Poverty In North East India: An Overview

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Abstract:
This paper seeks to provide an overview of the variations in multidimensional poverty in north-eastern states of India. The study is based entirely on secondary sources of data. From the analysis of incidence and intensity of multidimensional poverty of the eight states in North- East India, it is found that there are wide variations in the magnitude of poverty among the states. Therefore, poverty and deprivation is a deep rooted problem in these states. The analysis of dimensions and indicators of the MPI values reveals that there are has been a considerable decline in the incidence of poverty among the states during the period 2015-16 and 2019-21. And finally, we also examine the ceteris paribus effect of education on poverty. This finding lands support to our argument that higher educational attainment leads to the lower level of poverty. Therefore, reforms in educational sectors are to be undertaken to achieve a higher education for building more capabilities and skills to give a boost to economic development and eradication of poverty.

Keywords: *Multidimensional poverty, North- East India, Magnitude, Education, Ceteris Paribus Effect.*

I. Introduction:

Survival for the human beings in this universe is a struggle. They always need certain minimum level of food and non-food items to survive. Any individual who fails to meet this level of minimum consumption is termed as poor. There is no commonly agreed definitions poverty. Specifically, poverty is a situation of deprivations of people in foods like rice or breads and non-food such as health, education, sanitation or housing and other essential means to live the life fullest. Poverty is a great barrier for a country like India in its path of development. Those unable to access even two square meals a day are considered to be the most severely deprived and hunger exists even in the supposedly better parts of India (Mehta & Shah, 2000). In the present paper an overview of the extent of poverty in north-eastern region of India is provided so as to give an insight of the multidimensional poverty and deprivation. It tries to identify the states that have high incidence of poverty for understanding their relative deprivations in the country. Different dimension indicators of multidimensional poverty are analyzed, the relationship between poverty and education are studied and variations in dynamics of poverty across the states of this region are identified. The paper briefly looks into the extent to which the incidence of poverty has declined over the years and concludes with a summary of the key findings.

II. Understanding the Concept of Poverty:

Now-a-days, the concept of poverty is viewed as multidimensional because it implies a situation where the individual lack ownership of access to physical, social or financial assets like land, housing, literacy, longevity, money and voice. In the early twentieth century, income was considered as sole determinant of poverty, which meant less attention

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was paid to the duties faced by the poor people. A minimum level of income had been used to give a monetary value to the "minimum necessities for maintenance of merely physical efficiency" (i.e. food, clothing, rent, fuel, light etc.). But in the mid 1970s, a new approach called the basic needs approach has evolved which emphasized providing people their basic needs as opposed to merely increasing income. Again, Sen (1981) posited that, a list of basic needs should be determined along with minimum level of satisfaction and called it 'direct method' of poverty identification. This direct method assesses human deprivation in terms of shortfalls from minimum levels of basic needs. This implies that this method provides a more comprehensive measure of poverty complementation monetary with non-monetary information for a complete picture of poverty. Because measuring poverty only with a single income or expenditure measure is an imperfect way to understand the deprivations of the poor.

However, in the year 2010, Sabina Alkire and James Froster developed a robust measure of poverty known as Multidimensional Poverty Index (MPI) which was adopted by the UNDP to measure or assess poverty in its multiple dimensions. This index complements the monetary measures of poverty with information on overlapping deprivations experienced simultaneously by individuals. The MPI measures poverty across its multiple dimensions of health and nutrition, education and standard of living. The MPI is based on 10 indicators—health, child mortality, years of schooling, school attendance, cooking fuel, sanitation, drinking water, electricity, housing and asset. The global MPI is unique as it identifies individuals (at the macro level) deprived in overlapping multiple dimensions and captures both the extent and intensity of poverty (Alkire and Santos, 2010). Eradication of poverty is one of the most significant objectives of United Nations Development Programme (UNDP's) principal Sustainable Development Goals (SDGs). Although, the number of people living in severe poverty reduced by more than half between 1990 and 2015, 783 million people around the world are multidimensional poor (World Bank, 2018; OPHI, 2019; UNDP,2019).

India is a home to one- sixth humanity of the world. Among all other socio-economic problems, poverty is a major threat in India's development experience. Therefore, there had been continuous significant strides among the development planners such as Dadabhai Noraji of the country since early twentieth century. However, the more systematic efforts have been made in the successive planning periods to reduce or eliminate poverty in India. In fact, the elimination of poverty in all forms is at the core of India's development agenda. Thereupon, India is on the path of achieving the SDGs target of 1.2 of reducing multidimensional poverty. There has been a decline of 39.92 percentage points in the number of India's poverty from 54.88 percent in 1973-74 to 26 percent in 2019-21. Notwithstanding, India has come across a long way in reducing the problem of poverty and hunger, one- fifth of its population is still under the roof of poverty. This implies that even after 75 years of Independence and remarkable economic growth, the persistence of poverty is a barrier against development as a whole.

