

Synopsis of the Ph.D. Theses entitled as

**Multi-Dimensional Poverty in India
with Special Reference to West Bengal:
A Socio-Economic Analysis**

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Background of the Study

The multidimensional view of poverty originated because of criticism of mainstream economic development that focused on growth in GNP per capita. Growth, though a component of economic progress, is insufficient because it fails to capture inequality and poverty. The multidimensional view of poverty has emerged from the concept of 'Capability Failure'. This means the inability of individuals or communities to choose some valuable 'doings' or 'beings', which are basic to human life, and absolute poverty can be recognized even if one does not know the relative picture. It is argued that poverty can be seen as an absolute inability to pursue certain valuable functioning. Deprivation in capabilities is the result of lack of opportunity-signifying that society has not provided people with access to the means to develop or maintain essential human capabilities. The first multidimensional poverty (viz. Human Poverty Index(HPI)) was introduced by UNDP in Human Development Report (1997). The Human Poverty Index (HPI) concentrates on deprivation in three essential elements of human life already reflected in HDI – Longevity, Knowledge and a decent standard of living. The first deprivation relates to survival – the vulnerability to death at a relatively early age. The second relates to knowledge – being excluded from the world of reading and communication. The third relates to a decent standard of living in terms of overall economic provisioning. The HPI generally fails to capture the head-count ratio(HCR) and it is not sub-group decomposable. Moreover, the contribution of each sub-dimension of poverty cannot be captured. Keeping in mind all these limitations, the UNDP (2010) has suggested a new measure of multidimensional poverty popularly known as multidimensional poverty index (MPI). My Theses tries to shed light on the estimation of MPI across the states in India at the disaggregate level with a view to suggest some policies that can be used to reduce regional imbalance in one hand and to ensure equity and social justice on the other hand.

Importance, Scope and Objective of the Study:

India has been sharing about 17.5% and 28% of total world's population and multidimensional poor respectively; eight Indian states that have a similar number of poor as in 25 African countries are Bihar, Jharkhand, Madhya Pradesh, Uttar Pradesh, Chhattisgarh, Odisha, Rajasthan and West Bengal [OPHI 2018]. India's economic

performance at the national level was not so bad during the last two decades, however, India has been ranked very low, 97th among the 118 countries in 2016 on Global Hunger Index [IFRI 2016]. A wide range of anti-poverty policies have been initiated since independence in India but still human poverty in some of the states remain high especially after initiation of structural adjustment programme (SAP) in 1991. In order to reduce regional imbalance and to achieve inclusive growth, an expert committee (which was appointed by the Finance Commission, Government of India in 2013 under the chairmanship of the Governor of RBI, Raghuram Rajan) suggested a rule of allocation of development funds across states based on needs. This allocation rule is criticized on the grounds of arbitrary choice of the parameters; methodology used in construction of underdevelopment index, arbitrary and higher weights attached to population of state etc. Therefore, an in-depth analysis of multidimensional human deprivation needs to be carried out with a view to understand the dynamics and spatial distribution of the incidence, extent and severity of multidimensional poverty at the disaggregate level in India. Such study may be helpful to the development practitioners for policy intervention at the disaggregate level.

A comprehensive study on multidimensional poverty focusing policy perspectives at the disaggregate level is missing from the survey of recent literature. My research is primarily motivated by Alkire et al [2013; 2018] work. Their study measure the incidence and contribution of different dimensions of MPI at the state with a rural urban and socio-religious groups using NFHS-4 data but could not estimate the contributions of different dimensions and the corresponding indicators of multidimensional poverty at the district level, though they have estimated MPI at the district level in 2018. Since the NFHS data do not provide us the income of the household, which is assumed to be important limitations of MPI as pointed out by Ravallion [2010], I have used primary data at the household level (in West Bengal) to study the impact of income on multidimensional deprivation score. This is because poverty is caused by consumption shortfall in basic needs. My study on multidimensional poverty is disaggregated in nature- state level, district level and household level (in West Bengal); moreover, disaggregation is also carried out at the socio-ethnic and religious groups. I have estimated HCR, intensity, contribution of different dimensions (along with indicators) of MPI across 614 districts. This is the novelty of my research. I expect my research

outcomes may help the development planners of both central and state governments to implement need based strategic policies to eradicate multidimensional poverty with a view to achieve sustainable development goals (SDG) of 2030. The additional exercise done by me in this research is to estimate the percentage of deprived population in each indicator of MPI in each district of 29 states in India. This work is extended to different socio-ethnic and religious groups in India. The special feature of my research is household level analysis of the deprivation score of multidimensional poverty in West Bengal. The determinants of multidimensional poverty are estimated from the household level primary survey data. My Dissertation tries to answer the following research questions:

