

Multidimensional Poverty Index and Need to Revise the Methodology for Counting Poor

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Abstract

The largest share in Mineral Gross Domestic Product is from Jharkhand; it has 33% of Indian mineral reserve. Still, one out every three people is living below the poverty line; the fact is that 37% state population is below the poverty line. The Jharkhand state problem is its poverty decline rate is slowest; growth depends on industrial performance that too shows volatility. The paper focuses on critical areas of education, health and living standard by applying the Alkire-Foster (A-F) methodology. The paper covers 24 districts of Jharkhand state with inference stress on rural-urban divide and population under five categories of wealth index (poorest, poorer, middle, rich and richest).

Keywords: Poverty, Development, Health, Education, Living Standard

Introduction

The largest share in Mineral Gross Domestic Product is from Jharkhand; it has 33% of Indian mineral reserve. Still, one out every three people is living below the poverty line; the fact is that 37% population is below the poverty line- (Jharkhand Poverty, Growth & Inequality, 2016). The state of Jharkhand was carved out of Bihar state in the year 2000, to benefit the poor population, by providing them with better administration and use of natural resources. Unfortunately, the state is still struggling to balance the resources, as the objective of minerals extraction for revenue generation conflicts with the livelihood of the rural population that depends on the primitive form of agricultural practices with returns not enough to lift them above the poverty level.

The state problem is that it has a huge population of poor, and its poverty decline rate is slowest, growth depends on industrial performance that too shows volatility. The most deprived group is tribal population (28%) as development is improving the lives of other groups, but the tribal population in the remote areas are practically inaccessible, leaving them with highest poverty intensity.

The paper focuses on critical areas of education, health and living standard by applying the Alkire-Foster (A-F) methodology on the data received from DHS-VII India, 2015-16. It forms three equally weighted dimensions of the selected areas and subdivided them into indicators to identify the deprivation and intensity of the deprivation in the surveyed population. The paper covers 22 districts of Jharkhand state with inference stress on rural-urban divide and population under five categories of wealth index (poorest, poorer, middle, rich and richest).

Literature Review

Alkire and Foster (2007, 2011) methodology for direct measurement of poverty applies poverty thresholds within each indicator, and across the indicators afterwards, conditions need to be satisfied before giving the deprivation tag for any observation.

Multidimensional Poverty Index (MPI) is an internationally recognised poverty measure developed by Oxford Poverty and Human Development Initiative (OPHI), the University of Oxford¹, in collaboration with UNDP.

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Multidimensional Poverty Index developed by Alkire and Santos (2011, 2013) centred on AF methodology include Education, Health and Living Standards as the three dimensions of poverty. It uses household surveys to deliver trustworthy information that enriches the quality of traditional poverty tools. The research accepts the classification (WHO/UNICEF, 2006) of improved and unimproved drinking-water and sanitation facilities and apply the same in the analysis.

In the study, Augustin Kwasi (2017), debates the inequality among the population limit the success of growth, and it directly upsets the poverty-reducing efforts. Average annual poverty reduction remains low even though in India, per capita GDP growth rate remains high. He argues that earnings should match the rate of GDP than only it will add to a substantial decrease in poverty. Also, developing countries are required to make more effort to increase earnings and lessen the poverty gap.

(Murgai, 2016) In his research forward the Indian case, and it raises the issue of poverty concentration in low-income states. The study acknowledges the available studies and analyses the question of existing inequality in the population, level of deprivation among households and features of welfare economics with the available data before the conclusion.

Alkire Foster (AF) Methodology

Alkire Foster (AF) methodology address poverty and its multi-dimension nature through timely interventions. The focus is on minimum achievement for each subject (individual, household, etc.). The perimeter is decided below which the observation will be treated as a deprived observation.

(Santos) In his research explain the application of AF methodology and how it is useful in different countries of the world. It focuses on disadvantaged population, over a time frame and targeting them for better utilisation of resources and comparing them to measure the development. His paper provides a detailed explanation of how AF methodology is applied over a sample population and how it can measure the deprivation.

The core of the methodology is a person or a household, and it identifies indicators in which they are deprived

by creating deprivation cutoff limits and by developing a matrix with an individual score in each dimension (Education, health and Living Standard).

The observation will be multidimensional deficient if the cutoff limit is breached. After the identification step, the non-poor observation or observation, which are data deficient, are dropped.

