World Journal of Advanced Research and Reviews
eISSN: 2581-9615 CODEN (USA): WJARAI
Cross Ref DOI: 10.30574/wjarr
Journal homepage: https://wjarr.com/

(RESEARCH ARTICLE)

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Multidimensional poverty in assam and India: A comparative analysis

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World Journal of Advanced Research and Reviews, 2026, 30(02), 1266-1274

Publication history: Received on 07 April 2026; revised on 13 May 2026; accepted on 16 May 2026

Article DOI: https://doi.org/10.30574/wjarr.2026.30.2.1363

Abstract

Poverty is one of the most serious problems facing the world economy today. Although there is a huge reduction in poverty at the global level, the world is still facing this problem despite having commendable achievements in economic growth. In 2019, about 1.3 billion people were still living below the poverty line in 101 countries (UNDP and Oxford Poverty and Human Development Initiative). India is also achieving great progress in reducing both monetary and multidimensional poverty. According to NITI Aayog's poverty estimation, 2022, within the period 2005-06 and 2015-16, the incidence of multidimensional poverty has declined to 27.5 percent. In the particular case of Assam, the incidence of MPI is found as 32.67 percent, which is higher than the national average. Traditionally, the estimation of poverty is based on a single dimension, i.e., income or consumption. But, poverty is not a one-dimensional rather, it is a multidimensional global phenomenon (Amartya Sen, 1976). The Multidimensional Poverty Index (MPI) measures the poverty of households in three basic dimensions: education, health and standard of living. All three dimensions are given equal weight, and various indicators are used to measure deprivations in each dimension. In this background, the present study, by using secondary data and descriptive and analytical research methods, mainly aims to make a comparative analysis of the status of multidimensional poverty of Assam and India.

Keywords: Multidimensional Poverty; Comparative Analysis; India; Assam

1 Introduction

One of the most serious problems facing the world economy today is poverty. There is no doubt, a huge reduction of poverty is achieved at the global level, but the concern is that the world is still facing this problem despite its commendable achievement in economic growth. At the global level, the absolute poverty (which is measured by the percentage of population living with income less than 1.25 U.S. dollars per day) was 21 % in the year 2010, which fell from 43% and 52% in the years 1990 and 1981, respectively (World Bank report, 2013). But, according to the United Nations Development Programme (UNDP) and Oxford Poverty and Human Development Initiative (OPHD), 2019, about 1.3 billion people were still living below the poverty line in 101 countries.

Over the three decades of planning after independence (1950-1980), the Indian economy had experienced low and volatile growth, popularly known as the "Hindu rate of growth". However, this slow growth rate started to accelerate in the early 1980s (3.5 percent), 1990s (3.7 percent) and around 5.5 percent and more in the 2000s. Viewing the poverty estimation (one-dimensional), regardless of the poverty line used from different Committees, it is seen that poverty in India has been declining, and one can also say that growth in India is inclusive.

But the pace of poverty reduction is relatively slow in India if we compare it with other countries like China, Vietnam and Indonesia. A study conducted by Datt and Ravallion (2002) on the relationship between economic growth and poverty in India, had found that since growth in India after economic reforms is faster, poverty reduction is not able to

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keep the same pace with the higher pace of economic growth. Therefore, elasticity of poverty reduction to GDP growth has declined little.

In India, poverty is considered the biggest challenge for the development of the country. As mentioned by Kapila, Uma (2006), "*High poverty levels are synonymous with poor quality of life, deprivation, malnutrition, illiteracy and low human resource development*" (Chapter 32, pp 922). From the early days of planning after independence, and most specifically from the fifth five-year plan, every government of India focused on poverty elimination as the national policy agenda. India is the hub of approximately one–third of the world's poor people. Including Pakistan and Bangladesh together, almost half of the poor people of the world live in these three countries.

