

MULTI-DIMENSIONAL POVERTY: AN EMPIRICAL STUDY IN BANKURA DISTRICT, WEST BENGAL

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ABSTRACT

Poverty is a multi-faceted issue. Recently UNDP has recognised the Multi-dimensional Poverty Index (MPI) to measure poverty across the field of health, education and living conditions. This study explores the incidence and intensity of multi-dimensional poverty for the households in Bankura district, West Bengal. It also assessed the impact of income poverty along with some selected socio-economic traits on the probability of being multi-dimensionally poor. In order to construct MPI, we have considered ten indicators covering three dimensions viz. health, education and the living conditions. The logit regression model has been formulated for assessing the impact of income poverty along with some selected socio-economic characteristics on probability of the incidence of multi-dimensional poverty. This study used a primary data set collected from 580 households. It was obtained that 40 per cent of the sample households are income-poor while 52 per cent suffer from multi-dimensional poverty. Besides, 29 per cent of the non-poor households are vulnerable and may join the ranks of multi-dimensionally poor. The value of MPI for Bankura district is found to be 0.27. The logit regression analysis reveals a close connection of multi-dimensional poverty with the income poverty of the households. Incidence of multi-dimensional poverty varies significantly across the major occupational groups and castes. However, SHG-centric micro-finance programme and financial inclusion are less important to reduce multi-dimensional poverty in Bankura district.

Introduction

In the recent times, poverty is viewed as a multi-faceted issue. The notion of poverty is extended far beyond inadequate income—to poor health and nutrition, low

education and skill, inadequate livelihood and living conditions. The money metric approach to poverty measurement fails to encompass these issues. It leads to the development of alternative measures that

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include the multiple dimensions of poverty and alleviate the limitations of money metric measures. A Report of Planning Commission of India (2006) explicitly adopted a 'multi-dimensional view of poverty' which is known as 'multiple deprivations' view. It interpreted the 2002 BPL not as a proxy means for income or expenditure poverty, but rather as a direct measure of multi-dimensional poverty that encompasses expenditure poverty and goes beyond it. However, income and expenditures based measures do not represent a real sense of the deprivations facing the poor (Sen, 1988, Dreze and Sen, 2002). As a result, the famous Human Development Index (HDI) pioneered by the UNDP appeared. We have got Human Poverty Index (HPI). The Gender Development Index (GDI) and the Gender Empowerment Measure (GEM) have also been developed to measure poverty in a gender perspective. These indices are now used to measure the average achievement for the country as a whole; such indices divert the focus from the poor. They do not take into account the distribution of human development within population sub-groups or households. Thus, these measures are not applicable to measure the incidence and intensity of poverty at the household level and at the individual level. Very recently, Alkire and Santos, (2010) introduced Multi-dimensional Poverty Index (MPI) to focus multi-dimensional deprivations among poor households. The first effort to implement a multi-dimensional measure of poverty has been in the UNDP Human Development Report, 2010, following methodology of Alkire and Santos, (2010). The MPI evaluates poverty based on a household's deprivation in three basic dimensions –health, education and living standards. The main advantage of

MPI over HDI is that it is applicable at the country level as well as at the household level. The MPI helps identify the poor and design policies to address the interlocking deprivations of the poor households. Therefore, this approach is consistent with the household level empirical work which would be helpful for decentralised planning. This paper attempted to focus glimpses of the incidence and intensity of multi-dimensional poverty of the households in the district of Bankura, West Bengal.

Literature Review and Objectives

The concept of multi-dimensional poverty is grounded on capability approach to human development. According to Sen (1988), income represents the means to better living conditions but it is not the better living condition in itself. In order to alleviate poverty he proposed to reduce deprivations in living conditions or functionings that people can achieve. Income creates the ability to purchase commodities that help achieve some functionings but the conversion of commodities into functionings is not precise for all. Individuals/households differ in their ability to convert commodities into functionings due to a range of factors such as physical entitlement, nature of occupation, public actions, and social status. However, Sen (1988) did not propose any measure that captures multiple dimensions of deprivation or poverty. The first successful attempt to measure multi-dimensional deprivations was HDI in 1990 proposed by Mahbub ul Haq. It has been appearing as achievement index of the countries in Human Development Reports since 1990. The measure of HDI includes average income, longevity and educational attainment of the country. But