AF methodology aim is to help funding agencies to devise policies that can increase human welfare and keeps the observation above the deprivation cut-off level. Its advantage is in the identification of poor and determining the parameters where observation falls behind and need assistance.

The method is very helpful in establishing indicators to measure the intensity of deprivation in surveyed observations. Its result consists of incidence (H) or headcount ratio, a percentage of the population that is missing under the program objectives, and it also provides intensity (A) as a percentage of weighted deprivation among the surveyed population. The Adjusted Headcount Ratio represents all deprivations in the sampled observation, termed as destitute population, and also known as the product of incidence and intensity.

In our research, three equally weighted dimensions spread over ten indicators forms the base of MPI. The cut-offs for the ten indicators define the prevailing deprivation in the education, availability of drinking water, sanitation, access to health centres, conditions of their house, and basic amenities in the form of assets (13 household assets are identified for analysis) available in a household. The set cut-off criteria to exclude a minimum number of households, as we take a household as deprived if more than five indicators from the ten indicators in three dimensions indicate deprivation.

The AF methodology helps policymaker by providing empirical evidence for schemes like Cash Transfer Programs, Multi-Sector Focussed Programmes, and Control groups performance. It also creates a baseline to compare the future development and the success ratio of any implemented scheme.

The utility of AF methodology is in designing policies and programs to provide maximum gains by keeping the headcount ratio low (number of deprivation) than the

population growth rate. It is only possible by successfully reducing the incidence of poverty or by reducing the intensity of poverty among the poor population, or to reduce them both.

Reducing the deprivation will unquestionably reduce poverty. It can happen either in the form of a decrease in intensity or observation escapes the multidimensional poverty due to change in status from poor to non-poor in the measured indicator and leads to lower headcount. It may be the case of reduction in only censured headcount if the escape from deprivation is limited to some indicators.

The MPI quality to measure subgroups of the population from national to international level and comparability it provides between different groups and in different time frame make it more valuable among the existing methodological preferences.

Demographic and Health Survey VII, India (2015-16)

The most reliable and comparable source of information comes from DHS surveys. DHS provides data in the form of country survey. A large sample of households is covered over a long period (usually five years) to compare the development over the years. Traditional survey tools include four questionnaire models –Household questionnaire, a Woman's Questionnaire, A Man's Questionnaire, and Biomarker-questionnaire.

Complete household questionnaire data consist of 2,869,043 observation in 6,01,509 households from 36 Indian states, and union territories comprise of 640 districts. The master data provide information on 430 different variables and then divided it between choosing the Jharkhand state. The two categories poorer and the poorest from the five categories of the wealth index are compared with the other three. Sixty-seven primary variables are chosen from the available 430 variables. Data is then classified into meta-data, education, health, and living standard and other categories data were dropped. The dropped categories comprise of details on meta-data, domestic violence module, bio matric questions and malaria prevention.

Sample Design

The purpose of sample design is to define population subgroups in a meaningful way that helps the survey team in the collection of data that is representative of all groups and cover the entire population through proper sampling. The main focus of the survey is the measurement of poverty in all subgroups starting from rural-urban and different religions are studied and tabulated under a single state.

The research study utilises the data from the DHS VII-India, 2015-16 by International Institute for Population Studies (IIPS) Mumbai, India and permission to use it for research are taken from DHS program funded by USAID.

The design is representative at the national, state and district level. It is easily divisible into rural and urban areas, and promptly provide information under various sub-divisions. Two-stage cluster survey design is applied. The enumeration data is taken from the national census in stage one, then selected enumeration areas households sample is taken in stage two.

The research study represents the 24 districts of the state of Jharkhand. From the five categories of wealth index, it compares poorest and poorer types of households with the middle, a rich and richest class for analysis. It gathers information from 18141 households under 67 variables under three heads- education, health and living standard. To conclude, it applies the Alkire-Foster methodology to calculate the Multidimensional Poverty Index (MPI) and explain the deprivation that exists in the different categories of wealth index.

Education

The education deprivation index is formed from the DHS survey household data. The data represent how many families are deprived of their educational right. The household is deprived in education if any of the adults of the household members fails to obtain any formal education or they stop educating themselves after having primary school education. The research agrees that an educated family promotes its wards in education, but

adult members must get education above primary level to substantiate this thought.