III. Objectives and Methodology:

However, the magnitude of poverty varies across different regions of the country. Like whole of India, poverty is also a notable problem in north-east India. The present study has made an attempt to examine the regional variations of MPI in north eastern states of India. To investigate the multidimensional poverty in this region of North-East India, we set the following objectives. First, we study the incidence and intensity of multidimensional poverty of the eight states in North East India. Second, we determine the relative position of the North East India with the national averages poverty level based on the multidimensional poverty Index values. And finally, we also examine the ceteris paribus effect of education on poverty.

With a view to monitoring the performance of Indian states and union territories in addressing MPI, the government of India has followed the Global MPI methodology as a tool for driving systematic reforms and growth. In this context, the government of India has vested the responsibility to the NITI Aayog to construct the MPI in India. Like the Global MPI, the India's National MPI has also three dimensions and 12 indicators as mentioned in

the preceding section. The construction procedures of the national MPI can be summarized as follows:

The national MPI comprise the following indices:

(i) Headcount Ratio (H): It can be defined as the multidimensionally poor in the population, which is arrived by dividing number of multidimensional poor persons by total population.

(ii) Intensity of Poverty (A): It is the average proportion of deprivations which is experienced by multidimensionally poor individuals.

The **MPI** value is arrived at by multiplying the Headcount Ratio (H) and the Intensity of Poverty (A), reflecting both the share of the people in poverty and the degree to which they are deprived. Therefore, the MPI can be presented as ----

MPI= H×A

This study uses the MPI Baseline Report, 2021, published by the NITI Aayog which was computed from the 5th Round of National Family and Health Survey (NFHS), 2019-21.

Having outlined the details of research agenda, let us have an overview of the India's incidence of multidimensional poverty at a glance:

Table-1: India's Multidimensional Poverty at a Glance:

Year	Headcount Ratio (H)	Intensity of Poverty (A)	MPI(H×A)
2005-06	53.7%	52.7%	0.283
2015-16	24.85%	47.15%	0.117
2019-21	14.96%	44.39%	0.066

Source: NFHS 5th Round, 2019-21.

As it can be observed from the table-1 that the proportion of people who are multidimensionally poor (H) have declined by 28.85 percentage points between 2005-06 and 2015-16 and by 9.89 percentage points between 2015-16 and 2019-21. The MPI has also recorded a decline from 0.283 to 0.117 and further to 0.066 during the same period. This inarguably indicates the fact that India is well on course to achieve a country which have very low level of poverty and deprivation. Now if we have a closer look at the multidimensional poverty in the north-east India as presented in figure-1, it can be observed that the percentage of people in multidimensional poverty in north east India is found to be lower than the national average values over the successive periods. In India, 53.7 percent population was multidimensionally poor against 46.18 percent in north-east region in 2005-06. However, there has been a decline in poverty levels over the years 2015-16 and 2019-21. Finally, in 2019-21, it declined to 14.96 percent for India as whole and 13.18 percent for north-eastern India. Therefore, the incidence of poverty among the northeastern states was falling down that lead to reduction in the MPI value. Thus, the magnitude of poverty is lower in north-east region as compared to the all India level.

Figure-1 Percentage of People in Multidimensional Poverty in India and North-East in 2005-06, 2015-16 & 2019-21
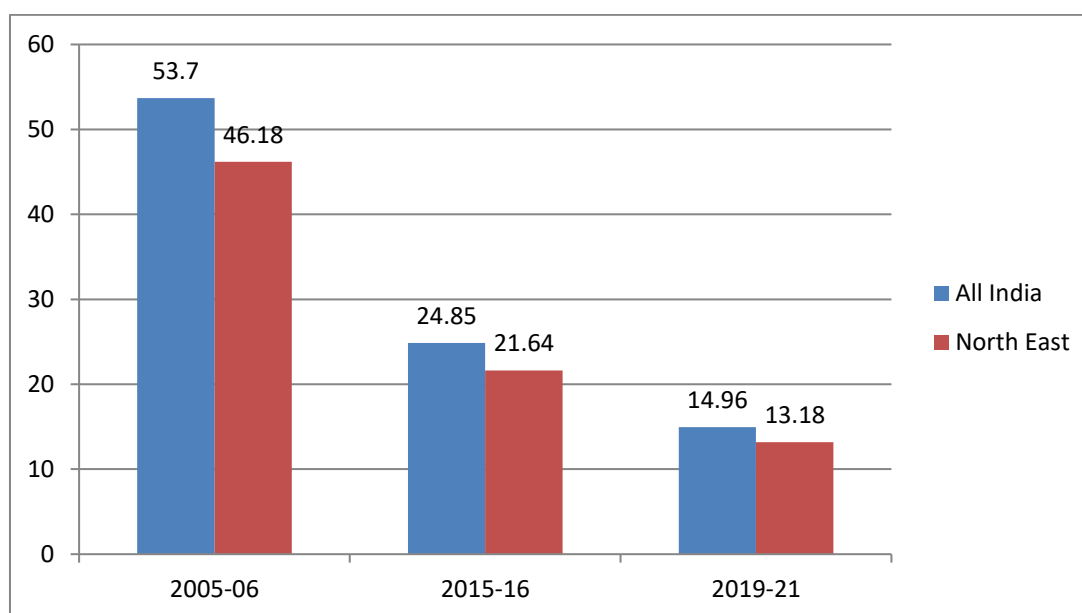
Source: Author's Calculation from UNDP Report on Multidimensional

