage of Total Arts &amp; Science colleges in Kerala</b>	<b>Number of Engineering colleges available as a percentage of Total Engineering colleges in Kerala</b>	<b>District-wise suicide rate using mid-year population</b>	<b>Road Accidents in Kerala per 1000 motor vehicles</b>
Alappuzha	0.11	0.12	0.51	91.96	6.84	7.56	2.15	6.02
Ernakulam	0.44	0.22	0.68	93.68	13.16	15.13	2.43	4.34
Idukki	1.04	0.83	1.94	93.17	4.21	4.20	3.42	8.95
Kannur	0.31	0.37	2.26	96.88	5.79	4.20	2.34	4.39
Kasaragod	0.61	0.53	1.5	93.01	2.63	1.68	1.88	4.61
Kollam	0.25	0.27	0.56	87.65	6.84	10.92	3.60	5.12
Kottayam	0.29	0.14	0.88	96.37	11.58	6.72	2.23	4.50
Kozhikode	0.33	0.27	1.01	95.03	7.37	4.20	1.95	5.37
Malappuram	0.33	0.35	1.15	86.91	5.79	5.04	1.04	4.75
Palakkad	0.63	0.75	1.9	83.04	6.84	6.72	2.89	4.71
Pathanamthitta	0.36	0.17	0.68	89.89	4.74	5.04	2.46	4.64
Thiruvananthapuram	0.73	0.63	0.74	86.13	10.53	17.65	3.41	4.46
Thrissur	0.13	0.3	1.34	92.76	10.53	10.08	2.68	5.26
Wayanad	0.9	1.27	2.73	94.46	3.16	0.84	3.84	7.15

**Table 3.3: Data for the economic space indicators**

DISTRICTS	(%) of Primary Sector contribution to the GDDP (Gross Domestic District Product)	District-wise Per capita income	District-wise (%) investment in SSI/MSME sector of the Total investment in Kerala's SSI/MSME sector	District-wise (%) commercial bank branches available of Total commercial bank branches in Kerala	District-wise (%) of Work Seekers who are Professional/Technical	District-wise Total roads per 100 sq.km	District-wise (%) of motor vehicles of the total number of motor vehicles in Kerala	District-wise Area served by one Post Office	District-wise (%) of working Telephone connections of Kerala	District-wise (%) of Kerala's foreign tourist arrivals	District-wise (%) of Kerala's domestic tourist arrivals
Alappuzha	9.46	53535	7.33	6.27	4.18	85.10	6.94	4.71	6.05	6.01	2.08
Ernakulam	7.69	79553	19.87	15.76	5.89	70.16	16.50	7.76	11.65	42.95	22.98
Idukki	24.70	51367	3.61	2.72	2.76	53.61	1.69	14.82	3.29	6.85	5.43
Kannur	11.11	50623	4.90	5.91	4.60	57.24	5.32	7.8	8.10	0.75	5.32
Kasaragod	21.45	44588	2.21	3.34	3.25	45.96	2.40	8.51	4.07	0.22	1.78
Kollam	14.73	48795	6.81	5.80	4.56	74.96	7.50	6.82	7.78	1.44	2.34
Kottayam	16.25	61668	9.48	7.83	4.47	136.94	7.49	5.43	8.10	4.42	3.47
Kozhikode	9.92	50389	8.27	7.03	3.99	55.69	8.24	5.94	8.55	1.35	7.26
Malappuram	13.07	33783	5.50	7.19	2.57	50.60	8.10	8.1	8.36	2.42	4.04
Palakkad	13.44	49825	8.31	6.91	3.46	35.36	6.45	9.84	6.60	0.21	4.21
Pathanamthitta	16.29	56994	2.68	6.88	4.27	52.56	4.22	8.31	4.74	0.11	0.96
Thiruvananthapuram	8.33	57563	8.34	10.95	3.94	75.38	13.37	5.25	10.98	31.69	13.58
Thrissur	8.56	56087	11.38	11.36	3.22	54.93	10.59	6.23	9.29	0.62	21.91
Wayanad	22.88	38341	1.30	2.06	2.45	35.96	1.19	12.3	1.87	0.96	4.66

