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Multidimensional Approach on Human Deprivation: Evidence from Rural households in Kerala

[1]Dr. Vipin Chandran K P and [2]Syam Santhosh

[1]Assistant Professor of Economics, Krishna Menon Memorial Government Women's College, Kannur, Pallikunnu (P.O), 670004 (Pin), Kannur District, Kerala, India.
E- mail: *kpvipinchandran@gmail.com*

[2]Former M.A Applied Economics Student, E K Nayanar Memorial Government College Elerithattu (P.O), 671314 (Pin), Kasaragod District, Kerala, India.
E- mail: *syamsanthosh111@gmail.com*

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Abstract

The problem of poverty or human deprivation is found to be widespread in all the countries even though these are different levels of socio-economic development. Deprivation refers to a situation where an individual is denied of the basic necessities of life. In social terms, it is one of the consequences of the disparity in the socio-economic norms prevalent in the environment. Human deprivation is defined by one-dimensional measures, such as income. But no one indicator alone can capture the multiple aspects that constitute human deprivation. Multidimensional poverty or deprivation is made up of several factors that constitute poor people's experience of deprivation – such as poor health, lack of education, inadequate living standard. A multidimensional measure can incorporate a range of indicators to capture the complexity of human deprivation and better inform policies to relieve it. Different indicators can be chosen appropriate to the society and situation. The present study is an attempt to analyze the vital aspects of human deprivation of rural peoples based on multidimensional approach.

1. Introduction

Economic growth and development is a multidimensional process involving the reorganization and reorientation of the entire economic and social system. Eradication of poverty is a first step of economic planning in order to achieve economic growth with high human development. In the past, development was measured in terms of country's economic growth or increase in per capita income or national income over a period of time. The Multidimensional Poverty Index is an index of measuring multidimensional deprivation of peoples. It shows that the number of people who are multidimensional poor. Multidimensional approach of deprivation try to measure the non-income based dimensions of deprivation such as education, health and standard of living. The MPI measure the deprivation at the individual level and household level. If someone is deprived in a third or more of ten (weighted 1/3) indicators, the global multidimensional poverty index identifies them as 'MPI poor', and the magnitude or intensity of their deprivations measured by the number of the deprivations they are experiencing. MPI creates a clear idea about the deprivation status of the people.

The present study is an attempt to analyze the vital aspects of human deprivation of rural peoples in the form of multidimensional approach. The human development studies have opened new perspectives on measuring and analyzing poverty and development with the help of multidimensional concept. The present study in this context will serve to enrich useful knowledge about human deprivation which analyses the poverty in multi-dimensionally. The study covered the multidimensional deprivation status among rural households in the Kasaragod district.

2. Methodology

The multidimensional poverty index (MPI) identifies overlapping deprivations at the household level across the same three dimensions as the Human Development Index in terms of living standards, health, and education. Each person in a given household is classified as poor or non-poor depending on the number of deprivations his or her household experiences. Multidimensional measure can incorporate a range of indicators to capture the complexity of poverty and better inform policies to relieve it is appropriate to the society and the situation.

Table 1: Components of Multi-Dimensional Poverty Index (MPI)

Dimensions	Indicators of MPI
Health	**Nutrition:** Having at least one household member malnourished.
	Child mortality: Having had one or more children die (Last 5 years prior to the survey)
Education	**Years of schooling**: No household member has completed five years of schooling.
	School attendance: At least one school age child who is not attending school
Living standard	**Electricity**: No having electricity
	Drinking water: Not having access to clean and safe drinking water near to the premises.
	Sanitation: No having access to adequate sanitation
	The Floor: Having a home with dirty floor
	Cooking fuel: Using dirty cooking fuel
	Assets: Not own more than one of T V, Telephone, Mobile phone, Motor bike, Agriculture land, Refrigerator, and does not own a car or tractor.

Source: Oxford Poverty and Human Development Initiative, Brief Methodological note 2015.

2.1 Calculation of MPI

Step I: Choosing the dimensions and indicators

The MPI uses ten indicators belonging to three dimensions such as education, health and standard of living.

Step II: Choosing the indicators' deprivation cut-offs

The MPI and any multidimensional poverty measure of its type require a deprivation cut-off for each indicator. Usually, the indicators' deprivation cut-offs are noted as Z_i , so that person **i** is considered deprived if her achievement in that indicator X_i is below the cut-off, that is, if $X_i<Z_i$.