Poverty, 2022 and OPHI.

For a more detailed analysis of poverty we will look into the dimensions and indicators of the MPI values. Then these values will be compared with the national average value to have an idea how north-eastern states are maneuvering in eliminating the problem of poverty in the region.

Table-2 Magnitude of MPI in Different North Eastern States

| States	2015-16		2019-21		Change	
	Headcount Ratio (H)	MPI	Headcount Ratio (H)	MPI	Change in H	Change in MPI
Assam	32.65	0.156	19.35	0.086	13.3	0.07
Arunachal Pradesh	24.23	0.115	13.76	0.059	10.47	0.056
Manipur	16.96	0.076	8.10	0.034	8.86	0.042
Meghalaya	32.54	0.156	27.79	0.133	4.47	0.023
Mizoram	9.78	0.046	5.30	0.024	4.48	0.022
Nagaland	25.16	0.116	15.43	0.066	9.73	0.1
Sikkim	3.82	0.016	2.60	0.011	1.22	0.005
Tripura	16.62	0.075	13.11	0.056	3.51	0.019
India	**24.85**	**0.117**	**14.96**	**0.066**	**9.98**	**0.051**

Source: NFHS 4th 2015-16 and 5th Round, 2019-21.

It is evident from the table-2 that there are wide variations among the states of the incidence of poverty. Assam, Meghalaya and Nagaland recorded a higher percentage of multidimensional poverty i.e. Headcount Ratio than the national average of 24.85 percent in both 4th and 5th NFHS Rounds. Sikkim followed by Mizoram has lowest poverty rates among the other states of the region. Similarly, the MPI value was higher in Assam (0.156) followed by Meghalaya (0.156) exceeding the all India level (**0.117**) and lowest in Sikkim (0.016) and Mizoram (0.046) during 2015-16. But, in 2019-21, there has been a decline in the MPI values across states. However, the MPI value was higher in Meghalaya (0.133), followed by Assam (0.086), and Nagaland (0.066), whereas it was lower in Sikkim (0.011) followed by Mizoram (0.024), Manipur (0.034), in 2019- 21. That is, The MPI value was continuing to be higher in Assam and Meghalaya over the decade (2015-16 to 2019-21). Thus it can be commented that there are has been a considerable decline in the incidence of poverty among the states during the period.

In the preceding section we have examined the state-wise percentage of population who are multidimensionally poor and their relative disparities with reference to the national average. As outlined, the MPI has three dimensions and three indicators. Therefore, a closer look at how much or to which extent the states have been lagging behind in each component of the MPI will enable us to understand the level of deprivations.

