***Original Research Article***

**Poverty trends and regional disparities in India: A primary emphasis on Karnataka**

**Abstract**

In the realm of a rapidly developing and continuously prospering world, poverty remains the most elusive social evil to eliminate. In fact, for all underdeveloped and developing countries, poverty is one of the innate threats to derail their economic progress and hard-earned social status. Poverty is marked by multidimensional deprivation and displays considerable regional variation, with certain states facing chronic levels of socio-economic vulnerability. Particularly in rural areas, poverty remains pronounced due to insufficient access to essential services, unstable employment and poor infrastructure and structural challenges such as income inequality and educational disparities persist in the country. Thus, comprehensive and context-specific understanding of poverty dynamics is crucial for formulating effective and evidence-driven policy solutions. Hence, to understand these poverty trends in India and Karnataka as focused consideration the study has been conducted by using secondary data and the data was analysed using statistical analytical tools such as descriptive statistics, Growth rate analysis, Coefficient of Variation (C.V.), Cuddy- Della Valley instability index and to verify the income inequality the Gini Coefficient and Lorenze curve were used. The results emphasize that growth rate of poverty in the Karnataka state (-5.45%) and the country (-3.12%) as a whole, the share of rural poor is significantly higher with 71.53 in the state and 80.37 per cent in country than the urban poor causing wide income disparity between rural and urban poor. The study suggests strengthening the integrated approach through various rural development programmes for enhancing employment and income in the rural areas.

**Key words: Poverty trends, Income inequality, Regional disparity**

**Introduction**

Poverty is a complex phenomenon that is influenced by several socio-economic and political circumstances. As quote engraved by Prof. Amartya Sen - poverty is not just lack of money; it is not having the capability to realize one‘s full potential as a human being (*Santos, 2017*). This means income alone cannot be a measure of poverty, rather than the economic poverty line one can suffer from multiple other elements such as poor health, malnutrition, lack of access to clean water, electricity and limited access to education and much more. Also, poverty is considered as a vicious circle as it is multidimensional problem and multiple factors are responsible for it which is deprivation in the well-being of an individual (*Rohima et al., 2013*).

According to World Bank Report, “Poverty, prosperity, and planet report, 2024”, it is stated that still, 692 million people which is about 8.5 per cent of the global population are living in extreme poverty i.e., surviving less than the global poverty line of $2.15 per day and the poverty rates are decreased to 8.5 per cent in 2024 from high poverty rates of 38 per cent in the year 1990 (Anonymous, 2024). According to the report of the Global Multidimensional Poverty Index, globally 1.3 billion people across 109 countries live in acute multidimensional poverty, among these 644 million are under the category of children fall under the age below 18 years, and other 105 million people are of old age i.e., above the age of 60. The middle-income countries are the ones who are extremely challenged in poverty where 67 per cent of the population is multidimensionally poor (Anonymous, 2021a). The reduction of poverty is an integral requirement for each nation's sustainable development which helps the advancement of the nation by raising the income levels of the poor by providing basic necessities. In addition, the Covid-19 pandemic has disturbed status and caused an economic fallout in the world, which again pushed 8 per cent of the total human population into extreme poverty (Anonymous, 2021b). The pandemic condition globally reversed decades of progress and acts as a pace of change by again increasing poverty, unemployment rates, and hunger.

Multiple efforts are being accomplished in the world to eradicate poverty through Millennium Development Goals (MDGs) which had an objective to eradicate extreme poverty and hunger by 2015 but the gains made through the MDGs have not completely benefitted all the people. Further, the Sustainable Development Goals (SDGs) are a collection of seventeen global goals designed to achieve a better and more sustainable future for all. Eradication (No) of poverty is being one of the Sustainable Development Goals (SDGs) aims to end poverty in all its forms and everywhere that is to reduce 50 per cent of global poverty and to eradicate extreme poverty by 2030 (*Haliscelik, and Soytas, 2019*).

**Poverty in India and Karnataka**

In almost all underdeveloped and developing countries, a very low per capita income and income inequality have resulted in a number of evils, of which poverty is certainly the most serious one and it is the severest social and economic challenge for India. In India it is a continuous to be widespread and affecting significant human population in the country where their lives start in poverty and end in it. This forms the basis for surmounting poverty as its effects are quite disastrous for rapidly developing countries unless they devise poverty alleviation measures.

For quite some sometime India remains the fastest growing economy in the world and there are multiple efforts to improve/ameliorate the standard of living and social well-being of 1.3 billion people. However, the efforts in the last seven decades have not brought the desired results as the lives of more than 20 million people start in poverty and end in it (*Alok, 2020 and Datt et al., 2020*). India ranked 66th out of 109 countries in the Global Multidimensional Poverty Index (GMPI) of the year 2021 with a national average of 25.01 per cent (Anonymous, 2021a). It is evident in India that the state of poverty is further gets accentuated when they are deprived of social endowments/goods such as; food, drinking water, sanitation, shelter, primary health care, etc.

Karnataka is one of the progressive states in the country and also experiences the challenges of poverty where, 13.10 per cent population are poor. The poverty status in Karnataka has wide variation, depending on rural-urban disparities, region, caste, and religion. The National Multidimensional Poverty Index, released by the NITI Aayog, points to an increased gap between districts in the south and north Karnataka regions where Yadgiri district surrenders to a highest poverty rate with 41.67 per cent of the poor. Economists pointed out the irregularity and opined that more investment and policy focus in north Karnataka regions. The report has been prepared by taking into consideration multidimensional parameters such as health, education, and standard of living in addition to others (*Ashwini, 2021*). Therefore, the key to alleviating poverty levels rests on provisioning basic amenities and the most crucial among all is to ensure food and nutritional security as duo turns out to be a game changer in reducing poverty levels in the state. Hence, a comprehensive and context-specific understanding of poverty dynamics is crucial for formulating effective and evidence-driven policy solutions. Therefore, to understand these poverty trends in India and Karnataka as focused consideration the study has been conducted.