Step III: Choosing the indicators' weights

After the selection of indicators and their corresponding cut-offs, the next step is to define the weights each indicator will have in the measure. In the MPI the three dimensions such as education, health and standard of living, are equally weighted, so that each of them receives a 1/3 weight. The indicators within each dimension are also equally weighted. Thus, each indicator within the health and education dimension receives a 1/6 weight and each indicator within the living standards dimension receives a 1/18 weight (1/3 ÷ 6).

Step IV: To identify the poor

Next, each person is assigned a deprivation score according to his or her deprivations in the component indicators. The deprivation score of each person is calculated by taking a weighted sum of the number of deprivations, so that the deprivation score for each person lies between 0 and 1. The score increases as the number of deprivations of the person increases and reaches its maximum of 1 when the person is deprived in all component indicators. A person, who is not deprived in any indicator, receives a score equal to 0. Formally:

$$C_i = w_1 I_1 + w_2 I_2 + \ldots w_n I_n$$

$I_i = 1$ if the person is deprived in indicator $_i$
$I_i = 0$ the person is not deprived in indicator $_i$

In the MPI, a person is identified as poor if he or she has a deprivation score higher than or equal to 1/3. Otherwise he or she is not poor.

Step VI: Calculating MPI

MPI is calculated by using Head Count Ratio and Intensity of poverty.

The MPI is the product of both: **MPI = H × A**.

Where

H = Head Count Ratio
A = Intensity of poverty

The MPI explicitly weights each dimension equally and each indicator within the dimension equally. In the following manner.

Table 2: Relative Weights to Indicator and Dimensions

Dimensions	Indicator	Weights
Education	Years of schooling	1.67
	School enrollment	1.67
Health	Nutrition	1.67
	Mortality	1.67
Standard of Living	Electricity	0.56
	Sanitation	0.56
	Drinking water	0.56
	Type of floor	0.56
	Cooking fuel	0.56
	Assets	0.56

Source: OPHI Working Paper No. 38, 2010.

The maximum score is 10, with each dimension equally weighted such as education (1/3), health (1/3) and standard of living (1/3) (the maximum score of each dimension is 1/3). The health and education dimensions have two indicators each, so each component is worth 1.67. The standard of living dimension has six indicators, so each component is worth 0.56. In the case of multidimensional poverty index, equal weighting between the dimensions. A person is multidimensional poor if the weighted indicators in which he or she is deprived sum up to 33.33 percent or 0.33 weights out of 1.

2.2 Education Dimension

In the case of the educational dimension, the MPI uses two indicators that are compliments to each other such as years of schooling and school enrollment. Years of schooling measure the level of knowledge and understanding of household members. At the same time, if any of their school age children are not attending 1 to 8 grades of school it is consider that all the household members are deprived on the basis of education deprivation. It is the best and suitable indicator, to indicate whether or not school aged children is being exposed to a learning environment.

2.3 Health Dimension

The health indicator for all household members is generally missing from household surveys; the health dimension is one of the most important indicators of human multidimensional poverty index. Measuring this dimension is the most difficult task. Yet the capability to live a long and healthy life is a basic capability and is also the inevitable tool for measuring human development. The MPI uses two health indicators, such as nutrition and mortality. In the MPI measure if at least one undernourished person in observed in the household, all household members of this households are considered to be deprived in the nutrition (here BMI is used to measure the nutrition status). Child mortality is the second indicator in health dimension. In the case of child mortality, if at least one child death is happened in any household, that household is considered deprived.

2.4 Living Standards

The third dimension in the multidimensional deprivation considers as weight standard of living indicators. This dimension uses six indicators, clean and safe drinking water, availability of good quality water, cooking fuel, electricity and flooring material are the five important indicators of standard of living. The final indicator covers the ownership of some consumer goods each of which has alternative surrounding them, such as refrigerator, radio, television, mobile phone, telephone, bicycle etc.

3. Results and Discussion

3.1 Measuring Deprivation through MPI: Evidence from Sample Survey

The study was conducted in Kasaragod district, here are 60 sample households was used for this study. Out of these 60 households 20 households are belonging to Scheduled Tribes (ST), 12 Households are Scheduled Castes (SC), 16 households are Other Backward Caste (OBC) and remaining 12 households are belonging to General Category.

