

Inter-District Socio Economic Development Disparities in Assam

MANASHI HAZARIKA*¹ AND PADMALOCHAN HAZARIKA²

¹Department of Agricultural Statistics, Assam Agricultural University, Jorhat (Assam) India

²Department of Commerce, Gauhati University, Guwahati (Assam) India

ABSTRACT

Since independence India has been suffering from regional disparities in socio economic development. The concern for reducing these disparities has been reflected in every five year plans of our country. Apart from regional disparities at state level disparity at district level within a state is also very prominent in most of the states of India. This study is an attempt to analyze the socio economic development disparity prevailing in Assam which is a state in North Eastern part of the Country. Secondary data collected from various publications of the Office of the Registrar General and Census Commissioner of India based on the Census 2011 survey is used in this study. Existences of a wide range of inter district socio-economic development disparities have been experienced in Assam. It has also been observed that the districts in upper Assam are enjoying better socio economic status as compared to the districts in lower Assam.

Key Words : Inter-district, Socio economic, Disparity, Development indicators, Assam

INTRODUCTION

Development is a process where growth and change turn out together. Socio economic development is a multidimensional process of social and economic development in a society which occurs with the development in education, employment, income, health and the overall well being of a society (Myrdal, 1972). Besides accelerating the pace of economic development in the country, the main objectives of planning in India have always aimed at the attainment of an egalitarian socio economic order with balanced development of regions. The first Five Year Plan was launched in India in 1951. Since then a major objective running through the every Five-year plan in India has been the reduction of regional development disparities in the country. Despite of massive investment by the government for the removal of regional disparities the achievements in reducing the regional disparities were not often commensurate with the efforts (Minocha, 1983; Mathur 1983; Kurian 2000, 2007). The fact is more evident from the estimates of Human Development Indices across the states. Apart

from the inter-state developmental disparities the intra state and intra district disparities are also prominent in our country. District level analysis is considered more useful to assess the echelon of socio economic development based on which district specific development policies can be formulated (Wanmali and Islam, 1995). District level economic planning is now considered as an important tactic for the inclusive development process of the government.

Among the backward states of India, Assam is the area of the this study .Assam is a state under the North Eastern Region of the country. The North Eastern Region (NER) of India comprises of eight states. Majority of population of this region is tribal. Assam is the only state in the region having less percentage of tribal people compared to other seven states of the region. Assam is considered as the gateway of this isolated region from the main land of the country. There are, at present, twenty seven district in Assam as per 2011 census and its total population is recorded at 3,12,05,576. The major livelihood of the people of the state is agriculture. Since independence of the nation, we have ample examples of

various Government of India initiatives for development of the state but unfortunately, equal derivation of benefits by all section of the society is still lacking in the state. This incidence of uneven development in the state has paved the path of unemployment, poverty and insurgency. In fact, the existence of high magnitude of regional disparities at macro as well as micro levels, the state has encountered the problem of regionalism and natavistic tendency of the ethnic population at various levels. For example one of the reasons for demand for the formation of different states within the state of Assam is nothing but spatial disparities prevailing in the state. Now the problem of regional disparity is a serious issue of concern for the government which should be effectively dealt with.

Objectives:

The objective of this study is to measure the extent of inter district socio-economic development disparity in Assam. For this purpose a composite index of development is going to be constructed in this study. The index will be based on some indicators which have an inherent comporment on socio-economic development in Assam. The twenty seven districts of Assam will be ranked according to the composite index to be developed.

Source of data:

Secondary data has been used in this study. The source of data of this study is various publications of Registrar General and Census Commissioner of India based on 2011 Census (House listing and Housing Census and Population Enumeration).