It is a surprise that 23.54% of the respondents are not interested in studies; The answers from the respondents are divided into two categories. Category one combines reasons provided by the respondents for their lack of efforts in getting an education the reasons like not interested in studies (23.54%), repeated failures (2%), further education not considered necessary (4.61%), got married (10.33%) and others (3.35%) are taken.

The second category which shows government inability comprises of reasons like costs too much (17.82%), required to do household work (14.85%), required to work for money (4.46%), work in family business or farm (2.95%), did not get admission (6%), school too far

(5.31%), transport not available (1.69%) and not safe for girls (0.76%), no female teacher (0.67%) and no proper facility for girls (0.70%) are included.

From Table 1, 48% of the respondents are blaming themselves and their conditions for not getting an education while 52% blames the government for not doing enough in terms of facilities and income support to avail their fundamental right. From the Table (1), 56% of the poorest and poorer families and 51% of middle, rich and richer class blame government for not providing them with the opportunity to educate themselves. While poorest, poorer and middle-class households are complaining more about the cost of education and their numbers are more in comparison to wealthy class in the category who choose not interested in education as an option.

Table 1: Main Reason for Not Attending School

	<i>Poorest</i>	<i>Poorer</i>	<i>Middle</i>	<i>Rich</i>	<i>Richest</i>	<i>Total</i>
School too far away	146	22	9	5	0	182
Transport not available	36	12	6	3	1	58
Further education not considered necessary	99	40	13	5	1	158
Required for household work	345	88	60	13	3	509
Required for work on farm/family business	61	23	10	3	4	101
Required for outside work for payment	105	19	23	6	0	153
Cost too much	377	143	66	20	5	611
No proper facilities for girls	13	6	3	1	1	24
Not safe to send girls	15	7	2	2	0	26
No female teacher	13	3	4	2	1	23
Required for the care of siblings	9	1	2	0	0	12
Not interested in studies	471	177	124	29	6	807
Repeated failures	44	16	8	5	0	73
Got married	173	117	52	10	2	354
Did not get admission	99	49	34	18	7	207
Other	62	22	14	10	7	115
Don't know	9	4	0	1	1	15
	2077	749	430	133	39	3428

The poorer and poorest category respondent has shown apathy towards education is due to their daily struggle for a living, and their primary aim is to provide surviving meals to their family, educational expenditure is never a priority under such circumstances.

There are 15205 educationally deprived female observations in the rural-urban category spread over 28 districts (Table 2); highest in Dhanbad (1006, 6.61%) followed by Bokaro (962, 6.32%), Ramgarh (864, 5.68%), Pakur (761, 5%), Purbi Singhbhum (728, 4.79%), and Giridih (693, 4.55%) and Dumka (603, 4.55%).

Table 2: Deprived in Education (Female District-Wise)

district	woman's highest educational level					Total
	no educat	primary	secondary	higher	don't kno	
garhwa	492	66	486	44	1	1,089
chatra	509	144	500	67	1	1,221
kodarma	427	138	514	81	0	1,160
giridih	536	157	470	42	1	1,206
deoghar	458	153	469	74	3	1,157
godda	481	110	314	38	1	944
sahibganj	544	113	332	41	0	1,030
pakur	621	140	343	13	0	1,117
dhanbad	729	277	1,126	203	0	2,335
bokaro	754	208	1,048	236	2	2,248
lohardaga	397	66	515	90	0	1,068
purbi singhbhum	566	162	1,070	301	0	2,099
palamu	414	120	452	76	0	1,062
latehar	454	145	399	47	2	1,047
hazaribagh	425	139	561	112	1	1,238
ramgarh	644	220	1,168	287	2	2,321
dumka	433	170	361	38	0	1,002
jamtara	501	192	450	33	1	1,177
ranchi	445	183	1,121	370	5	2,124
khunti	401	91	499	66	0	1,057
gumla	398	101	552	65	0	1,116
simdega	365	87	457	49	1	959
pashchimi singhbhum	474	79	411	56	0	1,020
saraikela kharsawan	343	133	459	62	0	997
Total	11,811	3,394	14,077	2,491	21	31,794

The least deprived districts are Simdiga (2.97%) followed by Lohardaga (3%) and Khunti (3.23%) overall, 48% females; observations are in the deprived condition in education.