First of all, if we peep at the deprivations in different health indicators such as nutrition, as presented in figure-2&3, child and adolescent mortality and maternal health, it is observed that Assam followed by Meghalaya and Tripura are much deprived in nutrition as compared to the other states of the region. In case of deprivation in maternal health, highest deprivation is seen in the state of Nagaland followed by Meghalaya and Assam. However, surprisingly, all the states except Meghalaya are facing much less deprivation in child and adolescent mortality.
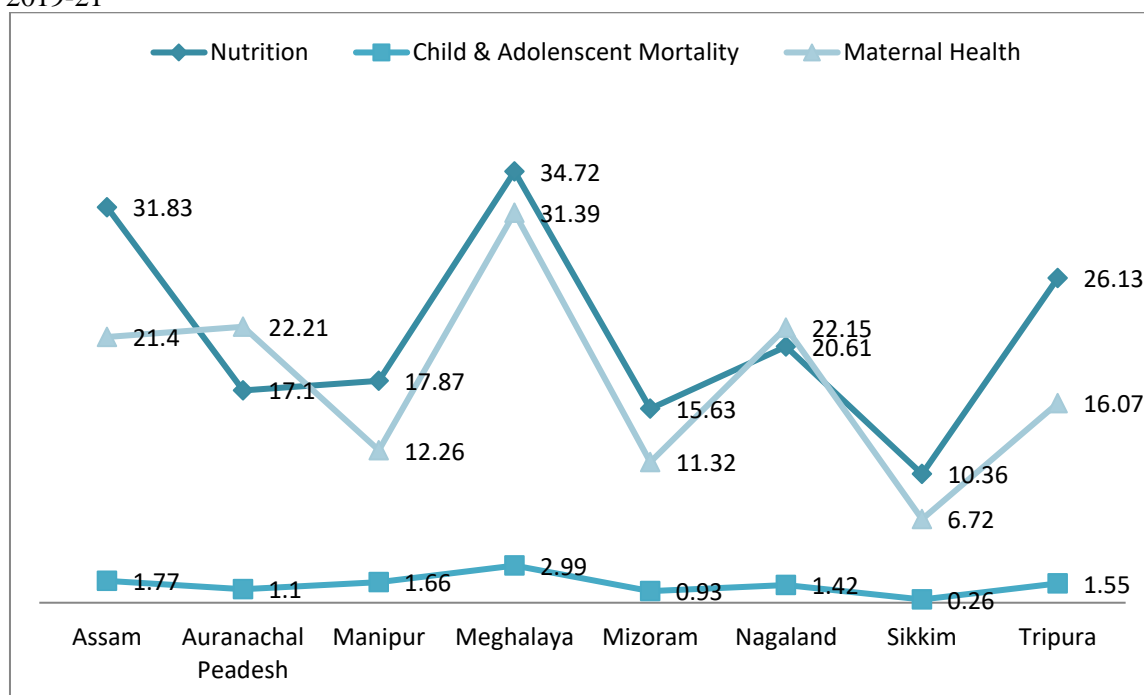
Figure-2 State-Wise Percentage of Population Deprived in Different Health Indicators in 2015-16
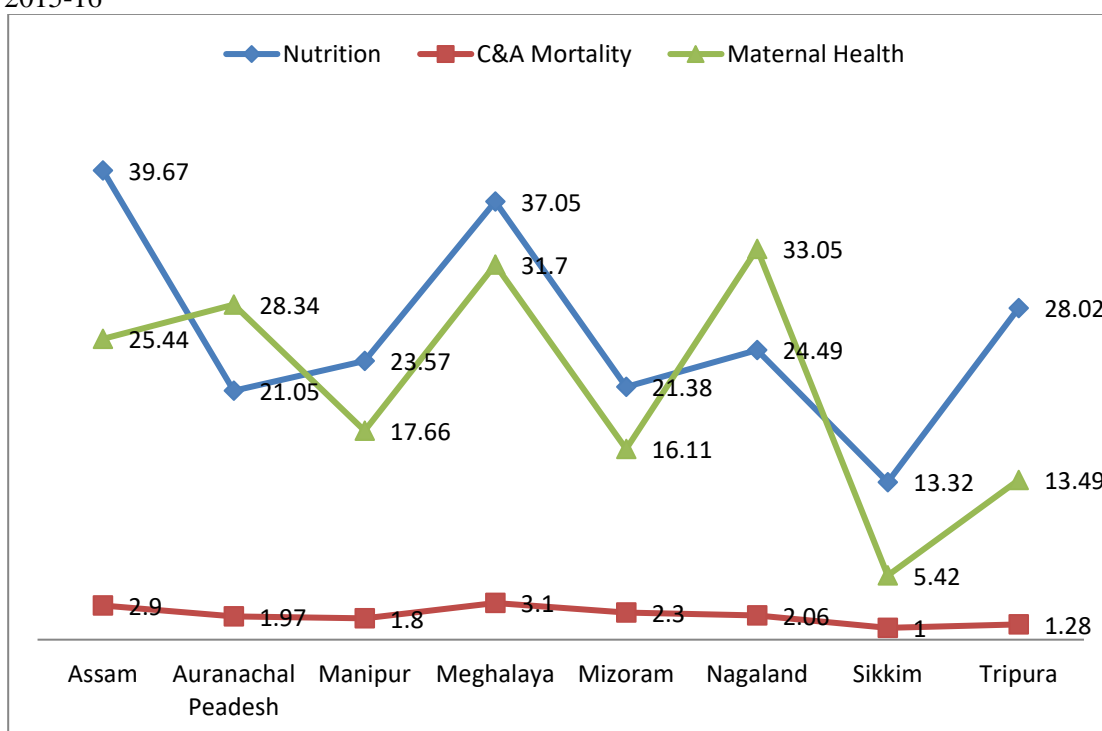
Source: NFHS 4th 2015-16

This indicates that a very less percentage of population is prone to child and adolescent mortality in the region. After all there is still a significant percentage of people are deprived in those health indicators implying poverty, hunger and malnutrition. However, in 2019-21, states are experiencing gradual improvement in each of the health indicators and hence minimizing the poverty problem.