- How is income poverty related to the multidimensional poverty?
- How does the rank of the states change over time based on HCR and MPI? Is the inequality of HCR and MPI across states decreasing?
- How far the infrastructural variables affect the state level variations of MPI in panel data framework? Does history of MPI matter towards current MPI of the states?
- How can we suggest the states (as well as districts) to adopt appropriate policies aiming to eradicate mass human deprivation?
- Is the inequality of deprivation score falling? What are the sources of inequality of deprivation score? Is it due to within states or between states?
- How is the multidimensional poverty (MPI) distributed among the 640 districts in India?
- How do we allocate development grants among the districts manifesting differential MPI? Is it possible to develop a unique methodology towards allocating development grants?
- Which community is more unequal in respect of deprivation score? What are the sources of inequality of deprivation score among different socio-ethnic groups? Is it due to within or between different social groups?
- What are the factors responsible for causing higher deprivation score of MPI at the household level?

Data and Methods

The main data source of my research is NFHS-2, 3 and 4 obtained from IIPS website. The following Table describes about my research data:

Data Description of NFHS

National Family Health Survey(NFHS) Round	Number of Households	Number of States
NFHS-2(1998-99)	92, 486	25
NFHS-3(2005-06)	109041	28
NFHS-4(2015-16)	601509	28

Data Source: IIPS, Mumbai

Each household is identified deprived or non-deprived in each indicator based on the deprivation cut-off set by UNDP (2010).

The socio-economic data at the state level in different time points are drawn from NITI AYOOG (Planning Commission), Government of India, RBI, Census Reports, Registrar General, Government of India. The primary survey data are drawn from CAS funded project carried out by my PhD Supervisors (Dr. Poulomi Roy and Dr. Sushil Kr. Halder) in different regions of West Bengal. The sample frame and design pertaining to my primary survey is mentioned elaborately in the specific section of the chapter. Different statistical tools and econometric analysis are employed in my Dissertation. These are mentioned as follows:

Gini Coefficient

Entropy Measure of Inequality

Decomposition of Entropy Measure

Panel Data Regression

FGT Index

Logistic Regression

Geographical Maps using Geoda software

Organization of the Chapters

On the basis of overall research questions as outlined earlier, total six chapters have been developed to carry out my research. Chapter-1, which is introductory one, contains evolution of the concept and measurement of the multidimensional poverty, a brief

review of literature to focus on my research and to explore research gaps, major research questions, data and methodology. Chapter-2 does contain two parts- the first part deals with national level performance in the context of poverty reduction both monetary and non-monetary with rural urban break up. The first part also deals with the issues of rank correlation between money-metric and non-monetary measure of poverty. The 2nd part deals with the issues of monetary and non-monetary measure of poverty at the sub-national level. The chapter highlights the depth, severity and contribution of dimensions (along with indicators) of multidimensional poverty. The determinants of MPI are studied at the state level using both static and dynamic panel data framework in this chapter. The inequality of poverty (both monetary and non-monetary) is also carried out in this chapter. The third chapter deals with district level analysis of MPI. Which districts are worse-off in respect of dimensions (as well as indicators) are mentioned in this chapter. In this chapter, I propose an allocation rule of development grants among the poorer districts if the development grant is provided by the central government. The fourth chapter discusses the incidence, depth and severity of multidimensional poverty among different socio-ethnic and religious groups. This chapter also highlights the sources of inequality of deprivation score of multidimensional poverty. Chapter-5 is developed to understand the underlying reasons of the variations of the deprivation score at the household level in West Bengal. Overall conclusion and policy options are mentioned in chapter-6.