Indicators of socio-economic development:

Any development oriented study necessarily depends on certain indicators throwing light on living standards and development. Drewnowski (1972) stated that socio economic development indicators should be some discernible and measureable phenomenon which contain information about the extent of contentment of human needs. According to McGranahan an ideal indicator of socio economic development should be representative of the development process as much as possible (1972). Researchers all over the world have tried to define development in terms of certain selected indicators. Although per capita income index is considered by many a researchers as single most indicator of development yet it has always been questioned. In fact, any development process cannot be accessed fully by a

single indicator. From the literature found so far it is felt that if we can measure socio-economic development on the basis of a large number of attributes as is pertinent and feasible a better result can be ascertained (Ganguli and Gupta, 1976; Kolm 1977; Rao, 1977; Atkinson and Bourguignon, 1982; Sen 1985a, 1977b; Maasoumi, 1986; Hirschberg *et al.*, 1991; Slottje, 1991; Meher, 1999). Depending on the availability of data we have included thirteen indicators in our study in order to evaluate the echelon of the socio-economic development in Assam. All these indicators are listed in the methodology of study. It is worth mentioning that these same indicators were used along with some other indicators for gathering information in Socio Economic and Caste Census which was conducted by government of India in all 640 districts of the country during 2011-12.

METHODOLOGY

Development indicators:

Depending on the availably and accessibility of data at district level, we have selected the following thirteen indicators for this study.

- (i) Male Literacy Rate
- (ii) Female Literacy Rate
- (iii) Percentage of households living in Pucca house
- (iv) Percentage of households living in Kucca house
- (v) Percentage of household having electricity as main source of lighting
- (vi) Percentage of household having safe drinking water
- (vii) Percentage of Households having latrine within the premise
- (viii) Percentage of Households having bathroom within the premise
- (ix) Percentage of Households living in owned house
- (x) Percentage of Household living in Rented house
- (xi) Percentage of Any other household
- (xii) Percentage of household using LPG as means source of cooking
- (xiii) Percentage of Households availing banking services

The indicators listed above are defined as described below.

Male literacy rate:

It is the number of literate persons per hundred population of age seven years and above and is calculated

as

$$\text{Male Literacy Rate} = \frac{\text{Total number of male literates}}{\text{Total male population aged 7 years and above}} \times 100$$

Female Literacy Rate:

It is the number of literate persons per hundred population of age seven and above and is calculated as

$$\text{Female Literacy Rate} = \frac{\text{Total number of mfemale literates}}{\text{Total female population aged 7 years and above}} \times 100$$

Household living in pucca house:

A household is a group of persons who normally live together and take their meals from a common kitchen. The persons in a household may be related or unrelated or mix of both. A house is defined as pucca house as per census 2011, if the predominant material of wall and roof are as follows:

Predominant material of wall	Predominant material of roof
Stone packed with mortar	Machine made tile
G.I./metal/asbestos sheets	Burnt brick
Burnt brick	Stone
Concrete	Slate
-	G.I./metal/asbestos sheets
-	Concrete

Household living in kucca house:

A house is defined as kucca house as per census 2011, if the predominant material of wall and roof are as follows:

Predominant material of wall of dwelling room	Predominant material of roof of dwelling room
Grass/thatch/bamboo etc.	Grass/thatch/bamboo/wood/mud etc.
Plastic/polythene	Plastic/polythene
Mud/un burnt brick	Handmade tiles
Wood	
Stone not packed with mortar	

Houses having electricity as main source of lighting:

Main source of lighting refers to that source of lighting which is used for major part of the year. Apart from electricity the other source of lighting are kerosene, solar, other oil and any other. In our state we have still number of houses without any lighting facility.

Houses having safe drinking water:

Safe drinking water, in our research work, refers to tap water from treated source a available within the premises, outside the premises (within 100/500 metres) or away from the premises (beyond 100/500 metres).

Houses having Latrine within the premises:

It includes Pit latrine, Flush/ pour flush latrine, Night soil disposed into open drain and service latrine within the premises.

Households having bathroom within the premise:

It includes all households those have bathroom with or without roof within the premise of the house.

Household living in own house:

If a household is self occupying the house owned by it and not making payments in the form of rent to anyone, it will imply that the household is living in own house.