In the male category Table (3), Pakur district has the highest 7% of male observations in deprivation state,

followed by Ramgarh (5.76%), Sahibganj (5.35%) and Purbi Singhbhum (5.28%). Kodarma district is the one where the male population is least deprived in education (2.16%) followed by Garhwa (2.64%), and Lohardaga (2.64%). Overall, 31% of male observations are in educationally deprived conditions.

Table 3: Deprived in Education (Male District-Wise)

district	man's highest educational level					Total
	no educat	primary	secondary	higher	don't kno	
garhwa	25	14	98	14	0	151
chatra	44	21	60	19	0	144
kodarma	17	15	97	30	0	159
giridih	36	20	75	25	0	156
deoghar	35	29	111	26	0	201
godda	31	21	68	6	0	126
sahibganj	53	26	61	6	0	146
pakur	71	33	68	12	1	185
dhanbad	30	38	218	64	0	350
bokaro	47	24	206	63	0	340
lohardaga	28	11	88	7	0	134
purbi singhbhum	53	25	169	72	2	321
palamu	34	22	99	22	0	177
latehar	39	25	83	9	0	156
hazaribagh	29	21	113	33	0	196
ramgarh	42	43	222	41	0	348
dumka	40	26	82	7	0	155
jamtara	41	32	97	16	0	186
ranchi	33	28	186	62	0	309
khunti	41	23	98	11	0	173
gumla	29	19	85	23	0	156
simdega	40	20	86	10	0	156
pashchimi singhbhum	39	17	78	14	0	148
saraikela kharsawan	23	23	102	19	0	167
Total	900	576	2,650	611	3	4,740

Health

Eighty per cent of the infection in India is due to the poor quality of drinking water and, pitiful sanitation and hygienic conditions in the household facing poverty (Hazarika, Manisha, 2015). Slum areas are suffering the most as (Sau, 2017) in her research state poor water management and common toilets in the tightly constructed poor quality of shanties are main sources of infectious diseases and a common reason for diarrhoea.

Research by (Nandita Saikia, 2013) investigates the subject why the infant mortality rate is higher in the rural sector, and in her findings, she concludes that inequality in household wealth and lower maternal education are the reasons. Similarly, (Choudhury, 2015) findings also state that parental education helps in decreasing the

infant mortality rate, and education should be promoted in underdeveloped socio-economic regions. His argument using NFHS (2005-06) survey is important as it emphasis on mother's education and mass media campaign.

The argument gets support from (Prashant Kumar Singh, 2012) he also concludes that education plays a significant role in maternal health care, and there is a need to promote higher education in girls (S K Singh, 2018).

Multiple factors are having a strong association with the diseases some of them are smoking in the house, type of cooking fuel, non-availability of a separate kitchen, poor house condition (wall, floor, and roof), and shared toilets along with the poor quality of drinkable water. In her study (Sabrina Naz, 2016) describe the leading cause of respiratory diseases are the poor quality of cooking fuel along with improper ventilation in the house.

To avoid spreadable diseases, safe drinking water and proper sanitation is a must, every person has the right to safe drinking water. Unfortunately, the reality is the opposite of it, the research analyses the data regarding how many households are having access to safe drinking water (piped into dwelling, public tap, standpipe, piped to the yard, tube well protected well, protected spring, bottled and community ro plant). Data states majority of the households are having access to drinking water, but the quality of water is questionable, 56% of households are using bore well water (58% rural, 40% Urban) whereas 12% depends on government supplies and 24% of them uses water from the unprotected wells. Only 2.5% of the population under the studied category is fortunate enough to have access to drinking water in their dwelling. 12% need 15 minutes, 37% need 10 minutes, while 50% of the surveyed population need 15 minutes or more to reach the water source.

It is decisive to note unreliable sources that we consider unsafe are not considered in the same way by the households using it. The quality of the water supplied is questionable, and it includes a supply of water from the government sources. The reason may be at different places; there is a change in the quality of water due to available natural resources or industrial pollution. It is necessary to treat the water, but many households do not believe in it. It is either because of their ignorance or is too poor to consider it as essential. Unfortunately, 74% of the household do nothing to make it safe. Survey data shows that 13,539 households do not treat water to make it safe.