3.2 Deprivation on the basis of Health Indicators

The Table 3 reveals the deprivation is high in the case of Scheduled Tribe (ST) population. Out of the ST respondents, 55 percent households are facing malnutrition problems. Another indicator in the health dimension is child mortality. All household members are deprived if one of the child in that household dying before reaching 5 year. In this study reveals that out of the 60 households, 3.33 percent of rural households are deprived on the basis of child mortality.

Table 3: Deprivation on the basis of Health Indicators

Social Group	Total Number of Households	Nutrition[1]	Child Mortality[2]
		Percent (%)	Percent (%)
Scheduled Tribes (ST)	20	55	5
Scheduled Caste (SC)	12	50	0
Other Backward Caste (OBC)	16	43.8	0
General Category	12	58.3	8.3
Total	60	51.7	3.33

[1]Any household member in the household is malnourished
[2] Any child in the family has died in the last 10 year.

Source: Sample Survey.

3.3 Deprivation on the basis of Education Indicators

Literacy and education are the two most important indicators in the Kerala Model of Development. There is a visible inequality is existed at the level of education and also the same time quality of education as well (Vineesh Kumar, 2016). Some rural peoples in Kasaragod district are deprived on the basis of education indicators. Education is one of the most important dimensions in the case of Multidimensional Poverty Index.

Table 4: Deprivation on the basis of Education Indicators			
Social Group	Total Number of Households	Years of Schooling[1]	School Enrollment[2]
		Percent (%)	Percent (%)
Scheduled Tribes (ST)	20	30	0
Scheduled Caste (SC)	12	25	0
Other Backward Caste (OBC)	16	18.8	0
General Category	12	16.7	0
Total	60	23.3	0

[1] In no household member in a household has completed five years of schooling
[2] Any school-aged child in a household is not attending school in years 1 to 8

Source: Sample Survey.

The table 4 reveals that the educational deprivation of different rural households. The years of schooling is the major indicator that shows, if a household is deprived in which no one in the house completed five years schooling. The deprivation score in this study shows that 23.3 percent of rural households are deprived in the year of schooling indicator. The highest deprivation has been reported for the 35 percent of ST community, 25 percent of SC, 18.8 percent of OBC and 16.7 percent of General category are deprived on the basis of years of schooling indicator. All household members are considered deprived if any of their school age children not attending the 1 to 8 grades of school. The present study shows that 100 percent of school enrollment is reported in the study area. That means there is no household member in the study area are deprived on the basis of years of schooling deprivation.

3.4 Standard of Living Indicator

There are six indicators in the dimension of standard of living such as electricity, fuel, floor, sanitation, clean and safe drinking water and household assets.

Table 5:Deprivation on the basis of Standard of Living Indicators							
Social group	Total	Electricity[1]	Fuel[2]	Sanitation[3]	Floor[4]	Drinking water[5]	Assets[6]
		Percent (%)	Percent (%)	Percent (%)	Percent (%)	Percent (%)	Percent (%)
Scheduled Tribes (ST)	20	10	40	0	40	75	0
Scheduled Caste (SC)	12	0	33.3	0	25	6.7	0
Other Backward Caste (OBC)	16	0	12.5	0	18.6	12.5	0
General Category	12	0	8.3	0	25	8.3	0
Total	60	3.3	25	0	28.3	33.3	0

Note:
1.The household has no electricity connection
2. The household cooks with dirty fuel
3. The household does not have adequate sanitation or toilet facility
4. The household has sand, dung or dirty floor
5. The household lacks access to clean and safe drinking water
6. The household does not own more than one of assets mobile phone, TV, bike, motorbike, land, refrigerator, washing machine etc

Source: Sample Survey.

If a household has no electricity that household is considered as deprived. Electricity is the fundamental source of energy for all types of activities. The table 5 shows that only 10 percent of households in ST population are deprived on the basis of electricity deprivation. All other households in the study area have electricity connection. The source of cooking fuel also reveals the quality of life of the households. This study reveals that 25 percent of households deprived are using dirty cooking fuel. The major chunk of these tribal households depends on dirty fuel for their cooking purpose. The quality of life of the household and sanitation is closely related. Most of the rural households in this area used closed toilet for sanitation purposes. All rural households in the study area have the availability of toilet.