From the beginning, estimation of poverty has remained an important issue in India. Estimation of poverty is important not only for academic purposes, but it is also important for the success of various social welfare programmes aiming at poverty elimination. Historically, the first poverty estimation in India was made by Dadabhai Naoroji in 1901 in his book "Poverty and Un-British Rule in India" at 1867-68 prices. After that, various working groups, scholars, committees, etc., were engaged in estimating poverty in India. Among them, important are: Planning Commission Working Groups' estimations, Study by VM Dandekar and N Rath (1971), Y.K. Alagh Committee (1979), Lakdawala Expert Group (1993), Tendulkar Expert Group (2009), Rangarajan Committee (2014), etc. These committees were continuously engaged in estimating monetary poverty.

But poverty is not a unidimensional as measured by the above-mentioned committees; rather, it's a multidimensional global phenomenon as mentioned by Amartya Sen (1976). The multidimensional poverty index (MPI) measures poverty incorporating multiple dimensions, and for the first time in 2010 HDR (Human Development Report), MPI was introduced in the literature. Initially, the Global MPI was calculated for 109 countries.

2 Background of the Study:

Traditionally, the estimation of poverty is made on a single dimension, i.e., income or consumption, which excludes so many dimensions presently regarded as most important, like health, education, standard of living, etc. Poverty is not only about not having a minimum income for survival. Well-being of people can be negatively influenced by the lack of various necessities like deprivations related to health, illiteracy, undernourishment, unavailability of adequate electricity, clean cooking fuel, sanitation, housing, pure drinking water, etc. MPI includes all these indicators by broadly categorizing them into three dimensions: health, education and standard of living. Thus, the multidimensional poverty measure is not exactly a replacement for monetary poverty. Moreover, MPI is not only concerned with the headcount ratio of multidimensionally poor people, but also it is concerned with the intensity and depth of poverty (NITI Aayog, Baseline Report on National Multidimensional Poverty Index, 2022).

The Multidimensional Poverty Index (MPI) is an index that measures the intensity of poverty and identifies poor people as those who are multidimensionally deprived. It is the only measure that assesses a vivid picture of poor people not only at the national level but inside the countries, states, regions and at the world level. MPI can be an effective analytical measure for the government as it identifies the multidimensionally deprived people, and also shows the interlinkages between various deprivations (Alkire & Santos, 2010). Policymakers, therefore, can get valuable information from MPI to form effective policies to reduce poverty by targeting various deprivations they have suffered.

The Multidimensional Poverty Index (MPI) was introduced in July 2010 in Human Development reports by the Oxford -Poverty and Human Development Initiative (OPHI) and the United Nations Development Programme (UNDP). MPI is a high-resolution lens to estimate and assess poverty because MPI identifies and directly measures the intensity and depth of overlapping deprivations under the three dimensions – health, education and standard of living. Originally, there were 10 indicators under these dimensions, and they are mostly connected with the Millennium Development Goals (MDGs) – 2015. As per the definition, a person is regarded as multidimensionally poor or MPI poor if and only if he/she is deprived of 30% of the dimensions.

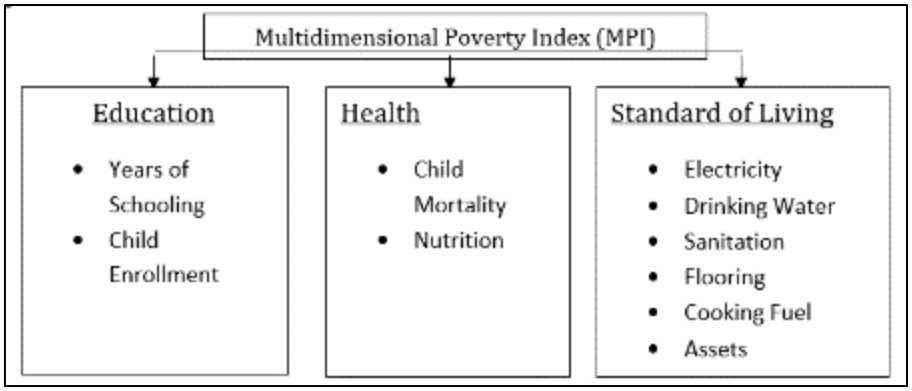

Figure 1 Multidimensional Poverty Index

MPI score is the product of Headcount Ratio (H) and Intensity of MPI (A), which are calculated by using above mentioned dimensions and indicators. Thus, MPI = H x A.