this measure is not applicable for the household level data. Alkire and Santos, (2010) were the first who computed MPI for 104 developing countries using household survey data. They considered ten indicators corresponding to same three dimensions as the HDI: Education, Health and Standard of Living. The MPI captures a set of direct deprivations that batter a person at the same time. In their working paper they explained the computational methodology and components in the MPI. They examined the relation between three income headcounts (using the \$1.25/day, \$2/day and national poverty lines) and deprivations in each of the three dimensions of the MPI, as well as with the MPI itself. They found that the headcounts with the two international poverty lines are highly correlated with the MPI, but correlations are much lower with the headcounts using the national poverty lines. However, they documented many examples of mismatches between the two poverty criteria. Following Alkire and Santos, (2010), UNDP Human Development Report published that most of the world's multi-dimensional poor live in South Asia and Sub-Saharan Africa. They calculated that 55.4 per cent of the population of India is multi-dimensionally poor. Intensity of multi-dimensional poverty among the Indian States is highest in Bihar (MPI=0.5) followed by Jharkhand, Uttar Pradesh, and Madhya Pradesh. It shows that the value of MPI of West Bengal (MPI=0.32), Odisha, Rajasthan and that of north eastern States belongs to the range 0.3-0.4 in 2008-9. Bagli (2013) developed a comprehensive index of housing deprivation (IHD) for each State in India. This index combines four indicators of housing condition viz. percentage of households having soil made house;

percentage of households using unsafe source of drinking water; percentage of non-electrified households and percentage of households without improved sanitation facility. The IHD has been computed measuring the normalised inverse Euclidian distance of the deprivation index vector from the worse situation of deprivation. It has been reported that housing deprivation is highest in Odisha followed by Bihar, Jharkhand. Housing deprivation is least in the States of Delhi, Kerala, Goa and Haryana. The study obtained a close and negative association between IHD and HDI. However, this measure covered only the living standard dimension of poverty and is applicable in macro level study.

So far, these studies and reports did not provide district level MPI which is very important for decentralised planning. Even human development reports of the districts in West Bengal did not cover the issue of MPI. We know that the districts of Bankura, Purulia and West Midnapore are the most backward districts, which are called Jangalmahal, in West Bengal. They deserve separate plan for human development. However, for this purpose we need to understand the present situations of MPI and its components for these districts. With this end in view, we planned to study the nature and causes of MPI in the district of Bankura with the following objectives.

First, we study the incidence and intensity of multi-dimensional poverty for the households residing in the district of Bankura, West Bengal.

Second, we examine the impact of household income along with other selected household characteristics on the incidence of multi-dimensional poverty.

Methodology and Data Source

In order to study the multi-dimensional poverty for the households in Bankura district, we follow the methodology of multi-dimensional poverty index (MPI) proposed by Alkire and Santos (2010). It covers the overlapping deprivation across the field of health, education and standard

of living. We have considered ten indicators in total for capturing the deprivation in the array of three dimensions viz. health, education and standard of living. The dimensions and indicators of multi-dimensional poverty with deprivation criteria and weights are presented in Table 1.

Table 1 : Dimensions and Indicators of Multi-dimensional Poverty

Dimension	Indicators	Weight
Health	1] At least one member suffers from malnutrition	5/3
	2] One or more child have died during last five years	5/3
Education	1] No one has completed primary level education	5/3
	2] At least one school-age child not enrolled in school	5/3
Living Condition	1] No electricity connection at house	5/9
	2] No access to safe drinking water	5/9
	3] No access to improved sanitation	5/9
	4] House has mud wall/floor	5/9
	5] Household uses dirty cooking fuel (dung, firewood or charcoal)	5/9
	6] Household owns at most one of: bicycle, motorcycle, radio, refrigerator, telephone/mobile or television	5/9

Source: Compiled from UNDP Human Development Report, 2010.