The deprivation on the basis of the floor indicator reveals that 28.3 percent of rural households are deprived. Out of them 8 households are ST, 3 are SC, 3 are OBC and 3 are belonging to General category. The type of floor of these households has sand cow, dung or dirty floors. The study shows that 33.3 percent of households have deprived on the basis of unavailability of clean and safe drinking water. The deprivation on the basis of good quality of water is high in the ST population. The study also reveals that there is no household are deprived on the basis of asset holding. That means every household owned some kind of assets.

3.5 Number of Deprived persons in Communities

Table 6: Number of Deprived Persons in Different Communities

Social caste	Total number of peoples	Total number of deprived persons	Percentage of deprivation
Scheduled Tribes (ST)	92	31	50.82
Scheduled Caste (SC)	51	8	13.12
Other Backward Caste (OBC)	57	12	19.67
General Category	54	10	16.39
Total	254	61	100

Source: Sample Survey.

The table 6 reveals that the number of deprived persons in the deprived household of different social groups in Kasaragod district. There are 254 members are included in the 60 households in the study area. Out of these total 254 peoples, 61 individuals are deprived in combined indicators of education, health and standard of living. Out of the 61 deprived persons, the highest deprived persons are in the ST community (50.82 percent). Compare to ST community deprivation is less in General category (16.37 percent) and OBC (19.67 percent).

3.6 Head Count Ratio of Households

The MPI includes two measurements such as, (i) The proportion or incidence of people (within a given population) who experience multiple deprivations; and (ii) The intensity of their deprivation: the average proportion of (weighted) deprivations they experience. The Headcount ratio (H), it shows the proportion of the people who are multidimensional poor.

Table 7: Head Count Ratio of Households

Social Group	Total number of persons	Number of Deprived persons	Head Count Ratio(H)
Scheduled Tribes (ST)	92	31	0.337
Scheduled Caste (SC)	51	8	0.157
Other Backward Caste (OBC)	57	12	0.211
General Category	54	10	0.185
Total	254	61	0.240

Source: Sample Survey.

The head count poverty ratio of the rural households reveals that out of the 254 peoples, 61 of the rural population are living in multidimensional poor status. This head count ratio of different rural households means that they are in acute poverty. It shows that on the basis of head count ratio of ST population is most and SC population is least deprived on the basis of sample survey.

3.7 Intensity of Poverty of Rural Population

The intensity of poverty is based on the weighted component indicators in which, on average poor people are deprived. For poor households only the deprivation scores are summed and divided by the total number of poor persons. The weight may be given as each indicator of education and health is equally weighted as 1/6 or 16.7 percent and standard of living indicators weight a 1/18 or 5.6 percent. The intensity of poverty measured as weighted score of the deprived divided by number of deprived persons**.**

Table 8: Intensity of Poverty of Rural Population

Social caste	Weighted score of the Deprived	Number of Deprived Persons	Intensity of Poverty (A)
Scheduled Tribes (ST)	14.44	31	0.47
Scheduled Caste (SC)	2.73	8	0.34
Other Backward Caste (OBC)	4.68	12	0.39
General Category	3.36	10	0.34
Total	25.21	61	0.41

Source: Sample Survey.

The table 8 reveals that the average intensity of poverty among the rural households. The intensity of deprivation is the average percentage of deprivation (A) experienced by people living in multidimensional poverty is 0.41 percent among the rural communities. The intensity of deprivation among rural communities in terms of weighted indicators is 47 percent in ST, 34 percent in SC, 39 percent in OBC, and 34 percent in General category.

3.8 Multidimensional Poverty Index of Rural Households

The multidimensional poverty is calculated by using two measures, they are the head count ratio(H), and the average intensity of poverty (A).

MPI= H×A

Where, H= Percentage of people who are poor
A= Average Intensity of Deprivation in Percentage
A person is considered poor if one is deprived in at least 33.33percent of the weighted indicators.