Major Findings & Policy Implications

In Chapter-2, I have examined how India and her 29 states performed in reducing MPI over time as per NFHS data. The dynamics of MPI across states are studied in Chapter-2. The analysis of poverty has identified that Bihar, Chhattisgarh, Jharkhand, M.P and U.P are the five topmost states in respect of multidimensional poverty. The Rank Correlation Coefficient of the states in respect of MPI between different Rounds of NFHS-2, 3 and 4 are found to be highly (statistically) significant. The depth and severity of multidimensional poverty are also found to be very high among these states. But, the inequality of deprivation score is found to be different. The inequality of deprivation score is low among the high MPI states. In the dimension specific study of multidimensional poverty across the states convey that the contribution of health in multidimensional poverty is found to be higher compared to other two dimensions; but

when we check the actual percentage of deprivation, we notice sanitation and cooking fuel are the indicators (of standard of living) in which maximum households are deprived. In case of identifying the determining factors of multidimensional poverty index, infrastructural development appears to be significant in reducing MPI. The physical infrastructure like road length and social infrastructure like primary health centre (PHC) play a significant role in reducing the MPI. However, the two flow variables like per capita education (PCEE) and health expenditure (PCHE) also reduce the MPI though PCHE does not appear to be significant in static panel data regression. The dynamic panel data regression clearly suggests that history does matter towards explaining multidimensional poverty. The result of dynamic panel data regression helps us to understand the dynamics of vicious cycle of poverty. Fewer states in India do really suffer from the multidimensional poverty trap, though we could not prove this. However, the extremely high value of rank correlation coefficient between MPI of states over the three rounds of NFHS clearly gives sufficient hints of poverty trap. The rank correlation coefficient between money-metric poverty and multidimensional poverty across the states over three time points (corresponding to NFHS-2, 3 and 4) is found to be positive and statistically significant but the relationship is not perfect. Generally, we can conclude that if a state exhibiting higher incidence of money-metric poverty experiences higher incidence of multidimensional poverty. The decomposition of inequality of deprivation score suggests that it mainly originates from within states rather than between states.

Indeed all the 24 states have experienced a decline of MPI but the major concern emerges due to poor performance of some major states like Bihar, Jharkhand, Chhattishgarh, MP, UP and Orissa. The incidence of multidimensional poverty is not only high in all these states rather the depth as well as severity of poverty is also high. Therefore, our conjecture of the existence of low level human development trap is, to some extent, valid because of the prevalence of higher values of depth and severity of multidimensional deprivation score among these states. It is interesting to note that all these states are spatially integrated. Therefore, development practitioner should keep this in mind of spatial dependence of multidimensional poverty while implementing any development programme.

Inadequate spending on health and education along with poor infrastructural availability aggravates the MPI; under federal structure the central government should have to take initiative to reduce mass human deprivation found in some major states like Bihar,

Jharkhand, Chattishgarh, MP, UP, Orissa and Assam. Therefore, our success of attaining inclusive growth largely depends on the poverty reduction of poorer states since all these states contribute roughly about 50 percent of India's population.

In Chapter-3, I have considered 617 districts from 29 states, among them 285 districts lie above the national average of MPI (viz. 20.38). It is surprising to note that 97.4%, 88% and 87% districts of Bihar, M.P and Jharkhand respectively lie above the national average MPI. This is important for policy intervention- both the central and state government can take initiative considering district as unit of analysis. This is because the health sector in India is the state's subject but education belongs to the concurrent list. This chapter tries to address the issue of allocation of central fund across the districts. The district level HCR along with the proportion of SC, ST and OBC Communities help us to allocate development grant fund with a view to ensure equity, social justice and inclusive growth. The 4th Chapter complements my 3rd Chapter. Why should we consider the backward community while allocating development grant? The incidence, depth and severity of multidimensional poverty are disproportionately concentrated among the SC, ST and OBC communities in India. This is why I have included the share of backward community as criteria of receiving development grant.