Equal weight has been attached for each dimension and each indicator within a dimension has also got equal weight. We assign value '1' for deprivation in each indicator and '0' otherwise. So, the maximum total deprivation score (d) is 10. The maximum deprivation score in each dimension is 10/3 since the MPI puts equal weight for each dimension. As the dimension of health has two indicators, each indicator with deprivation in the health dimension is

worth 5/3. Similarly, each indicator of education dimension of deprivation takes score 5/3. The standard of living dimension has six component indicators, so each indicator with deprivation carries score 5/9. Now to measure the deprivation level of a household, we take the summation of the weighted deprivation score (WDS) obtained by the household in the range of all the dimensions and indicators. According to UNDP, a household (or all members of the

household) is said to be multi-dimensionally poor if it scores 3 or more. This study considered whether a particular household is multi-dimensionally poor or not as a measure of the incidence of multi-dimensional poverty.

Alkire and Santos (2010) already explained the justification behind the inclusion of these dimensions and indicators for measuring MPI. Their empirical study is, however, based on secondary data. Among the indicators the measure of malnutrition due to poverty is difficult one. Usually, the malnutrition status is measured following BMI for adults and weight for age for children. We follow these measures but it was not possible to follow these accurate measures for each household member due to absence of some of them and due to our time and technical constraints. We rather measure it by personal observations keeping the measures of BMI and weight for age of children in mind. For other indicators we simply gather the required information asking the respondents and from our observations.

One can compute the multi-dimensionally poverty head count ratio (H) as the proportion of the multi-dimensionally poor people to the total population. Therefore,

$$H = q / n$$

where, q stands for the number of multi-dimensionally poor people/households and n is the total population/households. It actually measures the incidence of poverty. The intensity of multi-dimensional poverty (A) reflects the proportion of the weighted component

indicators, in which, on average, poor people are deprived of. Technically,

$$A = \sum_1^q c/qd$$

where, c denotes the total score of weighted deprivations the poor people experience and d stands for the total number of indicators in all the dimensions of deprivation. Finally, the multi-dimensional poverty index is obtained by multiplying the multi-dimensionally poverty head count ratio (H) with the intensity of multi-dimensional poverty (A). Therefore,

$$MPI = H \times A$$

This measure replaces the Human Poverty Index which reflects aggregate deprivation in health, education and standard of living. The Human Poverty Index in reality suffers from the problem in identifying specific individuals, households or a specific group. The MPI addresses this shortcoming too. The measure of MPI is applicable at the country level as well as at the household or individual level to measure the deprivation in standard of living, health and knowledge. Not only that, we can segregate the measure by dimension to show how the composition of multi-dimensional poverty changes in incidence and intensity for different regions, castes or communities and so on. Therefore, the MPI is most appropriate for policy prescriptions regarding the poverty alleviation in the developing countries particularly for a region or community.

We have attached value '1' if the household is multi-dimensionally poor and '0' otherwise. It makes the incidence of multi-

dimensional poverty a binary variable. We, therefore, formulated a binary logit regression model to explore the impact of money metric poverty, occupation, participation in poverty alleviation programme, and caste on probability of the incidence of multi-dimensional poverty for the sample households.

This empirical study is based on a household survey conducted in two blocks, Kotulpur and Chhatna, of Bankura district during 2012-13. The district of Bankura is a backward district in West Bengal. Among the selected blocks, Kotulpur is relatively developed whereas Chhatna is relatively underdeveloped area in the district of Bankura. At the first stage we randomly selected two Gram Panchayats from Chhatna block and three from Kotulpur block. This study covered twelve villages taking at least two from each Gram Panchayat. Finally, after making a pilot survey for each village, sample households were selected randomly from the sample villages. It should be noted that the number of households in the sample from each village are not equal. It varied with total inhabitants and other socio-economic characteristics of the villages. Therefore, sampling for this study may be looked as a multi-stage stratified random sampling. During the field survey we recorded the relevant information of 580 households. Among them 320 households belong to Kotulpur block and 260 households belong to Chhatna block.