Household living in rented house:

A household is treated as living in rented house if rent is being paid or contracted for by the household in cash or kind. Accommodation provided by employer like quarters etc. is also treated as rented.

Household living in any other houses:

Households living in houses other then the above two.

Households using LPG as main source of cooking:

Households using LPG as predominant source of cooking fuel.

Households availing banking services:

A household to be recorded as household availing banking services it is necessary that the head of the household or any other member in the household is availing banking services provided by the bank or post office as a holder of any type of bank account . This will cover all types of commercial banks such as nationalized banks, private banks, foreign banks and the co-operative banks. It is clarified that credit and thrift societies, Self-help Groups, Primary Agricultural Credit Societies etc. do not form part of the banking system and as such these services are not covered under banking services.

Construction of Composite Index:

Any single indicator cannot evaluate the impact of socio economic development since it is a multidimensional process. On the other hand individual analysis of a number of indicators also do not provide an integrated and cogent depiction of realism. Hence the construction of a composite index is essential for analysis of regional disparities on the basis of various indicators of development.

Usually most of the regional disparity studies made in the country have followed three methods of aggregating a number of indicators into a single indicator *i.e.*, construction of a composite index. They are Equal Weightage Index Method, Ranking Method and Method of Principal Component Analysis. There is another method of construction of a composite index known as Deprivation Method. In this study we have applied this ‘Deprivation method’ for constructing the composite index by combing the thirteen selected indicators.

Deprivation Method:

In the construction of Human Development Index in Human Development Report published by the United Nations Development Programme this method has been applied. The composite index by deprivation method is constructed in three steps.

Step I: Define a measure of deprivation that a district suffers with respect to all the chosen variables. A maximum and a minimum value determined on the basis of the highest and the lowest for each of the thirteen variables of twenty seven districts of Assam given their actual values. The deprivation measure places a district in the range of zero to one. If I_{ij} is the deprivation indicator for the j^{th} district with respect to the i^{th} variable then it is given by

$$I_{ij} = \frac{(\text{Max } X_{ij} - X_{ij})}{(\text{Max } X_{ij} - \text{Min } X_{ij})}$$

where X_{ij} indicates the value of the i^{th} indicator with respect t the j^{th} district.

Step II: Define an average indicator (I_j) which is calculated by taking a simple average of the chosen indicators and thus

$$I_j = \frac{\sum_i^n I_{ij}}{n}$$

Step III: Compute the Socio Economic Development Index on the basis of the development indices for each separate district as one minus the average deprivation index, *i.e.* $(SEDI)_j = (1 - I_j)$

The districts for which SEDI score point is 0.8 and above, is termed as developed districts. If the score point lies between 0.5 and 0.8 (including 0.5 but excluding 0.8) then the district is termed as moderately developed and if the score point is below 0.5 then the district is termed as less developed or backward. SEDI is an absolute measure of development.

RESULTS AND DISCUSSION

Inter district variation with respect to different socio economic development indicators:

Education is fundamental for all kinds of growth and development in a society. Illiteracy is one of the major problems faced by most of the developing nations. As per 2011 Census, Assam ranks 29th and 26th in respect to male literacy rate and female literacy rate respectively among all the states and union territories in India. Out of 27 districts in Assam, five districts *viz.*, Goalpara, Chirang, Barpeta, Darrang and Dhubri have shown male literacy rate below the state average 77.85%. In regard of female literacy rate in the state fourteen districts *viz.*, Dhemaji, Bongaigaon, Morigaon, Goalpara, Karbi Anglong, Tinsukia, Baksa, Sonitpur, Udalguri, Kokrajhar, Barpeta, Udalguri, Darrang Chirang and Dhubri are below the state average 66.27%. But the magnitude of inter district variation in case of both male and female literacy rate have been found lower than the other indicators. The coefficient of variation of male literacy rate and female literacy rate are 8.93% and 10.86% respectively as shown in the following Table 1. Another variable showing less coefficient of variation (10.99%) in this study is percentage of household living in own house. More than 70% households reside in their own house in all the districts except Kamrup Metropolitan. On the other hand the percentage of households living in rented house and in any other type of house have been found as 6.84% and 5.24%, respectively.