**Research Methodology**

The present study is purely based on secondary data. Secondary data pertaining to population, poverty composition etc., are collected from published sources and official websites like *indiastat.com*, District at a Glance Reports, Economic Survey Reports and Population Census etc. In addition to published government reports, reports of Directorate of Economics and Statistics and also other unpublished sources were compiled for tabulation.

**Analytical tools and techniques used**

The procedure and the methods followed in each step of analysis with suitable tools are presented here as follows; The data thus collected were processed by using descriptive statistical tools such as averages, percentages and frequencies in respect of all the objectives and presented in the form of tables to compare and interpret the results meaningfully.

**Growth rate analysis**

The analysis of growth is usually used in economic studies to find out the trend of a particular variable over a period of time. It clearly indicates the performance of the variable consideration and hence, it can be very well used for making interpretations and to evolve policy decisions. The growth in poverty rates and the number of people fall into poverty in specified periods (poverty survey periods from 1973-1974 to 2011-2012) in India as well as Karnataka were estimated using the exponential growth function of the following form;

Yt= A Bt Vt  …… (1)

Where,

Yt = Number of poor or poverty rates in the year t

A = Intercept indicating the Y in the base period (t = 0)

B = 1+g

t = time period

Vt = Random disturbance term

Equation (1) was converted into the logarithmic form as follows to make it in a linear form,

Ln Yt = ln A + t \* ln B + ln

This is of the following form,

Qt = a + bt+ Ut ..…. (2)

Where,

Qt = ln Y

a = ln A

b = ln B

Ut = ln Vt

The values ‘a’ and ‘b’ were estimated by using Ordinary Least Squares estimation technique. Later, the original ‘A’ and ‘B’ parameters in equation (1) were obtained by taking antilogarithms of ‘a’ and ‘b’ values as;

A = Antilog (a)

B = Antilog (b)

Growth rate (%) was calculated as follows,

g = (B – 1) \* 100

**Coefficient of variation**

In order to analyse the variations in poverty rates and number of people into poverty between the specified periods were calculated and presented using the coefficient of variation (C.V.) using the below mentioned formula,



**Cuddy – Della Valley instability index (CDVI)**

In order to analyse instability in poverty rates and number of people fall into poverty, Cuddy-Della Valle Instability Index was used. The coefficient of variation (CV) was calculated then instability was estimated using the below formula,



Where, R2= Coefficient of determination

**Gini Coefficient**

It is a measure of statistical dispersion intended to represent the income or wealth distribution of a nation's residents and is the most commonly used measurement of inequality. A Gini coefficient ranges from 0 to 1. Gini coefficient of zero reflects perfect equality, where all income or wealth values are the same, while a Gini coefficient of one (or 100%) reflects maximal inequality among values.

The gini coefficient was developed by the Italian statistician Corrado Gini and published in his 1912 paper Variability and Mutability. Building on the work of American economist Max Lorenz, Gini proposed that the difference between the hypothetical straight line depicting perfect equality, and the actual line depicting people's incomes, be used as a measure of inequality and used to estimate how far a country's wealth or income distribution deviates from an equal distribution.

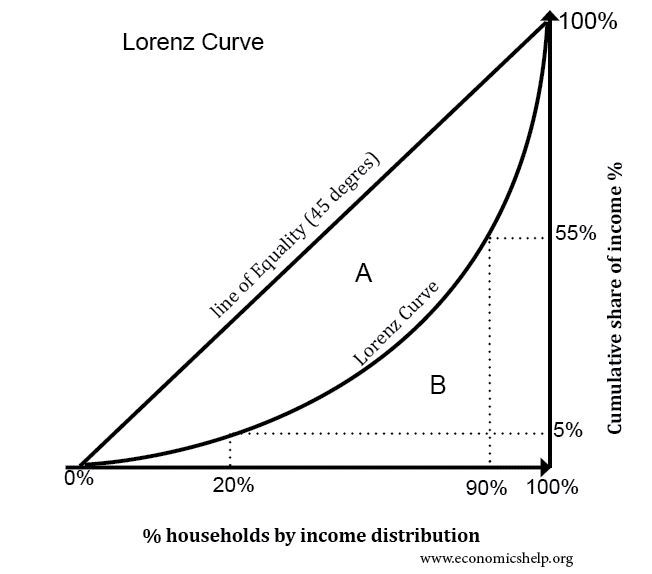
**Lorenze curve**

Lorenz curve is a graphical representation of the distribution of income or of wealth. It was developed by Max O. Lorenz in 1905 for representing inequality of the wealth distribution. The curve is a graph showing the proportion of overall income or wealth assumed by the bottom x per cent of the people. It is often used to represent income distribution, where it shows for the bottom x per cent of households, what percentage (y %) of the total income they have. The percentage of households is plotted on the x-axis, the percentage of income on the y-axis. It can also be used to show distribution of assets, many economists consider it to be a measure of social inequality.

The Gini coefficient is usually defined mathematically based on the Lorenz curve, which plots the proportion of the total income of the population (y-axis) that is cumulatively earned by the bottom x of the population (Fig. 1). The line at 45 degrees thus represents perfect equality of incomes. The Gini coefficient can then be thought of as the ratio of the area that lies between the line of equality and the Lorenz curve (marked A in the diagram) over the total area under the line of equality (marked A and B in the diagram)



If there are no negative incomes, it is also equal to 2A and to 1 − 2B due to the fact that A + B = 0.5.