Empirical Findings and Discussion

This section is devoted to analyse the empirical findings. Table 2 describes the summary statistics of the indicators of multi-dimensional poverty of the sample

households. We find that 37 per cent of our sample households have at least one malnourished member. Malnutrition problem is more severe in Chhatna block compared to Kotulpur block. Eleven per cent of the sample households reported that at least one child below five years died during the last five years. In this circumstance, position of the two sample blocks are almost same. In more than one-fifth of the sample households no one household member passed primary level education. In spite of the commendable expansion of educational infrastructure in West Bengal, still at least one child (up to 14 years) of one-third sample households are not enrolled in educational institutions at the time of survey. However, in terms of educational deprivation there is wide variation in between the sample blocks. In Kotulpur block, percentage of households with no one member having at least primary level education is only 10.93 per cent while in Chhatna block this is 33.07 per cent. It is not surprising that 47.3 per cent of the sample households in Chhatna block school dropout children. Many households in Chhatna block reported that these school dropout children are engaged in several informal jobs like jewellery firm, embroidery industry, construction industry, agriculture, etc., for earning household livelihood. One-fifth of the sample households in Kotulpur block have at least one school-age child not enrolled in school. In Kotulpur block, almost all the sample school dropout children are involved in agricultural allied activity due to huge demand for agricultural labour throughout the year. Therefore, prevalence of child labour is rampant in Bankura district. Educational deprivation is a cause and consequence of the prevalence of child labour. Unhealthy work place and hard work

at the early age make the persons malnourished. It is, therefore, conclusive that educational deprivation and prevalence of child labour are the major contributors of multi-dimensional poverty in the district of Bankura.

Table 2 : Description of the Indicators of Multi-dimensional Poverty

Dimension/Indicator	Total Sample Households (%) 580 (100)	Households belonging to Kotulpur block (%) 320 (100)	Households belonging to Chhatna block (%) 260 (100)
Health			
At least one member is malnourished	215(37)	54 (16.87)	161 (61.92)
One or more child have died during last five years	66 (11)	37 (11.56)	29 (11.15)
Education			
No one has completed primary level education	121(21)	35 (10.93)	86 (33.07)
At least one school-age child not enrolled in school	190 (33)	67 (20.93)	123 (47.3)
Living Conditions			
No electricity connection at house	135 (23)	44 (13.75)	91 (35)
No access to safe drinking water	203 (35)	62 (19.37)	141 (54.23)
Household uses dirty cooking fuel (dung, firewood or charcoal)	435 (75)	238 (74.37)	197 (75.76)
House has mud wall/floor	405 (70)	189 (59.06)	216 (83.07)
No access to improved sanitation	398 (69)	181 (56.56)	217 (83.46)
Household owns at most one of: bicycle, motorcycle, radio, refrigerator, telephone/mobile or television	86 (15)	46 (14.37)	40 (15.38)

Source: Author's own computation based on sample observations.

It has been found that 23 per cent of the sample households are not electrified. It is not surprising that 35 per cent of the surveyed households drink unsafe water. It was observed that most of these households drink water heavily contaminated by iron. With respect to the access to electricity and safe drinking water, the position of Chhatna block is far behind the Kotulpur block. There is no significant difference in between the

sample blocks in terms of used fuels for cooking. Three-fourths of the sample households use fuel like dung, firewood or charcoal for cooking. It indicates that households in the area under study have hardly access to modern fuel and energy for cooking. Housing condition of the sample households is not so good. It is observed that 70 per cent of the sample households live at house with completely mud wall/floor. Our

survey reported that more than two-thirds of the sample households do not have access to improved sanitation. It tells us that the households in the district of Bankura are not conscious regarding health and hygiene. Housing deprivation and no access to improved sanitation are more acute in Chhatna block compared to Kotulpur block. Thus, lack of concrete structure of house including safe drinking water and improved sanitation facility are the factors accountable to the multi-dimensional poverty of the households in Bankura district. Although no one has a car of their own, it was observed that majority of the sample households are

not asset poor. A few households have refrigerator and landline telephone connection along with other assets. Ownership of bicycle, mobile, motorcycle and television are very common in the area under study. We find that only 15 per cent of our sample households do not own more than one of the listed assets under the dimension of standard of living. The picture of asset holding is more or less identical in both the sample blocks. The description of the deprivation indicators, therefore, shows that a large section of the sample households in the districts of Bankura are poor in terms of health, education and living conditions.