In Assam on an average 23 households per 100 households live in pucca houses and 21 households live in kucca houses.

The coefficient of variation has been recorded as 44.91% and 39.83% in case of percentage of households living in Pucca house and percentage of household living in kucca house respectively among the districts in the

Table 1 : Top three Districts with highest percentage of households living in Pucca house and Kucca house in Assam

Percentage of households living in pucca house	Kamrup Metroplita (65.18%)	Dibrugarh (35.70%)	Tinsukia (35.08%)
Percentage of households living in kucca house	Dhemaji (43.12%)	Karbi Anglong (38.57%)	Karimganj (34.25%)

state.

Electricity is found as a main source of lighting in 36.91% of households in the state. Only ten districts in Assam are representing higher percentage of households using electricity as a main source of lighting than the state average. The maximum number of households using electricity as main source of lighting has been found in Kamrup Metropolitan (86.39%), followed by Tinsukia (60.26%) and Jorhat (52.36%). On the other hand lowest figure has been recorded in Dhubri district (17.42%) followed by Dhemaji (21.76%) and Kokrajhar (22.98%). The coefficient of variation found in respect of this indicator of socio economic development of Assam is 39.83%.

A very higher amount of inter district variation has been observed while analyzing the district wise number of household having tap water from treated source. Only 9% households in Assam are availing tap water from treated source. The districts with highest and lowest percentage of households having tap water from treated source is Cachar (34.43%) and Barpeta (1.34%) respectively. Only seven districts in the state are representing higher percentage of households having tap water from treated source as compared to the state average.

Table 2 : Districts with higher percentage of households having tape water than the state average (9%)

Districts	Percentage of households having tape water
Cachar	34.43
Kamrup Metropolitan	27.11
Jorhat	25.79
Dima Hasao	18.67
Sivsagar	17.50
Hailakandi	15.72
Golaghat	12.68

The C.V. observed in this case is 99.72% which indicate a very high amount of inter district variation in respect of this indicator.

While studying the two indicators directly related to sanitation of a household ‘percentage of households having latrine within the premise’ and ‘percentage of households having bathroom within the premise’, it has been observed that the inter district variation is lower in case of the first indicator compared to the second one. The C.V. recorded is 25.98% and 42.57%, respectively. In the state 61.89% households have latrine and 41.79% households have bathroom with the premise of the household.

Table 3 : Districts with highest and lowest percentage of households having latrine and bathroom within the premise

Indicator / Districts	Percentage of households having latrine within the premise	Percentage of households having bathroom within the premise
Highest	Kamrup Metropolitan (92.34%)	Kamrup Metropolitan (86.79%)
Lowest	Chirang (28.74%)	Chirang (14.58%)

Chirang district has shown a very poor picture with respect to these two above stated indicators of socio economic development of Assam in the study.

In Assam only 19% households use LPG as their main fuel for cooking in the kitchen which is below the national average.

Table 4 : Use of LPG and firewood in Assam Vs India

India/Assam	Percentage of households using LPG as main fuel for cooking	Percentage of households using firewood as main fuel for cooking
India	28.54	49
Assam	18.95	72.12

It is very clear from the above table that in our county major portion of households still rely on firewood as the fuel for cooking. In Assam the percentage is 72.12 which much higher than the national average. The smoke from burning such fuels like firewood, coal, cow dung etc. causes disquieting household pollution. It also the reason several respiratory diseases causes to women and children. As per a WHO report, the smoke from burning 400 cigarettes in an hour is equivalent to the smoke inhaled

by women from unclean fuel used in cooking. In addition, women and children have to go through the drudgery of collecting firewood. Considering the situation very seriously government might have launched the Pradhan Mantri Ujjwala Yojana (PMUY). The main objective of the scheme is to safeguard the health of women and children by providing them with a clean cooking fuel – LPG.