95% of the households do not have the toilet facilities (17,163), and 8447 of them hold BPL card. 95% of households in the rural and 87% in an urban category is facing the dilemma when the focus of the survey is more on the lower-income group.

The most common type of toilet facility prevailing both in rural and urban areas is flush to the septic tank (49.89%) in comparison to other techniques available in the market. Also, a considerable number of individuals sharing toilets is a cause of concern as 350 households are forced to share with others.

The interviewer observed that the majority of households (16776) have a place where family members wash their hands, and it is a positive development, but in 8587 households they are not able to see the presence of water, and 8019 households are from rural areas, and in it, 4568 households are from BPL category.

The health schemes cover the 13% of households, among them, 1701 belong to BPL category, and more importantly, 7348 households who belong to BPL category not covered by any health scheme. In a rural area, 2207 households and urban 176 are given the protection.

Majority of the population 30% depends on a public sector (Table 4) that includes government hospitals, dispensary, or Public health centers-PHC (1697), Rural hospitals/ Blocks PHC (2703), followed by Private Clinics (7810), Additional PHC (737) and sub-centres (228). More than 50% of the households depend on private hospitals and clinics for their treatment, but less than one per cent population still visit traditional healers, and many a time takes self-medication without any consultation to any doctor.

Rural households are dependent on PHC and other means (28%) in comparison to urban households, who prefer private clinics (47%) and private hospitals (1%). 49.5% of rural households also prefer private clinics (42.5%) and private hospitals (7%), the main reason may be private clinics and hospitals are not getting enough business and are not motivated to open their business in rural areas, and rural population has to depend on the public sector for the health services.

Table 4: Place of Treatment-Rural/Urban

Where household members generally go for treatment	Type of place of residence		Total
	urban	rural	
public: government/mu	286	1,228	1,514
public: government di	18	44	62
public: uhc/uhp/ufwc	14	107	121
public: chc/rural hos	203	2,500	2,703
public: phc/additiona	49	688	737
public: sub-centre	5	223	228
public: vaidya/hakim/	0	8	8
public: anganwadi/icd	0	7	7
public: asha	0	1	1
public: government mo	1	8	9
other public sector	7	8	15
ngo or trust hospital	11	52	63
private hospital	149	1,207	1,356
private doctor/clinic	873	6,937	7,810
private paramedic	18	247	265
private: vaidya/hakim	2	29	31
private: traditional	71	739	810
private: pharmacy/dru	35	180	215
private: dai (tba)	0	2	2
other private sector	10	113	123
shop	3	44	47
home treatment	0	57	57
other	74	1,883	1,957
Total	1,829	16,312	18,141

Availability of nearby private clinics does affect the decision whether to visit or not as 24% of BPL category rural households in comparison to urban 19% visit them in sickness. In the surveyed population, only 405 observation was suffering from tuberculosis, and most of them belong to rural areas and are from the BPL category. Most of the suffering population prefer government hospitals (49%) while 34% visit the private sector, while 37% has taken consultation from both sectors. In women 1926 cases of moderate level and 106 cases of severe anaemia was noted, the majority of them belong to the rural region, another observation that 34% of BPL category mothers suffer from anaemia is a cause of concern.

Government initiative was studied (Anurag Banerjee, 2016) to reduce open defecation by constructing 8 million toilets in 2014-15, he concluded that merely providing facility is not enough, it also requires social marketing,

increases in adult education, improvement in the financial capability of rural and poor households and changes in religious-based and caste-based beliefs.

Research by (Madhusudan N. Pandya, 2018) describes prevailing gender-based sanitation insecurity and women face a threat when they go in open fields for defecation. He is of view that there is an immediate need to improve the economic, social and political position of women through proper government initiative. (Isabel Gunther, 2010) does extensive study from 172 DHS survey from 70 countries and establish that a significant improvement in health is possible by using improved sanitation and water amenities.

Findings of the survey analysis highlight the need for proper sanitation, safe drinking water for the deprived population and need to lessen the dependence on the

public sector for their treatment. Long term planning is required to improve low income and education conditions that hinder the ability to consult private health clinics and implement safe practices inside their vicinity and in their houses.

