

Research Paper

# Disparities in Socio-economic Development in Kerala: A Disaggregated Analysis

V.P. Preethi\*, V.A. Thorat and J.S. Dhekale

Department of Agricultural Economics, College of Agriculture, DBSKKV, Dapoli, Maharashtra, India

\*Corresponding author: luvupremji.123@gmail.com (ORCID ID: 0000-0001-6810-1295)

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## ABSTRACT

The socio-economic development of each district is crucial for the overall development of a State which improves the quality of life of people. In this context, this paper examines the level of development of different districts in Kerala with the help of Weighted Mean Development Index (WMDI). The study covered all fourteen districts of the state. The level of development was examined separately for population, health, education, transportation and communication, industries, agriculture, animal husbandry, tourism, banking, crime and overall socio-economic development using district-level data for the year 2019-20 on forty-five socio-economic indicators including ten major sectors. Findings show that the composite indices of overall socio-economic development ranged between 0.21 and 0.70 with the district of Ernakulam ranked first and the least ranked district was Pathanamthitta. Ernakulam and Thiruvananthapuram were the most developed districts whereas, Kasargode, Wayanad and Pathanamthitta were the least developed. The level of development in different districts of the state has shown wide disparities. It would be useful to investigate and evaluate the level of development at a lower level, such as Tehsil or block level, in order to make location-specific recommendations, as most low-developed districts have areas that are better developed than others.

## HIGHLIGHTS

- ① Wide disparities in terms of socio-economic development were observed between the districts of Kerala.
- ② The variation in the level of development in education, agriculture, animal husbandry, tourism, banking and crime is found to be of a higher order resulting in significant discrepancies between the districts.

**Keywords:** Composite Index, Regional disparities, Inter-district Variation, Development indicators

Socio-economic development of a region has been considered as a process of human progress which improves the quality of life of people (Narain *et al.* 2007; Mishra, 2017). Improper socio-economic development limits the growth and utilization of human resources and their capabilities posing severe challenges to the overall progress of the society (Kesarwani and Yadav, 2014). As a result, studies on the identification of indicators that might quantify a region's socio-economic growth have continued to expand the development literature. Although, increase in per capita output

or income have long been regarded as essential indices of economic progress (Bhattacharya and Sakthivel, 2004), they are just a facilitator of socio-economic development and by no means sufficient (Porter *et al.* 2013; Gill and Taylor, 2013). Socio-economic progress implies more than simply economic growth. It is a multi-dimensional process (Ohlan, 2013) that entails enhancing people's living

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standards as well as improving their education, health and opportunities (World Bank, 1992; Sen, 2003; Alkire, 2008; Herguner, 2012; Dreze and Sen, 2013; Mishra, 2017). Per capita income, population characteristics, degree of urbanisation, occupational structure and level of development of various sectors such as agriculture, industries, health, education, infrastructure, tourism, animal husbandry and banking are all important aspects of socio-economic development. As a result, the pattern of socio-economic development can be better explored in terms of a composite index that incorporates key aspects of socio-economic progress while, also articulating regional difference (Kundu and Varghese, 2010; Mishra, 2017).

Kerala has been a key state, contributing to the progress and development of the nation. It has been and remains the most important example in independent India of the power of public action to improve the well-being of the people and to transform social, political and cultural conditions in a state. It is a relatively rich Indian state (GOK, 2020). The state of Kerala was formed in 1956 by merging three states, Travancore, Cochin and Malabar district of Madras Presidency. These three regions were at different levels of development at the time of the formation of the state with Travancore being the most developed followed by Cochin, whereas the most backward was Malabar region. If we look at literacy level, Travancore, Cochin and Malabar were more or less on similar position at the beginning of twentieth century. However, the disparities widened in the next four decades and Malabar region now lags far behind Cochin and Travancore (Chakraborty, 2009; Ayyoob, 2013).

Kerala is divided into fourteen districts. Eight of these districts have actual per capita earnings that are lower than that of the state average. However, even in Kerala's low-income districts, actual per capita income is higher than in many low and middle income states. One of the key highlights of Kerala's development experience, according to the state's human development report (2005), has been the quick reduction in intra-state disparities and gender differentials in most indices of human development across all social groups. Kerala's success story of high human development index with a low per capita income is widely acknowledged as the "Kerala Model of Development". In addition,

inequality in the state is also on the rise, owing to the state's recent growth peak.