Among the districts again very obviously Kamrup Metropolitan (76.92) has occupied the first rank in having maximum percentage of households using LPG as the main fuel for cooking followed by Jorhat (30.73%) and Dibrugarh (27.95%). Out of twenty seven districts in the state in a total of twenty districts the percentage of households using LPG as main source of fuel are less than 20 percent. Among them Baksa district (5.83) has ranked last followed by Dhubri (6.98%) and Hailakandi (7.69%).

The C.V. recorded for this indicator is 74.78% which again shows a very high magnitude of inter district variation in the state.

On an average 44.09% households in Assam avail banking services provided by different banks in the State. Availing the maximum possible banking services by the people is very important for the economic as well as social well being of them. The government of India has taken various initiatives like Jana dhan to entangle every general citizen to the banking services. This indicator of socio economic development has shown a C.V. of 27.65%. In the state thirteen districts have shown higher percentage of households in the district having households who avail banking services than the state average. Among them Kamrup Metropolitan occupies the first rank (80.04%) followed by Hailakandi (70.27%) and Bongaigaon (58.88%). On the other hand the district who occupies last position in this regard is Dhubri (23.31%) followed by Goalpara (33.26%) and Baksa (33.59%).

Among the above discussed indicators of socio economic development a very high coefficient of variation has been found in case of 'households using tap water from treated source' (97.92%) and households having LPG as the main fuel for cooking. Both these indicators are very important for well being of human life and also directly connected to the health of the people. The districts showing the lowest percentage of households using LPG as main fuel for cooking are Baksa,, Hailakandi and Dhubri. It is to be mentioned that the district Hailakandi has been ranked as the district with

lowest HDI (Human Development Index) as per the Assam Human Development Report ,2014, Govt. of Assam.

Levels of socio-economic development:

The composite indices of development have been obtained for all the 27 districts of Assam. On the basis of these composite indices the districts are ranked for depicting the prevailing socio economic status of each district. The following table 5 presents the composite indices of socio economic development and the ordinal rank of all 27 districts of Assam. The coefficient of variation of Socio economic development index is 29.30% as shown in the following table 5. This implies that there exists a considerable inter district variation with respect to socio economic development in the state .Table 5 depicts that the value of composite indices of socio economic development varies from 0.267 to 0.833. It has been observed that the district of Kamrup metropolitan ranks first and Dhubri is ranked last in this regard. It is evident from the information presented in the table 5 that Composite index of only eight districts in Assam are falling in the range 0.5 to 0.8 which indicate that a district is a moderately developed one .In Assam, only one district has been recorded as highly developed district in this study and that one is the Kamrup Metropolitan. The districts occupying the first five places in socio economic development are Kamrup Metro (0.833), Jorhat (0.654), Sivsagar (0.591), Nalbari (0.565) and Cachar (0.536). On the other hand, eighteen districts in Assam are witnessing low socio economic development which can be put under the category of low developed or backward districts. Five lowest socio economically developed districts in the state are Dhubri (0.267), Chirang (0.277), Kokrajhar (0.283), Dhemaji (0.305), and Karbi Anglong (0.307). The incidence of occupying the first rank in socio economic development by Kamrup Metropolitan is very obvious since it is the capital of the state. The other two district placing in second and third rank *i.e.*, Jorhat and Sivsagar were found as more developed districts in the state compared to other districts in some earlier studies also. Here we can mention about the study made by A.K. Agarwala and P.L.Hazarika (2004) on the socio economic development scenario of Assam where they also found these two districts occupying the similar position in the context of socio economic development. Moreover, it is revealed from the table that all the districts in upper Assam are enjoying better socio economic status as compared

to the districts in lower Assam except Nalbari district.

