

# An analysis of regional disparity in Nagaland, India

T. Zarenthung Ezung and Y. Temjenzulu Jamir

*Department of Economics, Nagaland University, Nagaland-798627, India*

## ABSTRACT

One of the crucial issues in the development of an economy is to see that all the regions are equally developed but it so happens that due to natural and man-made factors not all regions can be equally developed. Regions endowed with rich natural resources generally progress faster than those with little or no natural resources and at the same time man too has contributed a lot in creating inequalities or disparities among the regions. Nagaland, even after 52 years of statehood, continues to lack behind other states in all development front and worst of all the economic disparity among the districts has been vividly growing over the years. This paper examines the level of development in Nagaland and the regional disparity among the districts using seven variables. The variables were analysed using principal component analysis for regional identification according to their level of development and examine the disparities among them. The combined component score which shows the overall development index indicates that the district of Dimapur, Kohima, Zunheboto and Mokokchung are placed under developed districts while the less developed districts are Longleng, Mon, Kiphire and Tuensang. The districts of Wokha, Phek and Peren fall under the moderately developed districts.

**Keywords:** Regional disparities, Nagaland

The process of economic development has occurred quite unevenly not only among nations but also among regions within a nation. This, difference's has been created by man advertently or inadvertently

while advancing towards the path of development. The differences created by man on account of social, economic, political, religious and cultural aspects are called not as differences but inequalities or disparities. These disparities are called respectively as social, economic, political, religious and cultural disparities. An economic disparity can be defined as a condition in which a person or persons though legally having equal rights is or are but for economic reasons deprived to some extent from available opportunities of fulfilling economic, social, political, cultural and religious needs (Rajalakshmi, 2013). There are different types of

Access this article online	
<b>Publisher</b>	Website: <a href="http://www.ndpublisher.in">http://www.ndpublisher.in</a>
	DOI: 10.5958/0976-4666.2016.00022.X

## Address for correspondence

T. Zarenthung Ezung: Department of Economics, Nagaland University, Nagaland-798627, India

E-mail: [tzars@rediffmail.com](mailto:tzars@rediffmail.com)

economic disparity, viz., income and wealth disparity, education disparity, technological disparity, regional disparity and sectoral disparity. The reason for economic disparities are multidimensional; Economic processes related to globalisation lead to a quick increase in regional disparities in terms of social and economic development, which has been well documented in, among others, numerous reports prepared by the OECD and the European Commission (Government of Poland, 2009), uneven distribution of natural resources among different region, corruption and mismanagement of public funds which leads to under-development, under-employment and low income of the people thereby widening the gap between the haves and have not.

Several studies have been undertaken to study explain the regional, inter-regional, inter-state and intra-state disparities in economic performance. Economist like Myrdal explains that the causes of regional imbalances are mainly because of strong backwash effect and low spread effect. While Prebisch and Singer points out to the secular deterioration in the terms of trade as the main factor contributing to the growth of international disparities. Many studies on inter and intra regional disparities in terms of income, poverty, infrastructures, etc., has been done in India over the years. Nagaland, even after 52 years of statehood, continues to lag behind other states in all development front and worst of all the economic disparity among the districts has been vividly growing over the years. The state is inhibited by 16 major tribes and other sub tribes and are categorised under advance and backward tribes. The government of Nagaland while categorising the districts as advance and backward gave more weightage on literacy rate and basing on this the districts of Mon, Tuensang, Phek, Peren, Longleng and Kiphire were considered as backward and are placed under special category enjoying reservation in Government jobs and higher education. However, things have changed over the years and the state need to rethink the policy of reservation as this has become an emotive and contentious issue in recent times.

This paper attempts to study the level of development in Nagaland and the variations or disparities among the eleven districts using seven socio-economic variables applying principal component analysis.