The study of Kerala's socio-economic development is important for a number of reasons. Agriculture used to play a significant role in Kerala's economic life, but its share has slowly declined over time. This sector has undergone major structural changes as evidenced by a decrease in its share in Gross State Domestic Product (GSDP), reflecting a transition away from the agrarian economy (GOK, 2020). Agricultural performance varies from year to year due to natural occurrences as well as price volatility. The agricultural sector was the hardest devastated by the natural disasters that struck the state in the form of floods and landslides during the year 2018 and 2019. Furthermore, because the service sector together with the secondary sector contributes the most to Kerala's economy, development in terms of entire socio-economic sectors makes sense. Regional dimension of these developments and its sustainability necessitate the exploration as well as the development of various sectors and public policy. Since, there is a growing consensus in the country regarding the necessity for micro-level planning, it would be quite interesting and instructive to investigate the level of development at the district level. Understanding the level of development at the district level will aid in determining where a certain district stands in relation to others. As a result, it is necessary to quantify the status of development at the district level in terms of several sectors as well as overall development.

## MATERIALS AND METHODS

The study is based on time series data on population, education, health, agriculture, tourism, transport and communication, banking, crime, animal husbandry and industries which were collected from various government publications such as economic review of the Kerala State Planning Board (KSPB), Thiruvananthapuram, Census of India, Annual vital statistics of Kerala *etc.*, for the year 2019-20.

## ANALYTICAL METHOD

### Weighted Mean Development Index (WMDI)

Different kinds of development indicators combined together affect the per capita income and output of

the economy, which were mutually interdependent in nature. Hence, it is not appropriate to take one of the indicators and analyse its effect on growth of the economy. There is a need to compute a “Composite Index of Development” by integrating various components in a suitable manner. The preceding description shows that there is no unanimity regarding the methodologies used to compute the development index. Here, an attempt is made to devise a method quite analogous to the one proposed by Morris and Liser (1977) and used by Mukherjee (1980), Iyengar and Sudarshan (1982). Under this procedure development index is computed as a weighted average of various components of development indicators from a multivariate data set where the weights vary inversely to the variation of the components. The detailed methodology runs as follow:

Let  $X_{id}$  represent the value of the  $i^{\text{th}}$  development indicator in the  $d^{\text{th}}$  district of a state ( $i = 1, 2, 3, \dots, n; d = 1, 2, 3, \dots, m$ ). Let us write,

$$y_{id} = \frac{X_{id} - \text{Min } X_{id}}{\text{Max } X_{id} - \text{Min } X_{id}} \quad \dots(1)$$

Where,  $\text{Min } X_{id}$  and  $\text{Max } X_{id}$  are the minimum and maximum of “ $X_{11}, X_{12}, X_{13}, \dots, X_{1n}$ ” respectively. However, if  $X_{id}$  is negatively associated with development, equation (1) can be written as:

$$y_{id} = \frac{\text{Max } X_{id} - X_{id}}{\text{Max } X_{id} - \text{Min } X_{id}} \quad \dots(2)$$

Obviously, the scaled values,  $Y_{id}$ , vary from zero to one. From the matrix of normalized indices,  $Y = \{(Y_{id})\}$ , the weighted index of the overall development for the various regions or districts was computed using the formula suggested by Iyengar and Sudarshan (1982),

$$\bar{Y}_{wi} = W_1 y_{1d} + W_2 y_{2d} + W_3 y_{3d} \dots + W_m y_{md} \quad \dots(3)$$

Where, ( $0 < W_1 < 1$  and  $W_1 + W_2 + \dots + W_m = 1$ ) are the weights attached with the various sectoral indices and  $W_i$  is computed as:

$$W_i = \frac{K}{\sqrt{\text{Var}(y_i)}} \quad \dots(4)$$

Where,

$$K = \left[ \sum_{i=1}^m \frac{1}{\sqrt{\text{Var } y_i}} \right]^{-1} \quad \dots(5)$$

Since,  $0 \leq Y_{id} \leq 1$ , hence, the weighted mean, represents the overall development of a region or district which also lies between 0 and 1 and increase or decrease in the direction of the development i.e. lower values imply lesser development and higher values imply higher development.