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**Fig.1 Lorenze curve**

Suppose all people have non-negative income (or wealth, as the case may be). In that case, the Gini coefficient can theoretically range from 0 (complete equality) to 1 (complete inequality) and is sometimes expressed as a percentage ranging between 0 and 100. If negative values are possible (such as the wealth of people with debts), then the Gini coefficient could theoretically be more than 1. Usually, the mean (or total) is assumed to be positive, which rules out a Gini coefficient of less than zero.

To calculate the Gini coefficient without direct reference to the Lorenz curve, taking y to indicate the income or wealth of a person or household; the following formula has applied,

))

this may be simplified to,



This formula actually applies to any real population, since each person can be assigned his or her own yi.

**Range of Gini coefficient**

A Gini coefficient value of zero indicates perfect equality (where everybody has the same wealth/income) and one indicates perfect inequality (that is, where one person owns all the wealth in a country). The different ranges of Gini coefficient were, < 0.2 represents perfect income equality, 0.2 to 0.3 represents relative equality, 0.3 to 0.4 represents adequate equality, 0.4 to 0.5 represents big income gap and the coefficient > 0.5 represents severe income gap (*Lin et al., 2017*).

**Results & Discussion**

It's been seventy five years of independence to India and is one of the fastest growing economies in the world, yet poverty has continued to be an issue of concern in the nation. Hence, it becomes most imperious to note the poverty incidence in the country to identify the major causes of an issue.

**Status of Poverty**

The incidence of poverty from past five decades (1973-1974 to 2011-2012) and its status and extent are presented in Table.1. The number of poor people in the country were declined at the rate of 3.98 per cent over the past decades and the poverty ratio was also declined both in case of rural and urban areas marginally over the years in the country. Similarly in case of Karnataka, the number of poor people were found declining at the rate of 8.93 over the past decades (1973-1974 to 2011-2012) where as in case of urban it has shown increasing trend at the rate of 0.60 per cent. The similar results are observed by *Dang et al. (2021)* poverty fell sharply during this period, falling in poverty level from nearly 50 per cent of the population in 1987-1988 to just over 20 per cent in 2011-2012. The rate of decline in poverty was high in case of rural areas than urban areas which is due to high agriculture development in the rural areas followed by infrastructure and human resource development in rural areas by educating rural women. *Anriquez and Stamoulis (2007)* and *Biradar (2012) quoted the same reasons for reduction in rural poverty as agriculture sector acts as basis for rural* development and poverty reduction.

The poverty ratio was declined over the years both in case of rural and urban areas and the share of rural poor in the total poor population in the country as well as in Karnataka was observed to be very high as compared with urban poor. From the last fifty (1973-1974 to 2011-2012) years the share of rural poor to total poor population has marginally declined in the country (0.94 %), same trend was observed in the Karnataka state it has declined by 3.76 per cent. As compared to urban areas limited access to education, quality infrastructure, employment opportunities, health, sanitation measures and financial resources in rural areas were less. These might be noted as an important reasons for incidence of higher poverty rates in rural areas even though the rural poverty was decreasing than urban due to higher agriculture production. In general, over all poverty reduction can be witnessed due to higher economic growth and development and sustained government efforts through numerous poverty alleviation programmes. The results are in line with the findings of *Mkhize and Hans (2012)*, pointed out that the rural poverty rate declined by 18.3 per cent, while urban poverty by 6.1 per cent, the poverty decline in rural areas is larger than in urban areas was due to significant increase in non- agriculture to agriculture productivity.

**Table.1 Poverty incidence in India and Karnataka (1973-2011)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Year** | **India** | | | | | | | **Karnataka** | | | | | | |
| **Number of poor**  **(in Crores.)** | | | | **Poverty ratio**  **(%)** | | | **Number of poor**  **(in Crores.)** | | | | **Poverty ratio**  **(%)** | | |
| **Rural** | **Urban** | **Total** | **% Share of rural poor to total poor** | **Rural** | **Urban** | **Total** | **Rural** | **Urban** | **Total** | **% Share of rural poor to total poor** | **Rural** | **Urban** | **Total** |
| **1973-74** | 26.10 | 6.00 | 32.10 | 81.31 | 56.40 | 49.00 | 54.90 | 1.28 | 0.41 | 1.70 | 75.29 | 55.14 | 52.53 | 54.47 |
| **1983-84** | 25.20 | 7.10 | 32.30 | 78.02 | 45.70 | 40.80 | 44.50 | 1.01 | 0.49 | 1.49 | 67.78 | 36.33 | 42.82 | 38.24 |
| **1993-94** | 24.40 | 7.50 | 32.00 | 76.25 | 37.30 | 32.40 | 36.00 | 0.96 | 0.61 | 1.57 | 61.14 | 29.88 | 40.14 | 33.16 |
| **2003-04** | 23.50 | 6.90 | 30.40 | 77.05 | 27.90 | 25.10 | 28.50 | 0.75 | 0.64 | 1.39 | 53.95 | 37.50 | 25.90 | 33.40 |
| **2011-12** | 21.70 | 5.30 | 27.00 | 80.37 | 25.70 | 13.70 | 21.90 | 0.93 | 0.37 | 1.30 | 71.53 | 24.50 | 15.30 | 21.10 |
| **Mean** | 24.18 | 6.56 | 30.76 |  | 38.6 | 32.2 | 37.16 | 0.99 | 0.50 | 1.49 |  | 36.67 | 35.34 | 36.07 |
| **C.V. (%)** | 6.98 | 13.62 | 7.26 | 33.02 | 42.49 | 35.03 | 19.41 | 23.63 | 10.43 | 31.57 | 41.62 | 33.47 |
| **CGR (%)** | -4.29\*\* | -2.73\*\* | -3.98\* | -18.66\*\*\* | -26.17\*\*\* | -20.42\*\*\* | -8.93\*\* | 0.61 | -5.88\*\* | -14.70\*\* | -25.69\*\* | -18.38\*\* |
| **CDV Index (%)** | 1.44 | 12.95 | 3.82 | 4.55 | 10.90 | 1.72 | 12.30 | 23.61 | 4.11 | 17.46 | 12.55 | 11.06 |

*Note*: \*\*\*, \*\*, \* indicates the level of significance at one, five and ten per cent respectively. CDV index- Cuddy Della Valley Index

Source: Hand Book of Statistics, RBI, 2021.