#### **DATABASE AND METHODOLOGY**

The study is entirely based on secondary data taken from the various statistical handbook of Nagaland, published by the Directorate of Economics and Statistics as well as Nagaland Census 2011. Seven indicators were used for the study, viz,  $X_1$  – Employment per “000”,  $X_2$  – Literacy rate (2011),  $X_3$  – Government Medical Practitioner “000”,  $X_4$  – Proportion of Industries,  $X_5$  – Proportion of Banks,  $X_6$  – Proportion of Surfaced Road and  $X_7$  – Proportion of Electrified villages. For data analysis, the first three variables, employment per thousand population, literacy rate and Government medical practitioners to the total population of each district were taken. For the last four variables, the proportion of each district to the state was worked out. To bring out the development index for Nagaland state, the proportion/percentage of each variable for all the districts were used and then computed using Principal Component Analysis, viz, factor analysis and combined component score. A combined component score have been computed from the first ( $S_1I$ ) and second ( $S_2I$ ) component score using the per cent of variation explained as the weights (Srivastava, 2011). These factor score and combined component score were used while ranking the districts according to the level of development.

#### **RESULTS AND DISCUSSION**

To analyse the level of development and inter district disparities in development, factor analysis using Principal component analysis (PCA) has been applied while preparing the district level development index. The factor analysis starts with the correlation matrix of the original set of seven development variables. Coefficient of correlation analysis has been attempted to see the degree of relationship among various indicators.

**Table 1:** Correlation matrix

Variables	X <sub>1</sub>	X <sub>2</sub>	X <sub>3</sub>	X <sub>4</sub>	X <sub>5</sub>	X <sub>6</sub>	X <sub>7</sub>
X <sub>1</sub>	1	-0.290	0.387	<b>-0.714</b>	-0.474	0.014	<b>-0.726</b>
X <sub>2</sub>	-0.290	1	0.339	0.362	0.543	0.552	0.357
X <sub>3</sub>	0.387	0.339	1	-0.418	-0.372	-0.130	-0.569
X <sub>4</sub>	<b>-0.714</b>	0.362	-0.418	1	<b>0.729</b>	0.260	<b>0.870</b>
X <sub>5</sub>	-0.474	0.543	-0.372	<b>0.729</b>	1	<b>0.707</b>	<b>0.645</b>
X <sub>6</sub>	0.014	0.552	-0.130	0.260	<b>0.707</b>	1	0.273
X <sub>7</sub>	<b>-0.726</b>	0.357	-0.569	<b>0.870</b>	<b>0.645</b>	0.273	1

The correlation matrix in table 1 reveals that there is a high negative correlations between X<sub>1</sub> (employment rate) and X<sub>4</sub> (proportion of industries), X<sub>1</sub>(employment rate) and X<sub>7</sub> (proportion of electrification). These relations explain that higher the rate of industries and the rate of electrification, lower will be the rate of employment in the state. However, positive relationship has also been depicted in the table between X<sub>4</sub> (proportion of industries) and X<sub>5</sub> (proportion of banks), X<sub>5</sub> (proportion of banks) and X<sub>6</sub> (proportion of surfaced road) and X<sub>4</sub> (proportion of industries) and X<sub>7</sub> (proportion of electrification). This relationship shows that higher the proportion of banks and electrification higher will be the proportion of industries and higher the proportion of surfaced roads higher will be the proportion of banks.

The measure of communality reflects the percentage of variance of each indicator being captured by the retained factors. Table 2 also reveals that two factors have been retained based on Kaiser’s Criterion of Eigen-value greater than unity. The two derived factors account for 77.19 % of the inter-district variation. Out of these, the first factor accounts for 53.86 % of the variance and the second factor accounts for 23.33 %. Factor loadings in Table 2 reveals that the communality value of all the variables varied between 0.881 and 0.670 suggesting that the two factors retained were sufficient to account for most of the variation. Factor 1 load’s heavily on literacy rate, proportion of surfaced road, industries, banks, and electricity, whereas factor 2 is loaded heavily on employment rate and Government medical practitioners.

**Table 2:** Factor loading

Variables	F1	F2	Communalities h <sup>2</sup>
X <sub>1</sub>	-0.744	0.342	.670
X <sub>2</sub>	0.528	0.735	.818
X <sub>3</sub>	-0.504	0.646	.672
X <sub>4</sub>	0.902	-0.165	.841
X <sub>5</sub>	0.880	0.263	.844
X <sub>6</sub>	0.524	0.635	.677
X <sub>7</sub>	0.906	-0.245	.881
Variance explained (%)	53.86%	23.33%	77.19%

Now basing on the factor score and the combine component score, districts are identified as developed, less developed and underdeveloped respectively. Since

five factors, viz., literacy rate, proportion of surface road, industries, banks, and electricity, are loaded heavily on the first factor, the first factor score shows the variation

in the level of development among the districts with regard to this variables and this is shown in figure 1. The figure indicates that Dimapur and Zunheboto districts

ranks first and second respectively while the Mon and Longleng are the two lowest ranked districts.