Figure-3 State-Wise Percentage of Population Deprived in Different Health Indicators in 2019-21

Source: NFHS 5th 2019-21.

Likewise, the percentage of deprived population in different educational indicators such as years of schooling and school attendance reveals that there are variations among the states. The highest percentage of population found deprived in terms of years of schooling is in Meghalaya followed by Auranachal Pradesh and Assam in 2015-16. But, in 2019-21, the level of deprivations has come down to some extent. Again, the deprivation in school attendance was also found to be higher in Auranachal Pradesh followed by Meghalaya and Assam. This clearly is an indication of the fact that a large section (about 15 percent) of population in this region is still found to be deprived from the school education and also about 5 percent population is deprived in even school attendance. This deprivation in educational attainment perpetuates the problem poverty. Therefore, improvements in education are a necessary pre-condition for eradication of social evils like poverty and unemployment.

Figure-4 State-Wise Percentage of Population Deprived in Different Education Indicators in 2015-16 & 2019-21
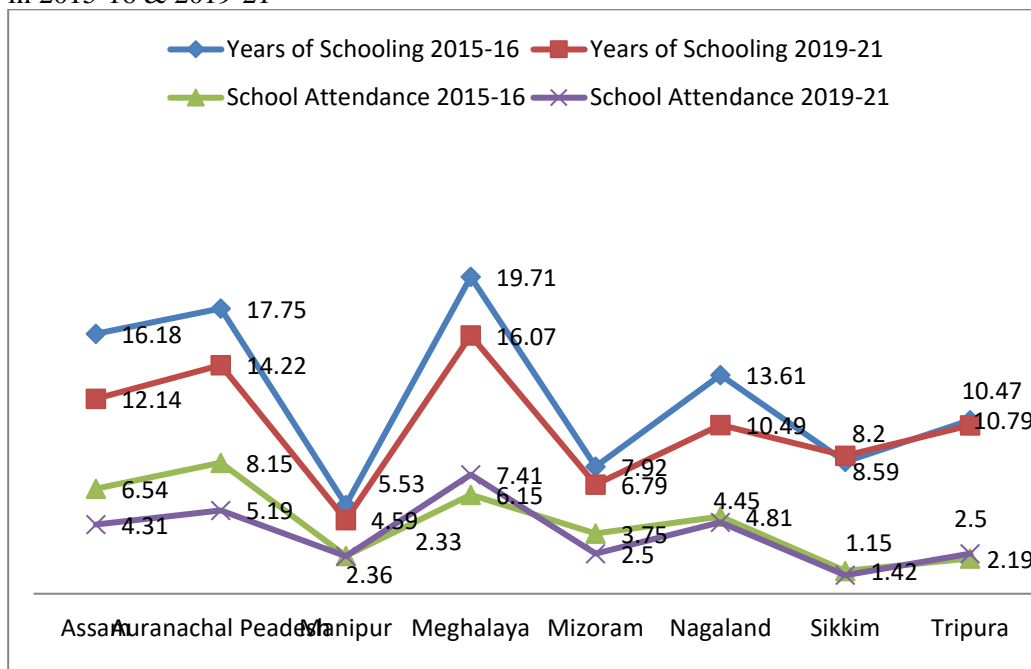
Source: NFHS 4th 2015-16 and 5th Round, 2019-21.

Now, if we turn to another dimension of poverty i.e. deprivation in different indicators of standard of living as presented in figure-5&6, it is observed that during 2015-16, among different indicators of standard of living, all the north-eastern states are mostly lagging behind in housing and improved source of cooking fuel. Manipur is most deprived state in housing with 81.49 percent population do not possess house followed by Auranachal Pardesh (76.14 percent) and Assam (75.89 percent). Likewise, in Assam 77.12 percent population is deprived in cooking fuel followed by Meghalaya (77.08 percent) and Nagaland (69.28 percent). Sikkim and Mizoram are the states with maximum attainments in different parameters of standard of living.