Table 3 : Percentage Distribution of the Attributes of the Households (N=580)

Selected Attributes of the Households	Number	Percentage
Landless households	85	14.65
Participation in Self-Help Group-Centric Micro-finance Programme	255	43.97
Participation in MGNREGS	183	31.55
Financial Inclusion (At least one member have at least one of: a bank A/C/post office A/C/Life Insurance/Health Insurance)	356	61.38
Cultivation as Major Occupation	257	44.31
Non-farm Self-Employment/Service as Major Occupation	125	21.55
Casual Labour as Major Occupation	198	34.14
Belonging to Scheduled Castes	195	33.62
Belonging to Scheduled Tribes	68	11.72
Belonging to OBC	136	23.44
Belonging to General Castes	181	31.20
Nuclear Family	475	81.90

Source: Author's own computation based on sample observations.

Table 4 : Descriptive Statistics of the Households Characteristics (N=580)

Selected Variables (Households Traits)	Mean	Std. Dev.	Maximum	Minimum
Family Size (Number)	3.86	1.17	8.00	1.00
Extent of Multi-dimensional Poverty	3.34	2.30	10.00	0.00
Duration of Participation in SHG (Month)	27.24	36.79	145.00	0.00
Highest Education Among Males (Year)	7.89	4.43	22.00	0.00
Highest Education Among Females (Year)	5.54	4.55	19.00	0.00
Landholding (bigha, 1 bigha=0.4 acre)	2.65	2.99	16.00	0.00
Worker Population Ratio WPR (%)	50.32	21.98	100.00	0.00
Annual Per Capita Income (₹ '000)	13.81	13.86	150.00	3.90

Source: Author's own computation based on sample observations.

Tables 3 and 4 present the socio-economic profile of the sample households. In order to measure the extent of multi-dimensional poverty of the households we consider the sum of the score obtained by the household in the range of all the dimensions and indicators. In this respect, average extent of multi-dimensional poverty is 3.34 which is greater than the cut-off value for the multi-dimensional poverty. During the field survey it was observed that the SGSY and MGNREGS are functioning to serve the poor in the district of Bankura. It has been reported that 44 per cent of the sample households participated in self-help group (SHG)-centric micro-finance programme under SGSY. The average length of participation of sample SHG-members is 27 months. Among the sample households, 31 per cent have job-card under MGNREGA. However, most of the job-cardholders under the sample reported that they got 35-40 days employment in average during the financial year 2011-12. The policies of SGSY and MGNREGS, therefore, fail to reach the vast section of poor in the area under study. Thus, there is a greater scope for further extension

of these policies for improving the economic condition of the rural poor. At least one member of 61 per cent of the surveyed households have at least one of: a bank A/C/post office A/C/Life Insurance/Health Insurance, while 54 per cent have access to formal credit. Thus, majority of the households in the area are financially included. In terms of major occupation, we have divided the households into three categories- cultivator, self-employed/service and casual labour. Among the sample households, 44, 21 and 34 per cent are cultivators, self-employed/service and casual labour, respectively. Our sample comprised 34 per cent scheduled caste, 12 per cent scheduled tribe and 54 per cent general caste/OBC households. Majority of the households are of nuclear type. In Table 4 we find that average household size in the sample is 4. Average education of the highest qualified male (female) member in the sample households is eighth (sixth) standard. Average landholding among the sample households is 2.65 bigha while 14 per cent of sample households are landless. The average annual household income is ₹ 13.81

thousand which is close to the poverty line income for the rural people in West Bengal. The statistics of worker population ratio tells us that the average worker population ratio of the sample households is 50.32 per cent.