The above-mentioned maximum indicators are included in the Millennium Development Goals (MDGs). MDGs are one of the most widely supported, comprehensive and specific development goals all around the world. With the primary objectives of reducing extreme poverty and other development priorities, world leaders gathered together at the Millennium Summit of the United Nations in September 2000. The participating countries were ready to accept and offer partnership with each other to reduce severe problems like extreme poverty, hunger, deadly diseases, illiteracy, child mortality, and maternal mortality, along with other development priorities. The 8 goals were adopted with a deadline of 2015, and each goal had corresponding targets and indicators to monitor the progress of the respective goals.

Table 1 Millennium Development Goals (MDGs)

Millennium Development Goals (MDGs)
1. To eradicate extreme poverty and hunger
2. To achieve universal primary education
3. To promote gender equality and empower women
4. To reduce child mortality
5. To improve maternal health
6. To combat HIV/AIDS, malaria and other diseases.
7. To ensure environmental sustainability.
8. To develop a global partnership for development.

According to the Millennium Development Goal Report 2015, the world has a strong reason to celebrate because over the 15 years (2000-15) of the MDGs period, millions of people's lives were saved and they got out of poverty. Dramatic and surprising progress is achieved by almost all countries, even by UDCs, in targeted goals, and the credit goes to a successful plan and target regarding MDGs, political will and sound strategies to achieve the goals. For example, the number of people living in extreme poverty in the world has declined to 836 million in 2015 from 1.9 billion in 1990. The world's primary school enrollment has reached 91 percent in the year 2015, which was 83 percent at the start of the year 2000 of the MDGs. Under-five mortality rate of the world has fallen from 90 per thousand in 1990 to 43 per thousand in 2015. Similarly, remarkable success and improvement have been noticed in other goals like gender equality and women empowerment, maternal health, etc. and also in the field of reducing deadly transmissible diseases, achieving environmental sustainability and promoting global partnership for world development.

The MPI identifies the overlapping deprivations of the three basic dimensions – health, education and standard of living. MPI focuses on people rather than countries, unlike many MDGs reports, where efforts were made to identify the percentage of countries that are on track to meet MDGs. But MPI assesses the number of people who are facing multiple

deprivations. Reporting on the percentage of people who are deprived in multiple dimensions, and also finding out the poorest of the poor through MPI assessment, will definitely help the countries to get updated on how far they are going to meet another set of development goal known as Sustainable Development Goals (SDGs) with deadline of 2030. According to the Global MPI report 2022, since India experiences significant poverty reduction, India can achieve SDG (Sustainable Development Goals)-1.2: by 2030, half of the proportion of people, including men, women, and children of all ages living in poverty, will overcome poverty by all its dimensions is possible.

3 Review of Literature

According to Alkire & Foster (2011), multidimensional measures of poverty provide an alternative way to view and understand poverty. Departing from traditional unidimensional measurements of poverty, this study has attempted to develop a practical approach to identify the poor and non-poor, considering multiple dimensions. The authors clearly elaborate the strengths, weaknesses or limitations, and misunderstandings of multidimensional measures of poverty. This study has also described the measurement approach, which includes a "dual cut-off" identification step and an aggregation step that is based on FGT traditional measures.

Ayala et al (2009) have pointed out that the investigation for a significant relationship between income poverty and multidimensional poverty is a matter of concern and has become a central issue in academic literature. But the existing empirical literature has found mostly a weak link between the two. The study has shown that the weak relationship between the phenomena may be because the sample of the household is mostly disaggregated regionally.

Berenger V. (2016) has measured the multidimensional poverty in three Southeast Asian countries, Cambodia, Indonesia and the Philippines. The study has also compared the different types of multidimensional poverty measures. The results of the study indicate that, irrespective of the poverty measures used, Cambodia is found to have the highest level of poverty among Indonesia and the Philippines. However, the AF approach of multidimensional poverty measure shows that over time, multidimensional poverty has decreased in all three countries.