**Impact of population growth on poverty incidence**

The relationship between the growth in population and poverty incidence are depicted in Table.2. Among northern states Uttar Pradesh registered with highest population which was increased by 51.30 per cent and the poverty incidence was also increased in Uttar Pradesh by 12.89 per cent from 2001 to 2011, in southern states Andhra Pradesh was the highest populous state which was increased by 27.17 per cent and in case of Kerala it was increased by 14.80 per cent and poverty was decreased vigorously in Kerala (68.59 %) and in Andhra Pradesh (48.83 %). In north eastern India, West Bengal found to be the highly populous state and poverty reduced slowly by 13.76 per cent and Sikkim as less populous state, poverty was declined by 72.22 per cent over three decades. Likewise in western states, Maharashtra found to be the highly populous state where poverty was increased by 42.36 per cent from past three decades but Goa being a smallest state, where poverty has reduced by 57.89 per cent from past two decades (1991-2011).With regard to Union Territories, population has increased over the decades but the poverty incidence has decreased only in Lakshadweep.

Among all the states, Uttar Pradesh records higher growth rate of population as well as higher incidence of poverty whereas Kerala accounted with lesser rates of population growth and lower rates of poverty incidence. The incidence of poverty was higher in highly populated states because of increased life expectancy, increased birth rates, and limited access to resources, problems of malnourishment and minimal employment and income earning opportunities. *Mubarak (2020)* mentioned the similar reasons as higher population growth acts as a serious barrier to regional economic development and significantly effects on poverty reduction rates and increase in unemployment level in that society.

The impact of population growth on poverty reduction was analysed and found that as increase in population growth leads to increase in incidence of poverty, but due to implementation of the various poverty reduction programmes coupled with other welfare schemes have imparted in reducing poverty levels at slower rates over the decades. The results are in consistent with *Das Gupta et al. (2011)* and also quoted the same reasons as hasty population growth as a constraint on economic growth in poor countries and suggested for the lower fertility which helps in better child health and schooling and reduces maternal mortality and morbidity, reduction in population growth increases the higher household earnings.