Educated human resource can be ascribed as one of the main reasons for reflecting better socio economic status by the districts in upper Assam. The literacy rate and level of educational attainment of people are two key indicators of a country's development. It is instrumental in performing a range of activities by people, which are not possible without the ability to read, write and communicate in the social sphere. The quality of life of a person, therefore, depends on educational achievements to a great extent. Education enhances awareness which is very important for the occurrence of any type of development in a society. As per the Assam Human Development Survey (2014) out of 27 districts of Assam, more than two-third of the total illiterates is in 12 districts and almost one-seventh of them belong to Dhubri district alone. In our study also Dhubri district is

ranked last.

While making district level analysis it is important to identify the contiguous districts exhibiting similar development profiles which help the policy makers to implement some area specific policy actions. A brief perusal of Table 5 shows that there are six contiguous districts which are exhibiting lowest development profiles in the state. These districts are Dhubri, Chirang, Kokrajhar, Baksa, Darrang and Udalguri. Among these six districts Dhubri is the second populous district in the state. Again, within this cluster of six districts four districts viz Kokrajhar, Chirang, Baska and Udalguri fall under the Bodoland Territorial Council (BTC). Thus the entire BTC area is witnessing a poor socio economic status in the state with respect to these particular twelve indicators of socio economic development. On the other hand, four contiguous districts in upper Assam are showing almost similar development pattern. These districts are Jorhat, Sivasagar, Golaghat and Dibrugarh are found to occupy 2nd, 3rd, 6th and 7th rank respectively in the composite socio economic developmental index of the state. Again the entire Barak valley region comprising the districts Cachar, Hailakandi and Karimkanj is exhibiting almost similar socio economic developmental scenario. The districts Cachar, Hailakandi and Karimganj are placed in the rank of 5th, 8th and 10th respectively. Thus these areas of similar developmental profiles can be targeted by the government to formulate some region oriented development policies and schemes.

Table 5: Composite index (CI) of Socio Economic development and rank of the districts of Assam

1.	Kokrajhar	0.283	25
2.	Dhubri	0.267	27
3.	Goalpara	0.416	16
4.	Barpeta	0.376	19
5.	Morigaon	0.383	18
6.	Nagaon	0.435	15
7.	Sonitpur	0.406	17
8.	Lakhimpur	0.437	14
9.	Dhemaji	0.305	24
10.	Tinsukia	0.459	11
11.	Dibrugarh	0.521	7
12.	Sivasagar	0.591	3
13.	Jorhat	0.654	2
14.	Golaghat	0.522	6
15.	Karbi Anglong	0.307	23
16.	Dima Hasao	0.456	12
17.	Cachar	0.536	5
18.	Karimganj	0.485	10
19.	Hailakandi	0.507	8
20.	Bongaigaon	0.447	13
21.	Chirang	0.277	26
22.	Kamrup	0.505	9
23.	Kamrup Metropolitan	0.833	1
24.	Nalbari	0.565	4
25.	Baksa	0.313	22
26.	Darrang	0.324	21
27.	Udalguri	0.344	20
	C.V.	29.30	

Source: Author's own calculation from collected data

Conclusion:

One of the main objectives of planning in India is the attainment of an egalitarian socio economic order with balanced development of different regions of the country. The reduction of regional development disparity both at the inter-state and intrastate level is always given much importance by the Indian planners. In this study we have made an attempt with the help of quantitative tools and techniques to analyse the inter district development disparities in Assam having 27 districts as per 2011 census. We have developed composite indices of socio economic development for the districts based on thirteen selected socio-economic development indicators. The results demonstrate that wide disparities in the level of socio-economic development exist among different districts within Assam. In Assam, only one district has been recorded as highly developed district in this study and that one is the Kamrup Metropolitan. The districts

occupying the first five places in socio economic development are Kamrup Metro (0.833), Jorhat (0.654), Sivsagar (0.591), Nalbari (0.565) and Cachar (0.536). On the other hand, eighteen districts in Assam are witnessing low socio economic development which can be put under the category of low developed or backward districts. Five lowest socio economically developed districts in the state are Dhubri (0.267), Chirang (0.277), Kokrajhar (0.283), Dhemaji (0.305), and Karbi Anglong (0.307). In addition to this we have also observed that contiguous districts in the state are showing almost the similar pattern of socio economic development. Here we can mention that fact that the geo-spatial diversities exist in state is also contributing to the variation in socio economic development among the districts.