A simple ranking of districts based on the values of the weighted index was then used for classification of the districts on the basis of their level of development as low developed, developing, moderately developed and highly developed using the following criteria:

- $\bar{Y}w_i \leq \text{Mean} - \text{SD}$  : Low Developed
- $\text{Mean} - \text{SD} < \bar{Y}w_i < \text{Mean}$  : Developing
- $\text{Mean} < \bar{Y}w_i < \text{Mean} + \text{SD}$  : Moderately developed
- $\bar{Y}w_i \geq \text{Mean} + \text{SD}$  : Highly Developed

### Development indicators

Total population	Total number of registered working factories
Male population	Industrial employment
Female population	Small Scale Industries (SSI)
SC population	Employment in Small Scale Industries (SSI)
ST population	Medium and Large Scale Industries (MLSI)
Urban population	Area under food crops
Rural population	Area under non-food crops
Literate population	Net area irrigated
Illiterate population	Gross area irrigated
Total worker population	Milk capacity of Kerala Co-operative Milk Marketing Federation (KCMMF)
Total non-worker population	Milk procurement of KCMMF
Population density per sq. km.	Milk sale of KCMMF
Birth rate	Number of branches of scheduled commercial bank
Death rate	Deposit
Infant Mortality Rate	Credit
Maternal Mortality Rate	CD ratio
Total no. of Hospitals	Credit disbursement to primary sector
Beds per lakh population	Credit disbursement to secondary sector

Total no. of schools	Credit disbursement to tertiary sector
Total no. of higher secondary schools	Incidence of crime reported
Road length	Domestic Tourists Arrival (DTA)
Total number of motor vehicles	Foreign Tourists Arrival (FTA)
Total number of post offices	

## RESULTS AND DISCUSSION

The composite indices of development in respect of population, health, education, transport and communication, industries, agriculture, animal husbandry, tourism, banking, crime and overall socio-economic development have been worked out for different districts of the state and presented in Table 1. The composite indices varied from 0.45 to 0.63 in population with Ernakulam (0.63) ranked first followed by Thrissur (0.63) and Kozhikode (0.61) and Wayanad (0.45) ranked last following Palakkad (0.47) and Idukki (0.52). Even though only Wayanad had a lower population out of these districts, the difference in their rankings was due to the fact that the direction of impact of the selected population indicators on development was taken into account. The composite indices of development varied from 0.52 to 0.79 in health sector with the district of Malappuram ranked first and the district of Pathanamthitta ranked last. In educational sector, the composite indices varied from 0.00 to 1.00 with the district of Malappuram ranked first and the district of Wayanad ranked last. In case of transport and communication, it varied from 0.00 to 0.85 with the district of Ernakulam ranked first and the district of Wayanad ranked last. The composite indices varied from 0.03 to 0.56 in industrial sector with the district of Ernakulam ranked first and the district of Kasargode ranked last and from 0.00 to 0.79 in agricultural sector with the district of Palakkad ranked first and the district of Pathanamthitta ranked last while, in animal husbandry it ranged between 0.00 to 0.88 with the district of Ernakulam ranked first and the district of Pathanamthitta ranked last. In case of tourism it varied from 0.00 to 1.00 with the district of Ernakulam ranked first and the district of Pathanamthitta ranked last and from 0.12 to 0.86 in banking sector with the district of Ernakulam

ranked first and the district of Pathanamthitta ranked last while, from 0.00 to 1.00 in crime sector with the district of Thiruvananthapuram ranked first and the district of Kasargode ranked last. It is important to note that total crime incidence was considered as a positive variable in this method which implies that high value of index indicates high level of development.

In case of overall socio-economic development, the composite indices varied from 0.21 to 0.70 with the district of Ernakulam occupied the first position and the district of Pathanamthitta on the last place. It is important to note that the district of Wayanad also had the identical composite index of Pathanamthitta. According to the study by Narain *et al.* (1994), the district of Wayanad ranked last in terms of overall socio-economic development while, the district of Thrissur ranked first surpassing the district of Ernakulam. Later, Narain *et al.* (2005) again conducted a similar study in Kerala and found that the district of Thrissur and Wayanad remained highly and low developed, respectively in 2001-02. The district of Pathanamthitta was on 7<sup>th</sup> position falling into the category of moderately developed. This discrepancy could be explained by the fact that the study of Narain *et al.* (1994) and (2005) confined to the variables comes under only agriculture, industries, infrastructural facilities and overall socio-economic growth for the year, 1991-92 and 2001-02. It also reveals a significant competition among the districts over a period of time in terms of development.