**Table.2 Population growth vis- a -vis poverty status in India (in lakh)**

| **State** | **1991** | | **2001** | | | **2011** | | **% Change in 2001 over 1991** | | **% Change in 2011 over 2001** | | **% Change in 2011 over 1991** | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Population** | **Poverty** | **Population** | **Poverty** | | **Population** | **Poverty** | **Population** | **Poverty** | **Population** | **Poverty** | **Population** | **Poverty** |
| **I Northern States** | | | | | | | | | | | | | |
| Bihar | 645.31 | 493.40 | 829.99 | 425.60 | | 1040.99 | 358.20 | 28.62 | -13.74 | 25.42 | -15.84 | 61.32 | -27.40 |
| Haryana | 164.64 | 43.90 | 211.45 | 17.30 | | 253.51 | 28.80 | 28.43 | -60.59 | 19.89 | 66.47 | 53.98 | -34.40 |
| Himachal Pradesh | 51.71 | 15.90 | 60.78 | 5.10 | | 68.65 | 5.60 | 17.54 | -67.92 | 12.95 | 09.80 | 32.76 | -64.78 |
| Madhya Pradesh | 485.66 | 298.50 | 603.48 | 298.50 | | 726.27 | 234.10 | 24.26 | 0.00 | 20.35 | -21.57 | 49.54 | -21.57 |
| Rajasthan | 440.06 | 128.50 | 565.07 | 81.80 | | 685.48 | 102.90 | 28.41 | -36.34 | 21.31 | 25.79 | 55.77 | -19.92 |
| Punjab | 202.82 | 25.10 | 243.59 | 14.50 | | 277.43 | 23.20 | 20.10 | -42.23 | 13.89 | 60.00 | 36.79 | -07.57 |
| Uttar Pradesh | 1320.62 | 604.50 | 1661.98 | 529.90 | | 1998.12 | 598.20 | 25.85 | -12.34 | 20.23 | 12.89 | 51.30 | -01.04 |
| **II Southern States** | | | | | | | | | | | | | |
| Andhra Pradesh | 665.08 | 154.00 | 762.10 | 119.00 | | 845.81 | 78.80 | 14.59 | -22.73 | 10.98 | -33.78 | -48.83 | 10.98 |
| Karnataka | 449.77 | 156.50 | 528.51 | 104.40 | | 610.95 | 129.80 | 17.51 | -33.29 | 15.60 | 24.33 | -17.06 | 15.60 |
| Kerala | 290.99 | 76.40 | 318.41 | 41.00 | | 334.06 | 24.00 | 9.42 | -46.34 | 04.92 | -41.46 | -68.59 | 04.92 |
| Tamil Nadu | 558.59 | 202.10 | 624.06 | 213.50 | | 721.47 | 185.00 | 11.72 | -35.43 | 15.61 | -36.70 | -59.13 | 15.61 |
| **III Eastern states** | | | | | | | | | | | | | |
| Assam | 224.14 | 96.40 | 266.56 | 94.60 | | 312.06 | 101.30 | 18.93 | -1.87 | 17.07 | 07.08 | 39.23 | 05.08 |
| Arunachal Pradesh | 8.65 | 3.70 | 10.98 | 4.00 | | 13.84 | 4.90 | 26.94 | 8.11 | 26.05 | 22.50 | 60.00 | 32.43 |
| Manipur | 18.37 | 6.80 | 22.94 | 7.20 | | 28.56 | 10.20 | 24.88 | 5.88 | 24.50 | 41.67 | 55.47 | 50.00 |
| Mizoram | 6.90 | 1.90 | 8.89 | 1.90 | | 10.97 | 2.30 | 28.84 | 0.00 | 23.40 | 21.05 | 58.99 | 21.05 |
| Meghalaya | 17.75 | 7.40 | 23.19 | 8.20 | | 29.67 | 3.60 | 30.65 | 10.81 | 27.94 | -56.10 | 67.15 | -51.35 |
| Nagaland | 12.10 | 5.10 | 19.90 | 5.50 | | 19.79 | 3.80 | 64.46 | 7.84 | -00.55 | -30.91 | 63.55 | -25.49 |
| Odisha | 316.60 | 160.60 | 368.05 | 169.10 | | 419.74 | 138.50 | 16.25 | 5.29 | 14.04 | -18.10 | 32.58 | -13.76 |
| Sikkim | 4.06 | 1.80 | 5.41 | 2.10 | | 6.11 | 0.50 | 33.25 | 16.67 | 12.94 | -76.19 | 50.49 | -72.22 |
| Tripura | 27.57 | 11.80 | 31.99 | 13.00 | | 36.74 | 5.20 | 16.03 | 10.17 | 14.85 | -60.00 | 33.26 | -55.93 |
| West Bengal | 680.78 | 254.60 | 801.76 | 213.50 | | 912.76 | 185.00 | 17.77 | -16.14 | 13.84 | -13.35 | 34.08 | -27.34 |
| **IV Western states** | | | | | | | | | | | | | |
| Goa | 11.7 | 1.90 | 13.48 | 0.70 | | 14.59 | 0.80 | 15.21 | -63.16 | 08.23 | 14.29 | 24.70 | -57.89 |
| Gujarat | 413.10 | 105.20 | 506.71 | 67.90 | | 604.40 | 102.20 | 22.66 | -35.46 | 19.28 | 50.52 | 46.31 | -02.85 |
| Maharashtra | 789.37 | 305.20 | 968.79 | 228.00 | | 1123.74 | 197.90 | 22.73 | -25.29 | 15.99 | -13.20 | 42.36 | -35.16 |
| **V Union Territories** | | | | | | | | | | | | | |
| Pondicherry | 8.08 | 3.3. | 9.74 | 2.40 | | 12.48 | 1.20 | 20.54 | -27.27 | 28.13 | -50.00 | 54.46 | -63.64 |
| Andaman and Nicobar Islands | 2.81 | 2.50 | 3.56 | 1.10 | | 3.81 | 0.80 | 26.69 | -56.00 | 07.02 | -27.27 | 35.59 | -68.00 |
| Chandigarh | 6.42 | 0.80 | 9.01 | 0.50 | | 10.55 | 2.40 | 40.34 | -37.50 | 17.09 | 380.00 | 64.33 | 200.00 |
| Dadra & Nagar Haveli | 1.38 | 0.80 | 2.20 | 0.30 | | 3.44 | 1.40 | 59.42 | -62.50 | 56.36 | 366.67 | 149.28 | 75.00 |
| Delhi | 94.21 | 15.50 | 138.51 | 11.50 | | 167.88 | 17.00 | 47.02 | -25.81 | 21.20 | 47.83 | 78.20 | 09.68 |
| Daman & Diu | 1.02 | 0.20 | 1.58 | 0.10 | | 2.43 | 0.30 | 54.90 | -50.00 | 53.80 | 200.00 | 138.24 | 50.00 |
| Lakshadweep | 0.52 | 0.10 | 0.61 | 0.10 | | 0.64 | 0.00 | 17.31 | 0.00 | 04.92 | -100.00 | 23.08 | -100.00 |
| Jammu and Kashmir | 78.37 | 20.90 | 101.44 | 3.50 | | 125.41 | 13.30 | 29.44 | -83.25 | 23.63 | 280.00 | 60.02 | -36.36 |
| **Regression results** | | | | | | | | | | | | | |
| **Year** | **1991** | **2001** | **2011** | |  | | | | | | | | |
| **Intercept** | -9.5 | -11.08 | -14.83 | |
| **Population variable** | 0.44 | 0.31 | 0.25 | |
| **R2** | 0.86 | 0.82 | 0.86 | |
| **Adjusted R2** | 0.86 | 0.81 | 0.85 | |
| **Standard error** | 0.03 | 0.02 | 0.018 | |
| **t stat** | 13.84\*\*\* | 11.77\*\*\* | 13.70\*\*\* | |

Note: \*\*\* indicates the one per cent level of significance

**Poverty incidence in Karnataka**

The poverty incidence in Karnataka is presented in Table.3. Karnataka state as a whole 13.16 per cent of population were recorded to be poor where 19.01 per cent population were rural poor and 5.07 per cent were urban poor. Wherein northern districts of the state recorded with highest poverty rates (21.28 %) than southern districts with mean average of 21.28 per cent and 9.34 per cent respectively, these results are in consonance with the findings of *Naik et al. (2015)*. These higher poverty rates were due to water scarcity and more susceptible to drought condition due to low precipitation and lack of availability of other water sources and high rate of unemployment due to low literacy level as compared to southern districts of the state. Among all the districts Yadgiri district registered the highest poverty rate (41.67 %) followed by Raichur district with poverty rates of 32.19 per cent it’s mainly because of the extreme climatic conditions such as drought, lack of availability of natural and water resources, districts registers with low literacy level and high unemployment rates due to lack of skills and opportunities whereas Bengaluru district registered lowest poverty rate of 2.30 per cent. This was due to high urbanization, availability of enormous skilled labour and huge employment opportunities with better infrastructure facilities.