Table 9: Multidimensional Poverty Index

Social Group	Head Count Ratio (H)	Intensity of Poverty (A)	MPI
Scheduled Tribes (ST)	0.337	0.47	0.158
Scheduled Caste (SC)	0.157	0.34	0.053
Other Backward Caste (OBC)	0.211	0.39	0.082
General Category	0.185	0.34	0.063
Total	0.240	0.41	0.098

Source: Sample Survey

The Table 9 reveals that multidimensional poverty index of different rural communities in Kasaragod district. It was found that the MPI score of rural peoples is 0.098. The 24 percent of rural peoples are poor were deprived in all the considered indicators. Those who are MPI poor suffer from deprivation in 41 percent of the indicators, on average. The MPI score is highest in the ST community 0.158 and lowest in the SC community 0.053. The MPI value of other communities is OBC is 0.082 and General category is 0.063. This result shows that the ST communities are highly deprived and also high multidimensional poverty is high among this community.

4. Conclusion

The Multidimensional Poverty Index is the most important measure of the poverty of rural peoples because of its multi-dimensions and multi-indicators of human development which provide the reason behind the causes and effect of poverty and the solution how to prevent the poverty. The Multidimensional Index of deprivation was constructed on the basis of three important variables like nutrition, literacy rate and a composite index of basic standard of living. The two main characteristics of acute poverty such as, firstly it includes people living under conditions where they do not reach the minimum internationally agreed standards in indicators, such as being well nourished, being educated or drinking clean water. Second, it refers to the conditions where people, they do not reach the minimum standards in several aspects at the same time. Multidimensional poverty aspect of measure can be calculated by using both head count ratio and intensity of poverty. The study shows that MPI value of deprived people in the sample survey. On the basis of the study, the ST population are more deprived and SC population is least deprived community in the rural households.

References

Amartya Sen(1985), Commodities and Capabilities, Oxford University Press , New Delhi.

Amartya Sen (2005), Human Right and Capabilities, Journal of Human Development,Vol.6(2), *Arab Human Development Report 2002*, United Nations Development Programme.

Bidyadhar Dehury and Sanjay K Mohanty (2015), Regional Estimates of Multidimensional Poverty in India, International Institute for Population Sciences. Pp. 3-15.

Government of *Kerala, Economic Review (2016)*, State Planning Board, Thiruvananthapuram, *Kerala.*

Government of Kerala (2011), Economics and Statistical Department, Profile of Kasaragod District 2011 Census.

IAMR (2011), India Human Development Report 2011, Institute of Applied Manpower Research, Oxford University Press, New Delhi.

Mandal, R (2010), A Spatial-Temporal Investigation into the Performance of a North-eastern State: A Human Development Approach, Indian Journal of Human Development, Vol. 4(2).

OPHI (2018), Oxford Poverty & Human Development Initiative 2018, Global MPI Winter 2017/18.

OPHI2015), Oxford Poverty and Human Development Initiative, Brief Methodological note 2015.

Rashed Al Mahmud Titumir and K.M. Mustafizur Rahman (2013), Poverty Measurements: Comparing Different Approaches, Measuring Multidimensionality State of Poverty in Bangladesh 2013, pp. 1-9.

Sabina Alkire and Maria Emma Santos (2010).Acute Multidimensional Poverty: A New Index for Developing Countries, Oxford Poverty and Human Development Initiative Working Paper No.38, pp.1- 65.

Sachin More and Narendra Singh (2014), "Poverty in India: Concepts, Measurement and Status, Munich Personal RePEc Archive. Paper No. 62400, pp.1-16

Sivakumar, Marimuthu and Sarvalingam, A, (2010), Human Deprivation Index: A Measure of Multidimensional Poverty. Munich Personal RePEc Archive, Paper No. 22337.

UNDP (2010), Human Development in India: Analysis to Action, United Nations Development Programme.

UNDP (2010), Human Development Report 2010, United Nationals Development Programme.

UNDP (1990), Human Development Report 1990, United Nationals Development Programme.

UNDP (2015), Human Development Report 2015, United Nationals Development Programme.

VenkatanarayanaMotkuri (2007), Measuring the Human Development or Deprivation: A Review of (Different Composite Index) Methods, Munich Personal RePEc Archive Paper No. 48506. Pp. 1-16.

Vinesh Kumar K.V (2016) Measuring human development and deprivation through multidimensional poverty index, Ph.D Thesis, Kanur University, Kannur.

Vipin Chandran K P and Sandhya P (2016), Development Economics", National Publishing House Calicut, pp. 164-169.

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