Mothkoor & Badgaiyan (2021) have attempted to measure multidimensional poverty in India for the time period from 2014-15 to 2017-18 by using the NSSO data. The study has used four dimensions, namely income, health, education and standard of living, to measure the multidimensional poverty index (MPI). The study has found that over the study period, the MPI headcount significantly declined from 26.9 % to 13.75%. According to this study, deprivation steeply declined in rural areas in comparison to urban areas over the study period.

In the particular case of North-East India, including Assam, very few studies are found in the literature on multidimensional poverty. Maity S et al (2000) have aimed at investigating the multidimensional poverty status of Bodos and also have tried to find out the influencing factors. The results have identified that the targeted population is multidimensional poor. The important determinants or influencing factors of multidimensional poverty are: literacy, health, employment status and monthly consumption expenditure. Gogoi N. (2020) has examined the multidimensional poverty situation and its determinants among the tea garden labour community of Dibrugarh district, Assam. The study has applied AF (2011) methodology on 304 households to estimate MPI, and the results of the study have shown that the value of MPI for the targeted population is 0.210, which represents acute multidimensional poverty.

3.1 Objectives of the Study

- To Understand the Status of Multidimensional Poverty in India.
- To make a comparative analysis of the Multidimensional Poverty of Assam and India.

4 Methodology

- Data: The present study is based on secondary data, which are collected from various sources like the Census of India, Human Development Reports, World Bank Reports, Reports of NSSO (Various Rounds), NITI Aayog estimations relating to multidimensional poverty, various books, journals, research articles, etc.
- Methods: The present study is based on mixed research methods due to the nature and objectives of the study. It is a combination of descriptive and analytical research methods. To fulfill the objectives and present the quantitative data, tables are used for a better explanation of the study.

5 Findings and Discussion

5.1 During the initial period, OPHI estimated the Multidimensional Poverty Index by using the data of 104 countries. The MPI 2010 was constructed mainly to identify poverty multidimensionally in Less Developed Countries (LDCs). The results of this analysis are summarized below:

- 1.7 billion people (about) in 104 countries (which were covered for MPI estimation) live in MPI poverty. It means one third of their total populations (5.8 billion) were multidimensionally poor.

Table 2 Regional Distribution **of** People Living in MPI Poverty

Regional Distribution of People Living in MPI Poverty	
Regions	Percentage of MPI Poor People
South Asia	51%
Sub-Saharan Africa	28%
Latin America and Caribbean	3%
East Asia and the Pacific	15%
Central and Eastern Europe and the CIS	1%
Arab States	2%

Source: Alkire & Santos (2010)

- 51 percent of poor people (844 million), i.e., half of the poor people of the world was live in South Asia.
- 28 percent or 458 million poor people, who were more than one fourth of the World's total poor were lived in Africa.
- The incidence of multidimensional poverty was found to be highest in two regions – Sub-Saharan Africa, 64.5 percent and South Asia, 55 percent.
- In the case of intensity of poverty, the picture was the same. Sub-Saharan Africa and South Asia were again the two regions where the intensity of poverty was greatest.
- Niger was the poorest country with the highest MPI, where 93 percent people lived in poverty and on average, this country was 69 percent deprived of the indicators adopted for the measurement of MPI.
- The Multidimensional Poverty Index reflects poverty with a distinct and wider aspect. The MPI 2010 reflected the difference between income poverty and multidimensional poverty for some particular countries. For example, in Ethiopia, only 39 percent of people were living in extreme income (monetary) poverty, but the Multidimensional Poverty estimation showed that 90 percent of people were facing multidimensional poverty. A similar case was found in the case of Pakistan, where 51 percent people are MPI poor. On the other hand, 23 percent of people only lived under extreme income poverty.

In the particular case of India, eight Indian States, namely Bihar, Jharkhand, Chhattisgarh, Madhya Pradesh, Rajasthan, Odisha, Uttar Pradesh and West Bengal were home to the highest multidimensional poverty as per the MPI 2010 estimation. Presently in India, poverty estimation is carried out by the NITI Aayog Task Force and for this estimation, data is collected from the National Sample Survey Office (NSSO). In 2021, NITI Aayog released the multidimensional poverty index. According to this estimate, within the period 2005-06 and 2015-16, the incidence of multidimensional poverty has declined to 27.5 percent, which clearly shows that India is achieving great progress in reducing multidimensional poverty. Nowadays, India is achieving commendable economic growth. Therefore, as expected, India has achieved a huge, remarkable reduction of the MPI value during the period 2015-16 and 2019-21.