In Table 5 we see that among the sample households, 52.5 per cent are multi-dimensionally poor, while 40 per cent are income poor in accordance with the poverty line income (₹ 643.20 per head per month) for the rural people in West Bengal (Government of India, 2012). It is indicative that multi-dimensional poverty is more acute relative to income poverty in Bankura district. We now look at the multi-dimensional poverty head count ratio for the sample blocks separately. In Kotulpur block, 19.06 per cent sample households are income-

poor, but in Chhatna block, 65.76 per cent households are income-poor. We find that 43.6 per cent of the sample households in Kotulpur block while 74.6 per cent of sample households in Chhatna block are multi-dimensionally poor. Finally, the calculated value of multi-dimensional poverty index for the sample households is found to be 0.270. It is 0.151 for Kotulpur block and 0.416 for Chhatna block. Therefore, in terms of income and multi-dimensional poverty index poverty is severe in Chhatna block compared to Kotulpur block. Higher deprivations in nutrition, in education, in access to improved sanitation, in access to safe drinking water are the primary causes of the severe multi-dimensional poverty in Bankura district in general and in Chhatna block in particular.

Table 5 : Multi-dimensional Poverty for the Sample Households

Measures of Poverty	Total sample households	Households belonging to Kotulpur block	Households belonging to Chhatna block
Income-poor (%)	40	19.06	65.76
Multi-dimensional Poverty Head count ratio	0.525	0.346	0.746
MPI	0.27	0.151	0.416

Source : Author's own computation based on sample observations.

Table 6 : Extent of Multi-dimensional Poverty Among the Sample Households

Weighted Deprivation Score (WDS)	Level of Multi-dimensional Poverty	Total sample households	Households belonging to Kotulpur block	Households belonging to Chhatna block
7 < WDS = 10	Extreme	55 (9.45)	03 (0.93)	52 (20)
5 < WDS = 7	Moderate	69 (12.00)	16 (5)	53 (20.38)
3 < WDS = 5	Poor	181 (31.20)	92 (28.75)	89 (34.23)

(Contd...)

Table 6 (Contd...)

Weighted Deprivation Score (WDS)	Level of Multi-dimensional Poverty	Total sample households	Households belonging to Kotulpur block	Households belonging to Chhatna block
2 < WDS = 3	Vulnerable (Non-poor)	79 (13.60)	55 (17.18)	24 (9.23)
0 = WDS = 2	Well-off (Non-poor)	196 (33.75)	154 (48.12)	42 (16.15)

Source : Author's own explanation.

In accordance with the sum of weighted deprivation score (WDS) of the indicators of multi-dimensional poverty we have categorised the households into five categories as shown in Table 6. We find that 10 per cent of the sample households are extremely poor. It is observed that extreme poverty in Kotulpur block is negligible, but 20 per cent of the sample households belonging to Chhatna block are extreme poor in the sense of multi-dimensional poverty. Only 5 per cent of the sample households residing in Kotulpur block while 20.38 per cent of the sample households residing in Chhatna block are moderate poor. The extent of poverty of 12 per cent of the total sample households is moderate. It has been seen that 31 per cent of the sample

households are marginally poor. We already said that in total 52 per cent are multi-dimensionally poor. Besides, 13 per cent of the sample households, who are 29 per cent of the non-poor households, are vulnerable and may join the ranks of households experiencing multi-dimensional poverty. Vulnerability to multi-dimensional poverty is higher in the Chhatna block with reference to Kotulpur block. Therefore, our empirical study reveals that in accordance with the methodology of multi-dimensional poverty two-thirds of the households in Bankura district are either vulnerable or poor. Moreover, the extent of multi-dimensional poverty is severe in Chhatna block compared to Kotulpur block.

Table 7 : Estimates of the Incidence of Multi-dimensional Poverty (N=580)

Dependent Variable: Incidence of Multi-dimensional Poverty				
Method: ML - Binary Logit (Newton-Raphson)				
Convergence achieved after 6 iterations				
Covariance matrix computed using second derivatives				
Explanatory Variables (Socio-economic characteristics of the households)	Coefficient	Std. Error	z-Statistic	dy/dx evaluated at mean
Constant	1.884	0.405	4.65*	
Annual Per Capita Income (₹ '000)-0.149	0.023	6.35*	-.037	

(Contd...)