Socio economic in equilibrium results in commotion in a society. For breaking out socio economic impass some area or district specific development policies are required which will build Assam a land of prosperity .It will wipe out the prevailing disparities discussed above in the state. It is now necessary that the districts showing very low socio economic development should be given more attention while formulating any development policies to mitigate the imbalances.

REFERENCES

- Agarwala, A.K. and Hazarika, P (2004). Developmental Disparities : A Quantative Insight. New Delhi: Akansha Publishing House.
- Atkinson, A. and Bourguignon, F. (1982). The comparison of multi-dimensioned distributions of economic status. *Review of Economic Studies*, **49**(2) : 183–201.
- Das, B.(2017). Social Infrastructure in Assam: A Study of its Inter District Disparities. *Internat. J. Multidisciplinary Studies*, **II** : 1-18.
- Drewnowski, J. (1972). Social indicators and welfare measurement: remarks on methodology. *J. Development Studies*, **8**(3) : 77–90.
- Ganguli, B.N. and Gupta, Debendra, B. (1976). Levels of Living in India - An inter-state profile. New Delhi: S. Chand and Co. Ltd.
- Government of Assam.(2014). Human Development Report. OKD Institute of Social Change and Development, GuwahatiInstitute for Human Development, New Delhi. Retrieved from http://www.okd.in/downloads/assam_hdr_30sep2016.pdf.
- Hirschberg, J.G, Maasoumi, E. and Slottje, D.J. (1991). Cluster analysis for measuring welfare and quality of life across countries. *J. Econometrics*, **50**(1–2) : 131–150.
- Kolm, S.C. (1977). Multidimensional egalitarianism. *Quarterly J. Economics*, **91**(1) : 1–13.
- Kurian, N.J. (2000). Widening regional disparities in India: Some indicators. *Economic & Political Weekly*, **35**(7) : 538-550.
- Kurian, N.J. (2007). Widening economic and social disparities: Implications for India. *Indian J. Medical Res.*, **126** : 374–380.
- Maasoumi, E. (1986). The measurement and decomposition of multi-dimensional inequality. *Econometrica*, **54**(4) : 991–997.
- Mathur, A. (1983). Regional development and income disparities in India: A sectoral analysis. *Economic Development & Cultural Change*, **31**(3) : 475–505.
- McGranahanan, D. (1972). Development indicators and development models. *J. Development Studies*, **8**(3) : 91–102.
- Meher, Rajkishore (1999). Development Disparities in a Backward Region : A District Level Analysis. New Delhi: APH Publishing Corporation.
- Minocha, A.C. (1983). Regional disparities in India: some basic issues. *Social Scientist*, **11**(5) : 51–57.
- Myrdal, G. (1972). Asian drama: an inquiry into the poverty of nations. New York : Pantheon Books.
- Rao, Hemanta (1977) .Identification of Backward Regions and the Trends in Regional Disparities in India. *Artha Vijnana*, **19**(2) : 93-112.
- Sen, A. (1987a). Commodities and capabilities, New Delhi: Oxford University Press.
- Sen, A. (1987b). The standard of living, Cambridge: Cambridge University Press.
- Slottje, D.J. (1991). Measuring the quality of life across countries. *The Review of Economics & Statistics*, **73**(4) : 684–693.
- Wanmali, S. and Islam, Y. (1995). Rural services, rural infrastructure and regional development in India. *Geographical J.*, **161**(2) : 149–166.