Living Standard

The Indian Socio-Economic Caste Census methodology examined and compared by (Seth, 2013) in her article with the different alternatives available to identify the Below Poverty Line (BPL) household. The prime objective is to help the government to design the schemes and provide benefits that BPL category population is entitled. The 2011 census survey rectify the problems of the 2002 survey like the poor quality of data, limited coverage, and poor survey design. For the purpose, the N C Saxena committee was appointed by the Indian government to develop a new methodology to identify the BPL population. The paper with the Saxena committee criteria of inclusion, exclusion, and scoring method and includes in its methodology.

The asset index is developed from the selected thirteen items if it has a score of less than or equal to five; it is a deprived household under the asset category. For a household, the minimum requirement of assets, categorised under the need for physical rest and comfort (cot, mattress, electric fan, refrigerator, table & chair), entertainment and communication (radio, TV & mobile), cooking (pressure cooker) and transport (bicycle, car or truck).

The sole objective of a selection of assets is to characterized the surveyed population with a permanent address under different categories and with the people having no permanent address, migrating nature, and are in acute poverty. Still, the survey (Table 5) found that 67 households do not have any of the necessary assets, 333 households have a single asset, 680 households having two, 1296 households three and 1943 household having four, only 17 households have all thirteen items in their house. The most available asset was bed or cot, followed by bicycle in the studied category.

Table 5: Household Assets (Item-Wise Distribution)

Wealth index	Asset Index								Total
	No Item i	1 Item in	2 Items i	3 Items i	4 Items i	5 items i	6 items i	7 items i	
poorest	67	332	670	1,237	1,789	2,342	2,278	1,838	11,771
poorer	0	1	10	59	149	309	501	768	4,312
middle	0	0	0	0	5	17	39	120	1,794
richer	0	0	0	0	0	0	0	1	256
richest	0	0	0	0	0	0	0	0	8
Total	67	333	680	1,296	1,943	2,668	2,818	2,727	18,141

Wealth index	Asset Index						Total
	8	9	10	11	12	13	
poorest	932	260	26	0	0	0	11,771
poorer	883	867	532	187	44	2	4,312
middle	282	410	427	327	158	9	1,794
richer	11	35	64	79	60	6	256
richest	0	0	3	3	2	0	8
Total	2,108	1,572	1,052	596	264	17	18,141

The analysis of data under the living standard for the categories is based on the Saxena Committee 2009 and Social-Economic and Caste Census 2011 and it is used to set criteria for the exclusion from the deprived class

like having a car or truck or motorcycle or refrigerator without having BPL card. In the exclusion criteria, two types of error are possible, type-1 include the household that should not be in BPL category but still holds BPL

card or type-2 household should be in BPL category but do not have the card as evidence.

There are 13326 households having electricity and 7407 households among them holds BPL card, while 2636 BPL cardholders household does not have electricity, but 2173 households are more unfortunate as they neither have electricity nor BPL card.

There are 9225 BPL households with a cot, but only 1750 have a mattress with it, and 6646 households have a chair, but only 2006 have a table with it. An electric fan is available in 3975 BPL households.

There are 10043 households with BPL card, and 7271 BPL households have a bicycle, and 1486 have motorcycle/scooter for transport purpose, and even 21 BPL cardholder have car or truck in their possession.

The mobile phone is used not only for communication but for entertainment purpose also, and it replaces radio and television in a major way, as 7874 BPL households have a mobile phone while 2093 has television and 161 has a radio. The pressure cooker is available in 1276 households while only 94 BPL cardholder has a refrigerator.

Table 6: BPL Card and Main Household Assets

	<i>The Household has BPL Card</i>	
	<i>No</i>	<i>Yes</i>
Do not have electricity	2173	2636
Has motorcycle/scooter	1501	1486
Has refrigerator	202	94
Has an electric fan	3699	3975
Has cot or bed	7251	9225
Chair	5243	6446
Table	1964	2006
Mattress	1686	1750
Pressure cooker	1303	1276
Has radio	120	161
Has television	2089	2093
Has a bicycle	5463	7271
Has mobile phone	6449	7874
Has Car/truck	30	21
Has bank account	6850	8954

Analysis of asset index state in the poorest category number of items increases up to level 5 then it starts

dipping and drastically goes down from when the number of items increases from 8 to 9. For poorer category increase is up to 8 items, and dip is observed when items change from 10 to 11 items. For middle-class increase is up to item 9 and decreases from item 11 to 12 while rich and richest class reach up to 13 items. The data shows the general rule of acceptance that the number of items increases with an increase in household income.