Table 7 (Contd...)

Dependent Variable: Incidence of Multi-dimensional Poverty
 Method: ML - Binary Logit (Newton-Raphson)
 Convergence achieved after 6 iterations
 Covariance matrix computed using second derivatives

Explanatory Variables (Socio-economic characteristics of the households)	Coefficient	Std. Error	z-Statistic	dy/dx evaluated at mean
Major Occupation , (Cultivation =1)#	-1.163	0.266	-4.37*	-0.281
Major Occupation (Non-farm Self-employment / Service = 1)#	-1.116	0.330	-3.38*	-0.261
Financial Inclusion (Yes =1)#	0.252	0.258	0.98	0.062
Duration of Participation in SHG (Year)	-0.005	0.036	-0.13	-0.001
Caste (OBC=1)#	0.568	0.267	2.12**	0.141
Caste (Scheduled Caste=1)#	1.220	0.276	4.42*	0.295
Caste (Scheduled Tribe=1)#	1.401	0.412	3.40*	0.322
Summary Statistics				
McFadden R-squared	0.289	Log likelihood	-285.011	
LR statistic [Ch ² (8)]	232.47	Probability (LR statistic)	0.000	

y: Probability of being Multi-dimensional Poor Households (predict) = 0.477

dy/dx :Marginal effects after logit.

(#) dy/dx is for discrete change of dummy variable from 0 to 1,

Casual labour class is reference category for major occupations and General caste is reference category for Castes

* and ** stand significant at 1 per cent level and at 5 per cent level, respectively.

Source: Author's own computation using software STATA 9.2.

The logit regression analysis shows that the intensity of multi-dimensional poverty is closely connected with the income poverty of the households. The marginal change in probability of being multi-dimensional poor household tells us that one thousand additional per capita income reduces the probability of the incidence of multi-dimensional poverty of the households by 3.7 per cent points. Income

increases the purchasing power which helps the households fight against multiple deprivation. Thus, income generation is a favourable instrument for alleviating multi-dimensional poverty. The coefficient of the major occupation (cultivation=1) and (Non-farm Self-employment /Service=1) indicate that cultivator and non-farm self-employed/service holder households are relatively less poor compared to casual labour class. If a

household can move from casual labour to cultivator, the probability of being multi-dimensionally poor will reduce 28 per cent points. Therefore, land redistribution in favour of landless or poor is urgent in order for multi-dimensional poverty reduction. On the other hand, the probability of being multi-dimensionally poor will reduce 26 per cent points if a labour class household can shift to self-employment or service. Thus, occupation mobility from casual labour to cultivator or self-employment or service is needed to arrest multi-dimensional poverty of the households in Bankura district.

Our empirical estimation shows that financial inclusion measured by participation in SHG has no direct role to combat multi-dimensional poverty in the district of Bankura. It was observed that the coefficient of the duration of SHG membership is negative. It implies that higher length of SHG membership combat the probability of being multi-dimensionally poor. Our previous studies conducted in this district (Adhikary & Bagli 2012, Bagli & Adhikary 2013,) reveal that SHG-centric micro-finance programme successfully ensured access to affordable micro-credit of the rural people. SHGs reduce income poverty of the rural people. It can finance to smooth consumption throughout year, to purchase durable assets to facilitate drinking water to build sanitation, etc. So it was expected that the duration of SHG membership reduces the probability of the incidence of multi-dimensional poverty. Our empirical finding confirms this direction, but it is not statistically significant. The marginal probability of the incidence of multi-dimensional poverty reveals that in contrast to the general caste households, scheduled caste and scheduled tribe households are more likely to fall in multi-dimensional

poverty. The probability of being multi-dimensionally poor for a scheduled caste (scheduled tribe) household is 29 per cent (32 per cent), higher than that for general caste households. The probability of the incidence of multi-dimensional poverty for OBC households is 14 per cent higher than that of the general caste households. Thus, the scheduled tribe households in Bankura district are most backward than other households in Bankura district.