**Income inequality in India and Karnataka**

An income inequality in India and Karnataka are depicted Table.4&5. In India per capita income growth rates were increasing unprecedently as it was due to increased income inequality with Gini coefficient of 0.32. The per capita income was found highest in Chandigarh (Rs. 4289.20) and the lowest was in Odisha (Rs. 1284.70). The variation in per capita income was highest in Kerala (375 %) and least in Nagaland (46 %). There was severe income gap in Kerala state with Gini coefficient value of 0.52. This was mainly due to presence of high number of emigrants and immigrants where emigrants have high remittances but immigrants were low earning manual labourers. Many states fall under relative equality category but the lowest was found in Manipur (0.23), indicating that there was more income equality in the state as compared to the other states. In overall Karnataka, the district with highest per capita income was observed in Dakshina Kannada district with big income gap and lowest in Chikkamagaluru district with perfect income equality whereas, only Raichur district (0.68) observed to have severe income gap status. The observed income inequality was due to high quality gap between education, health and sanitation, severe poverty incidence, increased unemployment and low farm earnings to the rural population as compared to non-farm earnings, these results are in line with findings of *Dang and Lanjouw (2018)* which reported that rural non-farm diversification and fall in regular employment particularly in rural areas were increased the income inequality. Wherein, increased literacy rates and improved access to banking services were associated with reduced income equalities. And also thesevere poverty incidence and high unemployment rates were the major reasons to have high income inequality with huge disparities income distribution was reported by *Rizky et al. (2024)* in their study.

The state/district with Gini coefficient value, less than 0.20 indicates perfect income inequality, 0.20 to 0.30 indicates relative equality, 0.30 to 0.40 indicates adequate equality, 0.40 to 0.50 indicates big income gap and more than 0.50 indicates severe income gap. Among all the states, Kerala has highest Gini coefficient with 0.52 and falls under severe income gap and Manipur state recorded the lowest Gini coefficient with 0.23. The income inequality amongst the states of India is presented graphically in Fig.2. The adequate equality was observed with Gini coefficient of 0.32, which depicts that more than 50 per cent of the total country’s income was distributed with nearly 70 per cent of the total population.

Among all the districts, Raichur has highest Gini coefficient with 0.68 and falls under severe income gap and Chikkamagaluru state recorded the lowest Gini coefficient with 0.19. The income inequality amongst districts of Karnataka is shown graphically with lorenze curve analysis in the Fig.3. The districts have adequate equality of income distribution with the Gini coefficient of 0.38.

Fig.2 **Income inequality amongst the states of India**

**Table.3 Poverty incidence in Karnataka (2019-2020)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Districts** | **Head count ratio (%)** | | | **Multidimensional Poverty Index** | | |
| **Rural** | **Urban** | **Total** | **Rural** | **Urban** | **Total** |
| **I. Northern districts** | | | | | | |
| Yadgiri | 48.37 | 20.24 | 41.67 | 0.23 | 0.09 | 0.20 |
| Raichur | 40.50 | 12.47 | 32.19 | 0.18 | 0.06 | 0.15 |
| Koppal | 27.91 | 11.36 | 24.56 | 0.12 | 0.05 | 0.11 |
| Bellary | 28.15 | 16.67 | 23.44 | 0.14 | 0.07 | 0.11 |
| Vijayapur | 27.52 | 7.08 | 22.40 | 0.12 | 0.03 | 0.10 |
| Kalaburgi | 28.33 | 11.58 | 21.75 | 0.13 | 0.05 | 0.10 |
| Gadag | 23.98 | 14.94 | 20.27 | 0.10 | 0.07 | 0.09 |
| Bagalkot | 24.37 | 12.33 | 20.23 | 0.11 | 0.05 | 0.09 |
| Bidar | 25.04 | 5.81 | 19.42 | 0.11 | 0.02 | 0.08 |
| Haveri | 17.37 | 9.06 | 15.61 | 0.07 | 0.04 | 0.06 |
| Uttara Kannada | 16.43 | 5.82 | 13.21 | 0.07 | 0.02 | 0.06 |
| Belagavi | 15.41 | 4.35 | 12.26 | 0.06 | 0.02 | 0.05 |
| Dharwad | 17.92 | 3.72 | 9.65 | 0.07 | 0.02 | 0.04 |
| **Mean** | 26.25 | 10.42 | 21.28 | 0.12 | 0.05 | 0.09 |
| **S.D.** | 9.47 | 5.03 | 8.52 | 0.05 | 0.02 | 0.04 |
| **C.V. (%)** | 36.08 | 48.25 | 40.04 | 41.09 | 53.40 | 45.01 |
| **II. Southern districts** | | | | | | |
| Chamarajanagara | 19.91 | 14.97 | 18.91 | 0.08 | 0.06 | 0.08 |
| Chitradurga | 19.61 | 4.88 | 15.79 | 0.08 | 0.02 | 0.07 |
| Chikkaballapura | 19.16 | 3.67 | 15.16 | 0.08 | 0.02 | 0.06 |
| Tumakuru | 16.31 | 6.48 | 14.00 | 0.07 | 0.03 | 0.06 |
| Shivamogga | 16.00 | 6.16 | 12.72 | 0.07 | 0.02 | 0.05 |
| Davanagere | 16.26 | 2.90 | 11.71 | 0.07 | 0.01 | 0.05 |
| Chikkamagaluru | 12.48 | 5.55 | 11.19 | 0.05 | 0.03 | 0.05 |
| Udupi | 12.20 | 5.20 | 10.32 | 0.05 | 0.02 | 0.04 |
| Kolar | 11.86 | 7.69 | 10.30 | 0.05 | 0.03 | 0.04 |
| Kodagu | 9.97 | 0.20 | 8.74 | 0.04 | 0.01 | 0.04 |
| Bengaluru (Rural) | 9.10 | 6.32 | 8.39 | 0.04 | 0.03 | 0.03 |
| Ramanagara | 10.60 | 3.50 | 8.77 | 0.04 | 0.01 | 0.03 |
| Mysuru | 12.98 | 0.62 | 7.79 | 0.05 | 0.00 | 0.03 |
| Dakshina Kannada | 9.79 | 3.10 | 6.69 | 0.04 | 0.01 | 0.03 |
| Hassan | 8.68 | 0.77 | 6.64 | 0.04 | 0.01 | 0.03 |
| Mandya | 8.04 | 1.02 | 6.62 | 0.04 | 0.01 | 0.03 |
| Bengaluru (Urban) | 5.89 | 1.98 | 2.30 | 0.02 | 0.01 | 0.01 |
| **Mean** | 12.87 | 4.41 | 10.36 | 0.05 | 0.02 | 0.04 |
| **S.D.** | 4.30 | 3.57 | 4.10 | 0.02 | 0.01 | 0.02 |
| **C.V. (%)** | 33.42 | 80.83 | 39.59 | 34.39 | 71.58 | 40.53 |
| **Karnataka** | 19.01 | 5.07 | 13.16 | 0.08 | 0.02 | 0.06 |
| **India** | 32.75 | 8.81 | 25.01 | 0.16 | 0.04 | 0.12 |