Classification of districts based on composite indices is presented in Table 2. In terms of population, the districts of Ernakulam, Thrissur and Kozhikode are highly developed while, the districts of Palakkad and Wayanad are low developed. The districts of Kollam, Malappuram, Alappuzha and Kannur are moderately developed and the districts of Thiruvananthapuram, Kottayam, Kasargode, Pathanamthitta and Idukki are developing. The districts of Malappuram, Wayanad and Thrissur are highly developed and the districts of Kozhikode and Pathanamthitta are low developed in terms health. The moderately developed districts in this sector are Alappuzha, Palakkad, Thiruvananthapuram and Kottayam while, developing districts are Kollam, Idukki, Kasargode, Ernakulam and Kannur. In educational sector, the districts of Malappuram is

**Table 1:** Weighted Mean Development Index (WMDI) of different districts of Kerala for 2019-20

District	Population		Health		Education		Transport and communication		Industries		Agriculture		Animal husbandry		Tourism		Banking		Crime		Over all Socio-economic sectors	
	CI	Rank	CI	Rank	CI	Rank	CI	Rank	CI	Rank	CI	Rank	CI	Rank	CI	Rank	CI	Rank	CI	Rank	CI	Rank
Ernakulam	0.63	1	0.62	11	0.67	5	0.85	1	0.56	1	0.18	8	0.88	1	1.00	1	0.86	1	0.77	2	0.70	1
Trivandrum*	0.55	8	0.67	6	0.57	6	0.75	2	0.32	6	0.13	12	0.43	4	0.66	2	0.47	3	1.00	1	0.56	2
Thrissur	0.63	2	0.74	3	0.68	4	0.70	5	0.41	5	0.34	5	0.19	9	0.32	3	0.61	2	0.40	6	0.50	3
Palakkad	0.47	13	0.71	5	0.53	7	0.60	7	0.51	2	0.79	1	0.72	2	0.04	12	0.30	7	0.07	11	0.47	4
Kollam	0.58	4	0.65	8	0.45	8	0.52	8	0.48	3	0.06	13	0.24	8	0.05	11	0.38	5	0.52	3	0.39	7
Kannur	0.56	7	0.61	12	0.68	3	0.52	9	0.27	7	0.36	4	0.18	10	0.10	9	0.24	10	0.18	9	0.37	10
Kozhikode	0.61	3	0.59	13	0.72	2	0.65	6	0.24	8	0.15	10	0.51	3	0.16	6	0.38	4	0.22	7	0.42	5
Malappuram	0.57	5	0.79	1	1.00	1	0.70	4	0.16	10	0.33	6	0.08	13	0.08	10	0.26	8	0.05	12	0.40	6
Kottayam	0.55	9	0.66	7	0.44	9	0.71	3	0.21	9	0.24	7	0.09	11	0.10	8	0.32	6	0.46	5	0.38	9
Alappuzha	0.57	6	0.73	4	0.35	10	0.34	12	0.44	4	0.14	11	0.42	5	0.17	5	0.24	9	0.47	4	0.39	8
Idukki	0.52	12	0.65	9	0.13	13	0.41	10	0.05	13	0.62	2	0.26	7	0.28	4	0.21	11	0.09	10	0.32	11
Pathanamthitta	0.52	11	0.52	14	0.29	11	0.36	11	0.06	12	0.00	14	0.00	14	0.00	14	0.12	14	0.20	8	0.21	14
Kasargode	0.53	10	0.65	10	0.23	12	0.17	13	0.03	14	0.37	3	0.09	12	0.02	13	0.14	13	0.00	14	0.22	12
Wayand	0.45	14	0.75	2	0.00	14	0.00	14	0.06	11	0.18	9	0.36	6	0.13	7	0.18	12	0.01	13	0.21	13

**Table 2:** Classification of districts based on Weighted Mean Development Index

Sectors	Highly developed	Moderately developed	Developing	Low developed
Health	Malappuram, Wayanad, Thrissur	Alappuzha, Palakkad, Thiruvananthapuram, Kottayam	Kollam, Idukki, Kasargode, Ernakulam, Kannur	Kozhikode, Pathanamthitta
Education	Malappuram	Kozhikode, Kannur, Thrissur, Ernakulam, Thiruvananthapuram, Palakkad	Kollam, Kottayam, Alappuzha, Pathanamthitta, Kasargode	Idukki, Wayanad
Transport and communication	Ernakulam,	Thiruvananthapuram, Kottayam, Malappuram, Thrissur, Kozhikode, Palakkad	Kollam, Kannur, Idukki, Pathanamthitta, Alappuzha	Kasargode, Wayanad
Industries	Ernakulam, Palakkad, Kollam	Alappuzha, Thrissur, Thiruvananthapuram	Kannur, Kozhikode, Kottayam, Malappuram	Pathanamthitta, Idukki, Wayanad, Kasargode
Agriculture	Palakkad, Idukki	Kasargode, Kannur, Thrissur, Malappuram	Kottayam, Ernakulam, Wayanad, Kozhikode, Alappuzha, Thiruvananthapuram	Kollam, Pathanamthitta
Animal Husbandry	Ernakulam Palakkad,	Kozhikode, Thiruvananthapuram, Idukki, Alappuzha, Wayanad, Kollam	Thrissur, Kannur, Kottayam, Kasargode, Malappuram	Pathanamthitta
Tourism	Ernakulam, Thiruvananthapuram	Thrissur, Idukki	Alappuzha, Kozhikode, Wayanad, Kottayam, Kannur, Malappuram,,	Palakkad, Kollam, Kasargode, Pathanamthitta
Banking	Ernakulam, Thrissur	Thiruvananthapuram, Kozhikode, Kollam	Kottayam, Palakkad, Malappuram, Alappuzha, Kannur, Idukki, Wayanad	Kasargode, Pathanamthitta
Crime	Thiruvananthapuram, Ernakulam	Kollam, Alappuzha, Kottayam, Thrissur	Kozhikode, Pathanamthitta, Kannur, Idukki, Palakkad, Malappuram	Wayanad, Kasargode
Overall socio-economic development	Ernakulam, Thiruvananthapuram, Thrissur	Palakkad, Kozhikode	Malappuram, Kollam, Alappuzha, Kottayam, Kannur, Idukki	Kasargode, Wayanad, Pathanamthitta