Figure-5 State-Wise Percentage of Population Deprived in Different Indicators of Standard of Living in 2015-16
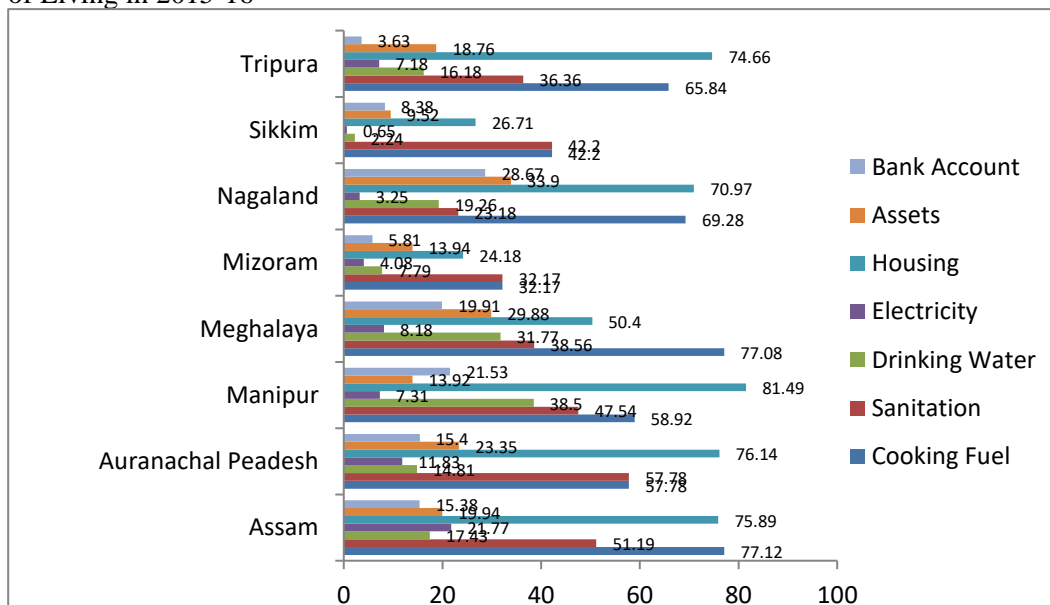
Source: NFHS 4th 2015-16.

However, in 2019-21, as presented in figure-6, there has been an improvement in different indicators of standard of living across the states. But the states like Auranachal Pradesh, Manipur, Nagaland and Meghalaya have been facing relatively much deprivation as compared to the other states. Therefore, the point is that expect Sikkim and Mizoram, people of all other states in the region have low level of living standard.

Figure-6:State-Wise Percentage of Population Deprived in Different Indicators of Standard of Living in 2019-21
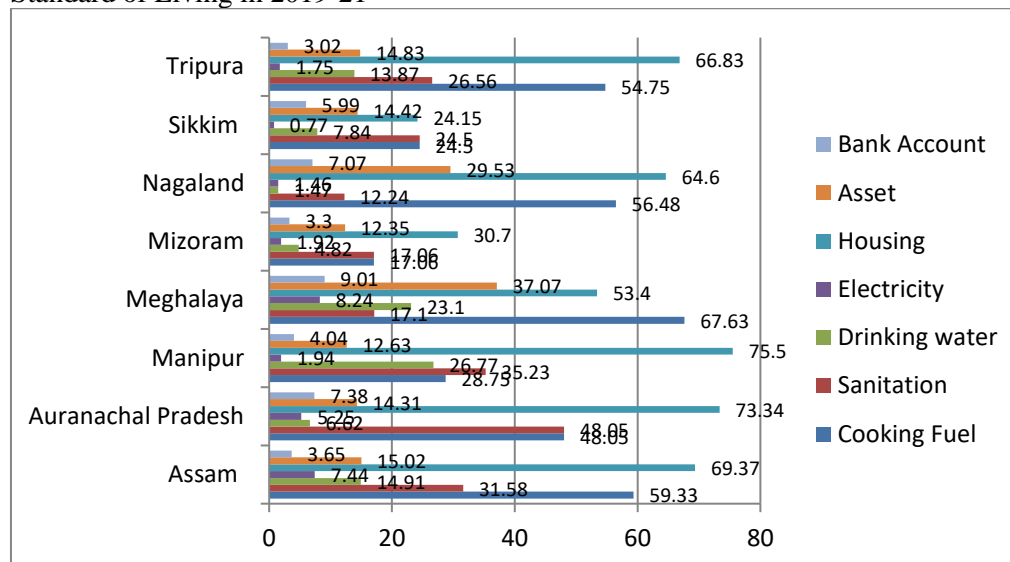
Source: NFHS 5th 2019-21.