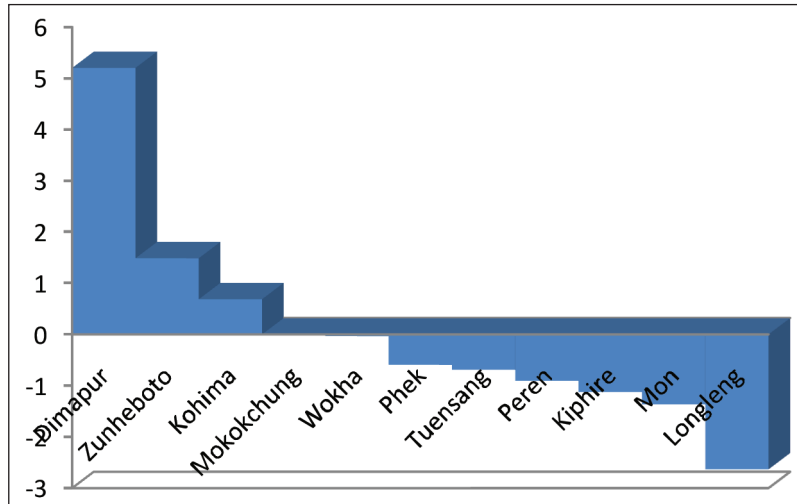


Fig. 1: Factor Score (F1)

Table 3 shows that Dimapur, Zunheboto and Kohima districts performs better than other districts in terms of literacy rate, surfaced road, industries, banks, and electricity. Mokokchung, Wokha, Phek and Tuensang

districts are placed in moderately developed districts. The Least developed districts in terms of literacy rate, surface road, industries, banks, and electricity development are Peren, Kiphire, Mon and Longleng.

Table 3: Factor Score (F1)

Developed Districts		Moderately Developed Districts		Less Developed Districts	
Dimapur	5.202	Mokokchung	-0.021	Peren	-0.906
Zunheboto	1.486	Wokha	-0.035	Kiphire	-1.126
Kohima	0.686	Phek	-0.595	Mon	-1.366
		Tuensang	-0.690	Longleng	-2.635

Factor score F2 in figure 2 and table 4 shows the level of development among the districts with regard to employment rate and medical practitioners. The

districts of Mokokchung and Kohima are ranked first and second respectively while Kiphire and Mon are at the bottom.

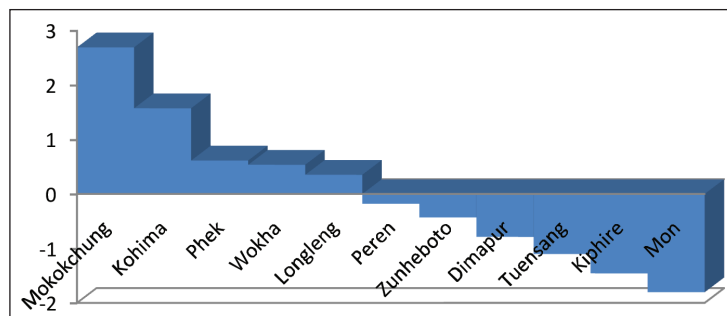


Fig. 2: Factor Score (F2)

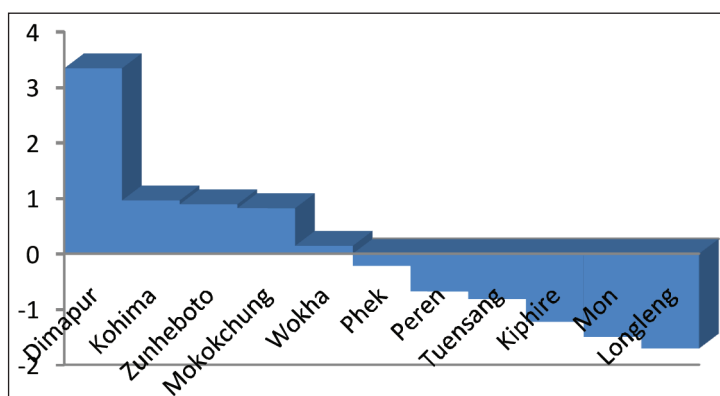
**Table 4:** Factor scores (F2)