There are only 533 households with means like LPG or Biogas while in 13510 households use woods, and 12733 belongs to a poorest and poorer category, 897 animal dung and 2442 uses coal as the prime source of cooking fuel. Although 15900 households cooked food inside their house, still 17383 households cooked food on an open fire and 15234 households cooked food inside their home on an open fire, and 8557 of them hold BPL card. Even 4667 households have a separate room like the kitchen, and in them, 2758 holds BPL card.

In the surveyed population, 15832 households have bank accounts, and 8954 households belong to BPL category, from them 8248 belongs to the rural sector and 706 houses in the urban sector.

Identification procedure of BPL population is full of ambiguities, and it is the primary reason for such a high figure of poverty in India. It requires investigation, how a BPL cardholder can hold luxurious items. A refrigerator comes under a luxury asset as it needs affordability of electricity and food security. Similarly, a household who have enough money for petrol should not be under the BPL category, and it applies to seventeen households who own four-wheelers.

The condition of houses (Table 7) where the different categories of the population lives are analysed as the majority of them uses mud for construction of walls (11822) and floor (12253) majority are from poorest and poorer category. The poorest and poorer class uses the temporary and low-cost roof options like roofing shingles (4962) while RCC and asbestos is the choice for rich and richest class. The houses are not suitable for harsh Jharkhand state weather conditions where severe rain, cold and hot weather test survival stamina of the suffering population.

Table 7: Main Roof, Wall and Floor Material

Main Roof material								
Wealth Index	Thatch/Palm leaf	Mud/grass mixture	Asbestos	RCC	Roofing	burnt bricks	tiles/slate	others (palm/bamboo/metal/wood/)
Poorest	514	229	848	406	4107	4381	987	299
Poorer	28	17	718	1381	759	949	297	163
Middle	2	2	299	1161	89	155	45	41
Rich	0	0	27	205	7	11	3	3
Richest	0	0	1	6	0	1	0	0
Total	544	248	1893	3159	4962	5497	1332	506
Main Wall Material								
	No wall	cane/plam/bamboo/wood	Mud	Cement	burnt brick	cement block	unburnt brick/stone	Others (wood/metal/grass)
Poorest	60	108	10055	235	899	191	113	110
Poorer	27	10	1612	1128	844	529	121	41
Middle	0	1	146	1005	191	353	91	7
Rich	0	0	7	168	16	57	8	0
Richest	0	0	2	3	0	3	0	0
Total	87	119	11822	2539	1950	1133	333	158
Main Floor Material								
	Mud Clay	Sand	Dung	Brick	Cement	Others		
Poorest	9946	53	1511	11	244	6		
Poorer	2111	16	367	31	1742	45		
Middle	190	1	42	12	1514	35		
Rich	4	0	2	1	238	11		
Richest	2	0	0	0	6	0		
Total	12253	70	1922	55	3744	97		

Conclusion

Available evidence indicates that the fundamental right to access safe drinking water, sanitation facility and health facilities in the lowest two categories of wealth index is severely breached. In the presence of socio-economic inequalities, it is difficult to provide equal facilities, another issue of regional disparities within the state, especially in the remote hilly and tribal areas left out from the mainstream development agenda.

The education status is very low in the concern categories

along with the low standard of living, and most of the targeted population come under the BPL category. Sixty per cent of the household (10877), do not have any member under the education category, in 1083 household fifty per cent, in 1124 one-third members and in 1106 households one-fourth members are educated.

From the 18141 households surveyed sixty per cent of households are facing deprivation in one or more than one dimension, as suggested by MPI (0.60). The survey keeps the cut-off low and focuses only on the poorer and poorest category as 89% of the household belongs to

the two categories and is the main reasons for a higher percentage of deprivation. Secondly, the headcount ratio (.745) suggests that the majority of the population is living below the poverty line. Intensity value (.805) suggest that deprivation runs deep.

The problem is severe as in many cases, a household despite having all characteristics of poor not been counted because of lack of documentary proof. From the total households (16083) who belongs to the poorest and poorer category, 6947 households do not have the BPL card. The research suggests an urgent need to analyse the methodology for counting poor and awarding BPL card as a sufficient number of the eligible households are deprived of their rights for government subsidies and directly responsible for poverty decline rate that is insufficient to address the severity that persists in the state population.

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