Overall, deprivation in housing, cooking fuel and sanitation are a matter of concern as these are the basic necessities for a healthy life and decent standard of living. Such deprivations undoubtly tell the story of persisting magnitude of poverty and hunger. Therefore, alleviation of poverty is handicapped by inadequate access to these determinants of standard of living. Hence, understanding of these parameters of development is needed to guide the redistributive strategies. The persisting chronic poverty and deprivation in this region point up the need for deeper understanding of not simply the number of poor but also the nature and depth of poverty. Therefore, poverty and deprivation is a deep rooted problem in these states.

## IV. Ceteris Paribus Effect of Education on Poverty:

Having examined the problem of poverty in the previous section, now, let us focus on an important aspect i.e. the relationship between poverty and education. It is well established in the literature that education plays a key role in elimination of poverty. Here an effort has been made to show the ceteris paribus effects of education on poverty using data of all India states and union territories.

Education is an essential component of human resource development as it improves the knowledge, capabilities and efficiency among individuals. "Education is an important input as well as an outcome indicator influencing other development indicators like health, nutritional status income and family planning" (Pathak, 2009). "Among different parameters of educational attainment, literacy is the most fundamental as is paves the way for further learning and training" (HDR, 2011). But in our country the spread of education is low as compared to the other developing counties of the world. Everyone knows education as a keyway of gaining higher wages and escaping poverty. Education is essential for addressing problem of poverty, as it provides individuals with the skills and knowledge necessary to improve their lives and those of their families. Education is considered as a keyway of gaining higher wages and escaping poverty. Education enables an individual's

acquire more knowledge, skills, capabilities which helps them to break the cycle of poverty and deprivation. In this section, I will be discussing the effect education has on poverty. To study the effect of education on poverty Citak and Duffy (2020) studied the two-way causality between the household head's education level and poverty in Turkey. The study revealed that the educational reforms increased years of schooling for rural residents by 20 percent for the 1961 reform and 9 percent for the 1997 reform. They concluded that these educational reforms that increased years of schooling, increases household's income. Shimeles and Verdier-Chouchane (2016) studied the role of education in a post-conflict South Sudan in reducing poverty. They were able to conclude that the returns to education are high and increasing with the level of education. Khan, Alvi and Chrishti (2019) investigated the relationship between poverty and education. Through a binary logistic regression test they were able to show that poverty level decreases due to an increase in education level and were able to prove that education level has a significant negative relationship with poverty. This implies that higher level of education is a prime key in eliminating poverty.

In our study an emphasis has been placed on cross-sectional data was gathered to analyze the relationship between education and poverty. The dependent variable used is the poverty rate (Headcount Ratio) in each state and union territories of the India. There are 36 poverty rate observations; one from each state and union territories and the data is sourced from the National Family and Health Survey (NFHS 5th Round, 2019-21). The primary independent variable used is the percentage of people who have obtained 12 or more years of education. The reason why I choose to look at the entire nation and not just a specific region or state is because I wanted to capture the effect education had across the whole country and not just particular region or state. I also choose to represent my education variable as a percentage of people who have obtained a 12 or more years of education because I wanted to look more at how higher education affects the poverty rate. Below there is scatter plot of the dependent variable and primary independent variable, pov(poverty rate) and educ(Education).

Figure-7:   Scatter   plot   of   poverty   vs.   Education
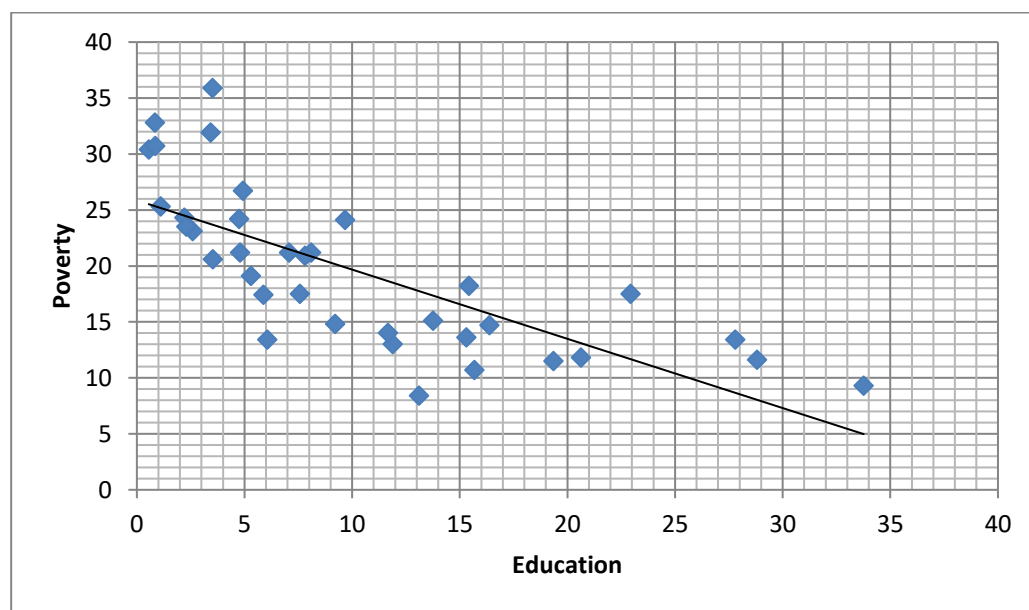
It is evident from the above scatter diagram that there is a negative relationship between the poverty and educational attainment. At low levels of education, the incidence of poverty is significantly high. But with the higher educational attainment, there has been a decline in the poverty levels. Here my hypothesis is that attaining higher education has a negative