highly developed and the districts of Idukki and Wayanad are low developed. There are six districts found to be under moderately developed category such as Kozhikode, Kannur, Thrissur, Ernakulam, Thiruvananthapuram and Palakkad and five districts are found to be under developing category such as Kollam, Kottayam, Alappuzha, Pathanamthitta and Kasargode. However, it is important to note that the district of Malappuram is highly developed in terms of both health and educational sectors.

The districts of Ernakulam and Thiruvananthapuram are highly developed in terms of tourism and crime, the districts of Ernakulam is highly developed in terms of transport and communication while, the districts of Ernakulam and Palakkad are highly developed in terms of animal husbandry. In terms of banking, the districts of Ernakulam and Thrissur are found to be highly developed. The low developed districts are Wayanad and Kasargode in terms of transport and communication, the district of Pathanamthitta in terms of animal husbandry, Kollam, Palakkad, Kasargode and Pathanamthitta in terms of tourism and Wayanad and Kasargode in terms of crime. The districts of Ernakulam, Palakkad and Kollam are highly developed in industrial sector whereas, the districts of Kasargode, Idukki, Pathanamthitta and Wayanad are low developed.

In agricultural sector, the district of Palakkad is highly developed while, the district of Pathanamthitta and Kollam are low developed. This result is in confirmation with the study carried out by Ayyoob *et al.* (2013) which looked at the level of agricultural development of districts of Kerala from 2003-04 to 2008-09. These findings, however, contradicted the findings of Narain *et al.* (1994), who found that the district of Kollam was highly developed in terms of agriculture while, the district of Wayanad was low developed. Mishra (2002) analysed variations in the level of agricultural development in Kerala and found that the district of Ernakulam was highly developed and Wayanad and Palakkad were low developed during 1985-86 and 1990-01. The district of Ernakulam continued to be so during 1995-96 but Kasargode overtook Wayanad for last position. However, the study showed that the district of Palakkad had substantial growth with improvements in the yield of some crops.

The districts of Ernakulam and Thrissur are highly developed in banking sector, while, the districts of

Kasargode and Pathanamthitta are low developed. This result is consistent with a study by Thomas (1991) according to which, the district of Ernakulam was found to be highly developed in terms of banking sector while, the rankings of Wayanad and Kasargode did not coincide with this study.

In terms of the level of overall socio-economic development, the districts of Ernakulam and Thiruvananthapuram are found to be highly developed, Thrissur, Palakkad (0.47) and Kozhikode are classified as moderately developed and Malappuram, Kollam, Alappuzha, Kottayam, Kannur and Idukki are found to be developing while, Kasargode, Wayanad and Pathanamthitta are observed to be low developed.

## CONCLUSION

The present study reveals that the district of Ernakulam is well developed in all sectors and low developed districts like Pathanamthitta, Wayanad and Kasargode are more developed in specific sectors like agriculture and animal husbandry, implying that in order to enhance their overall degree of development, these districts must improve in the areas where they lag behind. The variation in the level of development in education, agriculture, animal husbandry, tourism, banking and crime is found to be of a higher order resulting in significant discrepancies in the level of development between the districts whereas, that of population is found to be extremely minimal. It would be useful to investigate and evaluate the level of development at a lower level, such as Tehsil or block level, in order to make location-specific recommendations, as most low-developed districts have areas that are better developed than others.

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