Concluding Remarks

This study reveals that multi-dimensional poverty in the district of Bankura is a more serious problem than the income/consumption poverty. Income generation, no doubt, has some accelerating effect on reducing multi-dimensional poverty. In addition to income generation, we need to ensure the accessibility to other improved facilities like health care, safe drinking water, education, affordable housing, and sanitation that directly fight with multi-dimensional poverty. These are badly needed particularly for the socially backward people belonging to scheduled caste, scheduled tribe, OBC people and casual labour class.

This study claims upward occupational mobility towards cultivation or non-farm self-employment or service for reducing the pangs of multi-dimensional poverty. In order to speed up the occupational mobility, we have to take some further decentralised planning towards land redistribution and micro-entrepreneurship development which help poor people shift to cultivation or non-farm self-employment occupation. Some continuous employment generation plan/programme is also necessary. We have the experience that

immediate steps towards land redistribution towards poor have some socio-economic difficulty. Of course, we may follow the scheme like land purchase scheme for SC/ST women in Tamil Nadu. Under this scheme, landless women can purchase land for cultivation with a maximum project cost rupees two lakh. This scheme entails 50 per cent subsidy from Tamil Nadu Adi Dravidar Housing and Development Corporation Ltd. and remaining part comes as bank loan. Moreover, implementation of policies regarding non-farm self-employment or salary based employment generation is urgent. We have already MGNREGS for employment generation for the rural people. It is evident that this programme has been able to provide only 35-40 days job per year in the area under study. So, it is another casual employment system for the rural households. It implies that MGNREGS has done little for the poor and fails to change major occupation of the households in Bankura district. In order to generate incessant employment we actually need new industrialisation. For example, Chhatna block has an ample opportunity to develop eco-tourism based on Chota Nagpur plateau specially focusing the hilly terrain surrounding 'Susunia hill'. Herbal medicinal industry and food processing have also some prospects in this district. We also need modernisation of the traditional industries, like 'Terakota', Handloom, 'dogra' in this district. Juxtaposed with the industrialisation, we have to take some policies for rural entrepreneurship development. Tailoring, carpentry, animal husbandry, horticulture, sericulture, floriculture, medicinal planting, fruit processing, pisciculture and agri-business

are the probable areas for rural entrepreneurship development in Bankura district. It can shift the major occupation of the casual labour towards self-employment or service. It was found that SHG-centric micro-finance programme has been functioning for rural entrepreneurship development in general and women entrepreneurship development in particular. During field survey it was observed that the performance regarding entrepreneurship development of this programme is, however, not commendable in position in Bankura district. A small number of the beneficiaries of SGSY in the area under study have undertaken self-employed activities like tailoring, business of readymade garments, animal husbandry, producing rope and bamboo product. We feel that the lack of management efficiency and social responsibility of the micro-finance institutions are the primary cause of the low performance. However, we find some negligible direct effect of this programme on reducing multi-dimensional poverty. In this study we see that minimum level financial inclusion gauged by having an account with any financial institution or having any kind of insurance policy is not important to affect multi-dimensional poverty. Therefore, financial inclusion policies are less important for reducing multi-dimensional poverty.

This study clearly shows that the scheduled caste, scheduled tribe and OBC households are more deprived in terms of multiple dimensions of poverty. Among the castes, the incidence of multi-dimensional poverty is relatively highest among the households under scheduled tribe households followed by scheduled castes, OBC and General castes. In order to reduce

multi-dimensional poverty of the ST households, we need further extension of local language based primary education facility, affordable sanitation and housing programme. We have the experience that compared to ST households, SC households suffer more from nutritional problem. We thus suggest launching special package for health care for SC households. Finally, to address the multi-dimensional poverty in Bankura district, the Governments should

complete the universal sanitation and safe drinking water project. In addition to the income and employment generating policies, we recommend to implement a universal LPG connection programme in the district of Bankura. We can adopt a savings and subsidy linked credit programme for promoting affordable house or for improved sanitation or for safe water project for the poor.

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