effect on the poverty rate, so as more people obtain higher education the lower the poverty rate will be. The economic rationale used to back this hypothesis is having a higher level of education will give us a better chance at acquiring a higher paying job, therefore increasing income and an increased income will help the individuals to be above the poverty line. For this exercise, a simple linear regression model has been used. I have created a simple regression model estimating the ceteris paribus effect education has on poverty. Let us define our regression model as follows:

$$pov = B_0 + B_1 (educ) + u$$

Where,

pov = Percentage of the total population who are multidimensionally poor (or HCR) in each State and Union Territory.

$educ$ = Percentage of population who have completed 12 or more years of schooling.

 The above model has been run by using SPSS. The results of the regression are presented in the following table:

u= Random disturbance term which is assumed to follow all assumptions of classical linear least square.

Table-3: Results of Regression Analysis

Explanatory Variables	Estimated Coefficients	Standard Error	Standardized Coefficients Beta	t-value	P Value
Constant	27.523***	2.865		9.607	.000
Percentage of population who have completed 12 or more years of schooling. **(educ)**	-.885***	.138	-.740	-6.414	.000

Note:*, **, *** indicates significance at 0.10, 0.05 and 0.01 levels respectively.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.740	.548	.534	5.83393

ANOVA

Model	Sum of Squares	df	Mean Square	F (1, 34)	Sig.
Regression	1400.222	1	1400.222	41.141	.000
Residual	1157.182	34	34.035		
Total	2557.404	35			

This model returned a -.885 coefficient for the educ variable. The R-squared value is .548, and what this means is that the percentage of population who have completed 12 or more years of schooling or higher (educ) explains 54.80% of the variability in the poverty rate around its mean. Also, the t value for educ is -6.414 so it is statistically significant at the 1%, level of significance. With a relatively moderate R-squared value and the fact that the educ coefficient is negative, it supports our hypothesis that education and poverty have a negative relationship. As the percentage of population who has completed 12 or more years

of schooling or higher increases by 1%, the poverty decreases by .885 %. This finding lands support to our argument that higher educational attainment leads to the lower level of poverty. Therefore, reforms in educational sectors are to be undertaken to achieve a higher education for building more capabilities, skills to give a boost to economic development and eradication of poverty.

V. Conclusion:

In the present study efforts was made to examine the regional variations of MPI in north eastern states of India. To investigate the level of multidimensional poverty in this region of North-East India, we study the incidence and intensity of multidimensional poverty of the eight states in North- East India and it was found that there are wide variations in the magnitude of poverty among the states. The analysis of dimensions and indicators of the MPI values reveals that there are has been a considerable decline in the incidence of poverty among the states during the period 2015-16 and 2019-21. Component-wise analysis of the MPI enables us to understand the level of deprivations where all the states except Meghalaya are facing much less deprivation in child and adolescent mortality in 2015-16. However, in 2019-21, states are experiencing gradual improvement in each of the health indicators and hence minimizing the poverty problem. Likewise, the percentage of deprived population in different educational indicators such as years of schooling and school attendance reveals that there are variations among the states. The highest percentage of population found deprived in terms of years of schooling is in Meghalaya followed by Auranachal Pradesh and Assam in 2015-16. But, in 2019-21, the level of deprivations has come down to some extent. Another dimension of poverty i.e. deprivation in different indicators of standard of living indicates that , the point is that expect Sikkim and Mizoram, people of all other states in the region have low level of living standard. But, in 2019-21, as presented in figure-6, there has been an improvement in different indicators of standard of living across the states. And finally, we also examine the ceteris paribus effect of education on poverty. This finding lands support to our argument that higher educational attainment leads to the lower level of poverty. Therefore, alleviation of poverty is handicapped by inadequate access to these determinants of standard of living. Hence, understanding of these parameters of development is needed to guide the redistributive strategies. The persisting chronic poverty and deprivation in this region point up the need for deeper understanding of not simply the number of poor but also the nature and depth of poverty.

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