**TABLE 4.1: KERALA DEVELOPMENT MATRIX**

SPACES	INDICATORS	Alappuzha	Ernakulam	Idukki	Kannur	Kasaragod	Kollam	Kottayam	Kozhikode	Malappuram	Palakkad	Pathanamthitta	Thiruvananthapuram	Thrissur	Wayanad
BASIC SPACE INDICATORS	Infant Mortality rate	3	10	5	6	2	1	7	14	8	4	9	13	12	11
	Maternal Mortality Rate	5	14	2	3	12	7	1	8	10	11	6	13	9	4
	Still Birth Ratio	7	8	1	10	9	2	11	14	5	4	3	13	6	12
	% of District Population Covered by Water Supply Schemes	4	1	12	11	7	8	10	14	13	9	6	5	2	3
	Population for one doctor (Medical and Para-Medical Personnel under DHS)	7	10	9	2	6	12	4	13	14	11	1	5	8	3
	Leptospyrosis infection rate per one lakh of mid-year population	12	8	10	7	11	5	9	6	1	4	2	14	3	13
SOCIAL SPACE INDICATORS	Drop out Ratio in Lower Primary Schools	1	9	14	5	10	3	4	6	7	11	8	12	2	13
	Drop out Ratio in Upper Primary Schools	1	4	13	9	10	5	2	6	8	12	3	11	7	14
	Drop out Ratio in High Schools	1	3	12	13	10	2	6	7	8	11	4	5	9	14
	SSLC pass percentage	9	5	6	1	7	11	2	3	12	14	10	13	8	4
	Number of Arts & Science colleges as a percentage of Total Arts & Science colleges in Kerala	6	1	12	9	14	7	2	5	10	8	11	3	4	13
	Number of Engineering colleges available as a percentage of Total Engineering colleges in Kerala	5	2	12	11	13	3	6	10	8	7	9	1	4	14
	District-wise suicide rate using mid-year population	4	7	12	6	2	13	5	3	1	10	8	11	9	14
	Road Accidents in Kerala per 1000 motor vehicles	12	1	14	2	5	9	4	11	8	7	6	3	10	13
ECONOMIC SPACE INDICATORS	(%) of Primary Sector contribution to the GDDP (Gross Domestic District Product)	4	1	14	6	12	9	10	5	7	8	11	2	3	13
	District-wise Per capita income	6	1	7	8	12	11	2	9	14	10	4	3	5	13
	District-wise (%) investment in SSI/MSME sector of the Total investment in Kerala's SSI/MSME sector	7	1	11	10	13	8	3	6	9	5	12	4	2	14
	District-wise (%) commercial bank branches available of Total commercial bank branches in Kerala	9	1	13	10	12	11	4	6	5	7	8	3	2	14
	District-wise (%) of Work Seekers who are Professional/Technical	6	1	12	2	10	3	4	7	13	9	5	8	11	14
	District-wise Total roads per 100 sq.km	2	5	9	6	12	4	1	7	11	14	10	3	8	13
	District-wise (%) of motor vehicles of the total number of motor vehicles in Kerala	8	1	13	10	12	6	7	4	5	9	11	2	3	14
	District-wise Area served by one Post Office	1	7	14	8	11	6	3	4	9	12	10	2	5	13
	District-wise (%) of working Telephone connections of Kerala	10	1	13	6	12	8	7	4	5	9	11	2	3	14
	District-wise (%) of Kerala's foreign tourist arrivals	4	1	3	10	12	7	5	8	6	13	14	2	11	9
	District-wise (%) of Kerala's domestic tourist arrivals	12	1	5	6	13	11	10	4	9	8	14	3	2	7

<b>Colour code</b>	 Top 3 performing districts of an indicator	 Middle 2 performing districts of an indicator	 Otherwise performing districts of an indicator	 Worst 3 performing districts of an indicator
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## Disclaimer

State Planning Board for the first time, has introduced a scheme for involving Post Graduate students from reputed Universities / Institutions in the process of data collection and analysis of specific areas/subjects pertinent to the development of the economy and preparation of research notes on those areas. In the first phase of introduction of this programme, five Post Graduate students from Centre for Development Studies, Thiruvananthapuram were selected as interns during their summer break for undertaking specific research studies on selected subjects from 2.5.13 to 15.6.13. A discussion was held on the study reports by the interns and these reports were enriched to a great extent by the points factored in these discussions. The study reports as such are uploaded for an open discussion. ***Any views or opinions presented in these reports are solely those of the interns and do not necessarily represent those of Government /State Planning Board.***