*Source*: National Multidimensional Poverty Index Report, GOI, 2021

**Table. 4 Income inequality amongst the states of India**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Sl. No.** | **State** | **Per capita Income (Rs.)** | **C.V. (%)** | **Gini Coefficient** | **Status** |
| **I. Northern States** | | | | | |
| 1 | Himachal Pradesh | 2718.06 | 135 | 0.45 | Big income gap |
| 2 | Haryana | 2712.89 | 158 | 0.39 | Adequate equality |
| 3 | Madhya Pradesh | 1581.99 | 111 | 0.38 | Adequate equality |
| 4 | Uttar Pradesh | 1498.58 | 112 | 0.38 | Adequate equality |
| 5 | Uttarakhand | 2186.77 | 94 | 0.36 | Adequate equality |
| 6 | Rajasthan | 1987.07 | 115 | 0.35 | Adequate equality |
| 7 | Punjab | 2652.06 | 115 | 0.35 | Adequate equality |
| 8 | Bihar | 1317.32 | 70 | 0.30 | Adequate equality |
| **II. Southern States** | | | | | |
| 1 | Kerala | 3685.09 | 375 | 0.52 | Severe income gap |
| 2 | Karnataka | 2237.76 | 194 | 0.43 | Big income gap |
| 3 | Tamil Nadu | 2202.05 | 118 | 0.37 | Adequate equality |
| 4 | Andhra Pradesh | 2168.17 | 96 | 0.36 | Adequate equality |
| **III. Eastern States** | | | | | |
| 1 | West Bengal | 1983.36 | 105 | 0.40 | Big income gap |
| 2 | Chhattisgarh | 1444.57 | 95 | 0.38 | Adequate equality |
| 3 | Arunachal Pradesh | 2187.79 | 78 | 0.37 | Adequate equality |
| 4 | Jharkhand | 1412.88 | 86 | 0.36 | Adequate equality |
| 5 | Odisha | 1284.7 | 91 | 0.36 | Adequate equality |
| 6 | Assam | 1474.44 | 73 | 0.32 | Adequate equality |
| 7 | Tripura | 1499.05 | 61 | 0.30 | Adequate equality |
| 8 | Meghalaya | 1764.71 | 70 | 0.28 | Relative equality |
| 9 | Mizoram | 2077.59 | 52 | 0.27 | Relative equality |
| 10 | Sikkim | 1852.49 | 51 | 0.25 | Relative equality |
| 11 | Manipur | 1441.72 | 48 | 0.23 | Relative equality |
| 12 | Nagaland | 2231.88 | 46 | 0.23 | Relative equality |
| **IV. Western States** | | | | | |
| 1 | Maharashtra | 2362.97 | 111 | 0.39 | Adequate equality |
| 2 | Gujarat | 2180.26 | 99 | 0.35 | Adequate equality |
| 3 | Goa | 3064.93 | 84 | 0.31 | Adequate equality |
| **V. Union Territories** | | | | | |
| 1 | Chandigarh | 4289.8 | 178 | 0.47 | Big income gap |
| 2 | Andaman and Nicobar Islands | 4219.13 | 113 | 0.41 | Big income gap |
| 3 | Dadra & Nagar Haveli | 1902.99 | 100 | 0.39 | Adequate equality |
| 4 | Delhi | 3377.84 | 81 | 0.36 | Adequate equality |
| 5 | Lakshadweep | 3287.3 | 79 | 0.36 | Adequate equality |
| 6 | Pondicherry | 2870.26 | 107 | 0.33 | Adequate equality |
| 7 | Jammu and Kashmir | 1950.77 | 70 | 0.30 | Adequate equality |
| 8 | Daman & Diu | 2176.12 | 48 | 0.26 | Relative equality |
| **Highest** | | Chandigarh  (4289.20) | Kerala  (375) | Kerala  (0.52) | Severe income gap |
| **Lowest** | | Odisha  (1284.70) | Nagaland  (46) | Manipur  (0.23) | Relative equality |