Developed Districts		Moderately Developed Districts		Less Developed Districts	
Mokokchung	2.693	Longleng	0.352	Dimapur	-0.789
Kohima	1.574	Peren	-0.181	Tuensang	-1.104
Phek	0.614	Zunheboto	-0.431	Kiphire	-1.459
Wokha	0.536			Mon	-1.805

Table 4 shows that Mokokchung, Kohima, Phek and Wokha are categorised as developed while Longleng, Peren and Zunheboto are placed in the moderately developed districts. The less developed districts are dimapur, Tuensang, Kiphire and Mon.

in the case of Mokokchung, Kohima, Phek, Wokha and Longleng while it is negative for Peren, Zunheboto, dimapur, Tuensang, kiphire and Mon districts. Dimapur has the highest score of 3.344 while the lowest is Longleng with a score of -1.709.

The figure below depicts the Combined Component Score of the districts in Nagaland. The CCS is positive



**Fig. 3:** Combined Component Score

**Table 5:** Combined Component Score (CCS)

Developed Districts		Moderately Developed Districts		Less Developed Districts	
Dimapur	3.344	Wokha	0.142	Tuensang	-0.818
Kohima	0.961	Phek	-0.22	Kiphire	-1.229
Zunheboto	0.891	Peren	-0.681	Mon	-1.502
Mokokchung	0.82			Longleng	-1.709

The combined component score in table 5 shows the overall development index of the districts and categorised under developed, moderately developed and less developed. The combined component score from the seven development indicator shows that

the most developed districts in the state is Dimapur followed by Kohima, Zunheboto and Mokokchung, while Wokha, Phek and Peren districts falls into the category of moderately developed. The least developed districts are Tuensang, Kiphire, Mon and Longleng.

## CONCLUSION

Nagaland is one of the smallest state in India with a total population of 19.8 lakhs covering an area of 16,579 sq.kms and out of the eleven districts, the four least developed districts i.e Mon, Tuensang, Kiphire and Longleng as indicated by Combined Component Score, together occupies a total geographical area of 5129 sq.kms which is 31 percent of the total area of Nagaland and where 29 percent of the population resides (Census 2011). The districts of Kiphire and Longleng were created out of Tuensang district recently and not only do they have the smallest geographical area they are also the least populated. The combined area of these two districts is 629 sq km which is 3.79 percent of total area of Nagaland and has a population proportion of 6.92 percent. As shown by factor 1, the four less developed districts lacks proper physical infrastructure, especially, road and electricity. Therefore, it is suggested that high priority should be given in the development of road and electricity in these districts. This development will lead to proper tapping/utilization of resources from a mineral rich district like Kiphire. With rich bio-diversity, mineral resources and potentials for tourism in these districts,

special attention needs to be given to these sectors along with the provision of basic services and infrastructure.

## REFERENCES

- Census of India 2011. *Primary Census Abstract, Data Highlights, Nagaland, Series 14.*
- Ghaus A FA *et al.* 1996. Social development Ranking of Districts of Pakistan, *The Pakistan Development Review*, 35-4 part II (winter 1996) Pp. 593-614.
- Government of Poland 2009. *Regional Disparities in Poland, Ministry of Regional Development, Institute of Regional Research, Warsaw, P- 5.*
- Government of Nagaland 2014. *Statistical Hand Book Of Nagaland. Directorate of Economics and Statistics Nagaland, Kohima.*
- Narain, P. *et al.* 2007. Statistical Evaluation of Socio-economic Development of Different States in India, *Journals of Agricultural Statistics* 61(3): 2007, Pp 328-335.
- Rajalakshmi, K. 2013. Growing Regional Disparities in India's Development, *International Journal of Education Research and Technology* 4(3): Sept 2013, pp 47-55.
- Srivastava, A. 2011. Disparities of Women Development in Uttar Pradesh: A Factor Analysis Approach, Access on 10<sup>th</sup> October 2014 at [www.indiastat.com/article/28/achala/fulltext.pdf](http://www.indiastat.com/article/28/achala/fulltext.pdf) .