The following points highlight about MPI progress in India as per NITI Aayog's Progress Report 2023:

Table 3: Multidimensional Poverty in India

Year	**Headcount-Ratio (H)**	**Intensity of Poverty (A)**	**MPI (H x A)**
2015-16	24.85 %	47.14 %	0.117
2019-21	14.96 %	44.39 %	0.066

Source: Collected from NITI Aayog MPI Progress Report, 2023

- MPI value declines from 0.117 to 0.066 during the period 2015-16 and 2019-21.
- As the table shows, there is a steep decline in the headcount ratio during the same period from 24.85 % to 14.96 %.
- About 135 million people (or approximately 13.5 crore) in India are affected by multidimensional poverty.
- NITI Aayog considers 12 indicators under the three dimensions – health, education and standard of living. All 12 indicators showed improvement, which implies the effectiveness of government interventions in this field.
- The intensity of multidimensional poverty that explains finding out the poorest of the poor or average deprivations among the multidimensionally poor people has shown improvement. The intensity of poverty reduced from 47.14 % in 2015-16 to 44.39 % in 2019-21.
- Nutrition, years of schooling, cooking fuel and sanitation – these indicators are playing a significant role in the reduction of the value of MPI.
- The value of MPI is found to be decreased in both rural and urban areas. But the reduction is fastest in rural areas in comparison to urban areas. So, disparities were found in rural and urban areas in the case of headcount ratio, intensity of poverty and value of MPI.
- State-wise wise Bihar experienced the fastest reduction of MPI value, from 51.89 % (2015-16) to 33.76% (2019-21). In 2015-16, Bihar had the highest MPI value among all the Indian states.

The second and third fastest reduction of the MPI value is seen in Madhya Pradesh and Uttar Pradesh, respectively. The highest multidimensionally poor people in India lives in Uttar Pradesh (3.43 crore in the last five years), which is followed by Bihar (with MPI poor people 2.25 crore) and Madhya Pradesh (with MPI poor people 1.36 crore).

5.2 Let us discuss the MPI of the Indian state of Assam, which is situated in the North-Eastern Region of India. Our objective is to make a comparative analysis of the multidimensional poverty of Assam with the national average. The following table (Table 4) displays the headcount ratio, intensity of poverty and the value of MPI for both Assam and India for the period 2015-16 and 2019-21.

Table 4 The Headcount Ratio, Intensity of Poverty and the MPI Value of Assam and India

	India		**Assam**	
Years	2019-21	2015-16	2019-21	2015-16
Headcount Ratio (H)	14.96%	24.85%	19.35%	32.65%
Intensity (A)	44.39%	47.14%	44.41%	47.88%
MPI (H x A)	0.066	0.117	0.086	0.156

Source: Collected from NITI Aayog MPI Progress Report, 2023

In the particular case of Assam, in both periods, the values of MPI, headcount ratio and intensity of poverty are higher. Although there is a slight difference between the values of intensity, but significant difference is noticed in the values of headcount ratio, which implies the percentage of people who are MPI poor is highest in Assam in comparison to the All India average. Although there is a huge reduction of MPI poor people within the state from 32.65 % in 2015-16 to 19.35% in 2019-21 but the headcount ratio is higher in the state. However, India, on average, has also achieved a huge reduction in the headcount ratio from 24.85% to 14.96% during the same period. The MPI value of Assam in 2019-21 is 0.086, whereas the MPI value of India for the same period is 0.066.

The disparities have been noticed in multidimensional poverty in both rural and urban areas if we compare it within the state, and there is also a difference between the rural multidimensional poverty between all India values and the values of Assam. A similar case is noticed regarding urban MPI. Tables -5 and 6 highlight these things. Both rural and urban MPI are higher in Assam. Reduction of rural poverty is sharpest if we compare it with the reduction of urban MPI for both Assam and India. The percentages of people living in multidimensional poverty in Assam in both rural and urban areas are higher in Assam.