*Note*: Per capita income was calculated for per month

**Table.5 Income inequality amongst the districts of Karnataka**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Sl. No.** | **District** | **Per capita Income (Rs.)** | **C.V. (%)** | **Gini Coefficient** | **Status** |
| **I. Northern districts** | | | | | |
| 1 | Raichur | 3552.8 | 510 | 0.68 | Severe income gap |
| 2 | Uttara Kannada | 2160.95 | 114 | 0.4 | Big income gap |
| 3 | Gadag | 1763.28 | 134 | 0.38 | Adequate equality |
| 4 | Koppal | 1554.08 | 77 | 0.35 | Adequate equality |
| 5 | Dharwad | 1876.55 | 75 | 0.33 | Adequate equality |
| 6 | Bagalkot | 1364.35 | 72 | 0.31 | Adequate equality |
| 7 | Haveri | 1579.96 | 95 | 0.31 | Adequate equality |
| 8 | Bellary | 1399.99 | 72 | 0.31 | Adequate equality |
| 9 | Belagavi | 1410.89 | 83 | 0.3 | Adequate equality |
| 10 | Vijayapura | 1355.1 | 71 | 0.28 | Relative equality |
| 11 | Kalaburgi | 1379.2 | 52 | 0.26 | Relative equality |
| 12 | Bidar | 1384.17 | 48 | 0.24 | Relative equality |
| **II. Southern districts** | | | | | |
| 1 | Dakshina Kannada | 4307.93 | 142 | 0.49 | Big income gap |
| 2 | Kolar | 3134.09 | 193 | 0.46 | Big income gap |
| 3 | Bengaluru urban | 4116.52 | 123 | 0.43 | Big income gap |
| 4 | Chamarajanagara | 2328.97 | 117 | 0.41 | Big income gap |
| 5 | Kodagu | 3434.72 | 102 | 0.39 | Adequate equality |
| 6 | Udupi | 3036.02 | 77 | 0.37 | Adequate equality |
| 7 | Tumakuru | 1956.16 | 86 | 0.36 | Adequate equality |
| 8 | Mysuru | 2316.34 | 83 | 0.36 | Adequate equality |
| 9 | Ramanagara | 2062.1 | 109 | 0.34 | Adequate equality |
| 10 | Bengaluru rural | 2307.65 | 60 | 0.32 | Adequate equality |
| 11 | Mandya | 1938.03 | 106 | 0.31 | Adequate equality |
| 12 | Chitradurga | 1268.83 | 64 | 0.3 | Adequate equality |
| 13 | Shivamogga | 1567.84 | 86 | 0.29 | Relative equality |
| 14 | Davanagere | 1643.79 | 62 | 0.28 | Relative equality |
| 15 | Chikkaballapura | 1884.92 | 46 | 0.24 | Relative equality |
| 16 | Hassan | 1525.75 | 40 | 0.22 | Relative equality |
| 17 | Chikkamagaluru | 1248.36 | 34 | 0.19 | Perfect income equality |
| **Highest** | | Dakshina Kannada  (4307.93) | Raichur  (510) | Raichur  (0.68) | Severe income gap |
| **Lowest** | | Chikkamagaluru  (1248.36) | Chikkamagaluru  (34) | Chikkamagaluru  (0.19) | Perfect income equality |

**Fig.3 Income inequality amongst the districts of Karnataka (Lorenze Curve)**

**Conclusion**

In the realm of rapidly developing and continuously prospering world poverty remains the most elusive social evil to eliminate. For all underdeveloped and developing countries, poverty is one of the innate threats to derail the hard earned socio-economic development. Owing multitude effects rise in poverty bears for rapidly developing country; poverty alleviative measures are only the effective tool to control poverty. From the last few years India is among the countries of fastest growing economy in the world. This bears significant weight on efforts to improve/ ameliorate socio-economic status of 1.4 billion people (as per latest census report its 1.4 billion). However, the efforts in the last seven decades are for reducing poverty provided base but have not brought in desired results, few evidence suggest lives of more than 20 million people starts in poverty and end in it. In India there is direct relation with increasing poverty and deprivation of social endowments / goods viz., food, drinking water, sanitation, shelter and primary health care etc. Therefore the key of alleviating poverty levels relays on provisioning basic amenities. Among all the basic endowments duo food and nutritional security are most crucial and are often considered to be game changer and foundation for reducing poverty levels. For achieving these foundational securities, continuous agriculture development is warranted owning to its strategic position in poverty reduction, sizable economic contribution and growing employment opportunities. Indeed a significant population directly depend on agriculture for their livelihood and more than 70 per cent of rural household population professionally engage in agriculture. Although there was a decline in the growth rate of povery in the Karnataka state (-5.45%) and the country (-3.12%) as a whole, the share of rural poor is significantly higher (71.53% in the state and 80.37% in country) than the urban poor causing wide income disparity between rural and urban poor. Hence, there is a need to focus on strengthening the integrated approach through various rural development programmes for enhancing employment and income in the rural areas.

Disclaimer (Artificial intelligence)

Option 1:

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc.) and text-to-image generators have been used during the writing or editing of this manuscript.

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