Table 5 Multidimensional Poverty in Rural and Urban India

Year	Rural			Urban		
	MPI	**Headcount Ratio (H)**	**Intensity of Poverty (A)**	**MPI**	**Headcount Ratio (H)**	**Intensity of Poverty (A)**
2019-21	0.086	19.28%	44.55%	0.023	5.27%	43.10%
2015-16	0.154	32.59%	47.38%	0.039	8.65%	55.27%

Source: NITI Aayog's Progress Review,MPI, 2023

Table 6 Multidimensional poverty in Rural and Urban Assam

Year	Rural			Urban		
	MPI	**Headcount Ratio (H)**	**Intensity of Poverty (A)**	**MPI**	**Headcount Ratio (H)**	**Intensity of Poverty (A)**
2019-21	0.095	21.41%	44.50%	0.029	6.88%	42.61%
2015-16	0.174	36.14%	48.06%	0.043	9.94%	43.57%

Source: NITI Aayog's Progress Review, MPI, 2023

Indicator-wise, the highest contribution to Assam MPI was from the Nutrition indicator, which is 29.47% followed by Years of Schooling (16.50%) and Maternal Health (11.49%). The lowest contribution is coming from the bank account with 0.95%. Position-wise, the same picture is seen in the case of national MPI, with a slight variation of values. In case of school attendance, however significant disparity in contribution is noticed where this indicator's contribution to national MPI is higher (9.10%) in comparison to Assam MPI (6.03%).

Table 7 Indicator wise Contribution to MPI (Assam and India) – 2019-21

Dimensions	**Indicators**	**Contribution to MPI**	
		Assam	India
Health	Nutrition	29.47%	29.86%
	Child & Adolescent Mortality	1.04%	1.48%
	Maternal Health	11.49%	11.73%
Education	Years of Schooling	16.50%	16.65%
	School Attendance	6.03%	9.10%
Standard of Living	Cooking Fuel	9.26%	8.82%
	Sanitation	5.90%	6.63%
	Drinking Water	2.84%	1.60%
	Electricity	2.29%	1.32%
	Housing	10.10%	8.65%
	Assets	4.14%	3.39%
	Bank Account	0.95%	0.78%

Source: NITI Aayog Progress Review, MPI, 2023

District-wise highest and lowest contribution of Assam to MPI for the period 2019-20 is summarized below.

Table 8 District wise contribution to MPI (2019-20)

	Highest Five	**Lowest Five**
Headcount Ratio	Hailakandi (36.22%)	Kamrup Metro (5.63%)
	Karimganj (32.93%)	Sivsagar (10.28%)
	Cachar (30.58%)	Nalbari (11.24%)
	South Salmara Mankachar (28.24%)	Jorhat (11.49%)
	Dhubri (26.02%)	Dibrugarh (12.26%)
MPI value	Hailakandi (0.164)	Kamrup Metro (0.024)
	Karimganj (0.153)	Jorhat (0.051)
	Cachar (0.140)	Kamrup (0.053)
	South Salmara Mancachar (0.131)	Dhemaji (0.056)
	Dhubri (0.116)	Dibrugarh (0.056)

Source: NITI Aayog Progress Review, MPI, 2023

6 Conclusion

Departing from traditional unidimensional measurements of poverty, the multidimensional poverty index has attempted to develop a practical approach to identify the poor and non-poor, considering multiple dimensions. From this study, we have come to know that the incidence of multidimensional poverty in both Assam and India has been reduced significantly. This is a positive sign, and if our country moves forward at the same pace in poverty reduction, then we can definitely fulfill the Sustainable Development Goals (SDGs) 1.2 target of India that: by 2030, half of the proportion of people, including men, women, and children of all ages living in poverty will overcome poverty by all its dimensions is possible. MPI helps to identify the multidimensionally poor people, and this definitely helps to achieve targeted policy goals related to these particular dimensions.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

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