In Chapter-4, I have studied the multidimensional poverty among different social groups. Historically, the backward community is found to be economically poor. This is found to be true for multidimensional poverty also. All the socio-ethnic groups have experienced a decline of multidimensional poverty over a decade (from NFHS-3 to NFHS-4) but the pace of decline does vary widely across the social groups. The multidimensional HCR is found to be the maximum among the SC followed by the ST but the depth and severity of poverty is found to be the maximum among the ST community. The minimum depth and severity of deprivation score is noticed among the general category, this is quite expected.

I find that the socio-ethnic groups are not found to be poor in the same dimensions as well as same indicators of deprivation; however, the analysis of multidimensional poverty contribution unambiguously supports that health contributes a major share of deprivation in MPI and it is invariant over socio-ethnic groups and over time (NFHS-3 and 4). The most surprising and alarming fact is that the contribution of health in MPI has been increased over time across all socio-ethnic groups though all the social groups

have experienced a decline of MPI over time! It is surprising to note that the proportion of malnourished children is high among the SC and OBC group compared to ST community in NFHS-4. The proportion of households experienced a very low mortality in NFHS-4 compared to NFHS-3. Indeed it is a welcome move in our health sector. The mortality figure do not vary across the social groups, it is found to be equal (2%) in all groups except general category. This means that uniform strategy of anti-poverty programme does not always ensure desired result; rather community specific need based programmes are much more effective. This is because the children belonging to the SC and OBC category are more vulnerable to malnutrition compared to the children belonging to the ST and General community.

It is surprising to note that the inequality of deprivation score (DS) of multidimensional poverty over the decades (NFHS-3 to NFHS-4) has increased irrespective of socio-ethnic class. Moreover, the decomposition of inequality of DS results show that within inequality of DS is found to be higher than between inequality. This means that the performance of poverty reduction vary to a large extent within each social group.

We find that the incidence, depth and severity of poverty is found to be maximum among the Muslim community followed by Hindu; it is comparatively low among the Christian and 'Other' communities. It is interesting to note that the SC and ST belong to Hindu religion; whereas OBC category belongs to both Hindu and Muslim. This disaggregated picture highlights that the multidimensional poverty is high among the OBC category (as pointed out earlier) where the case of overlapping of religion does exist. The health component plays a major role towards contribution of MPI and it is found to be true across all religious groups; however, the relative progress towards reduction of multidimensional poverty suggests that the Muslim community needs to improve.

Chapter-5 is developed with a view to understand the inter-district variations of MPI in one hand and to explore the determinants of poverty on the other hand using NFHS-4 and CAS Project data respectively. In our district level analysis, we find that 11 districts lie above the national average MPI (viz. 20.38) out of 19 districts in West Bengal; this means that 57.8% districts of **West Bengal (WB)** are poor compared to national average. I have already mentioned the underlying reasons of choosing of WB in our Theses.

The NFHS-4 district level data (of WB) show that there exists wide range of variations of DS (of MPI) across the districts; the incidence, depth and severity of multidimensional

poverty is found to be the maximum in Purulia followed by Uttar Dinajpur. It is interesting to note that the maximum proportion of ST community belongs to Purulia whereas Uttar Dinajpur is dominated by minority (viz. Muslim) community. Uniform policy of poverty reduction across the districts (of WB) is not applicable because the contributions of poverty (dimension specific as well as indicator specific) differ widely across the districts. My primary survey results show that the publicly provided infrastructure (school, PHC, road connectivity etc.) plays a significant role in reducing the MPI including the distance of market place from the residence (viz. higher the distance greater is the chance of falling into poverty). Keeping in mind the problem of endogeneity between DS (of MPI) and income, we can argue that the probability of falling into poverty decreases with the money income (of the household) and it increases if the household belongs to ST community.

Policy Implications:

Eradication of poverty (especially multidimensional poverty) has been a major challenge of our planned economic development. A moderate reduction of poverty at the national level was noticed during NFHS-3 (2005-06) to NFHS-4 (2015-16). However, regional variation of poverty has been aggravated. Experiences of different states with economic growth and poverty reduction have been so varied that it is difficult to offer any general policy prescription. The central government has been initiated dozens of anti-poverty programmes since independence; however, a major anti-poverty programme is Integrated Rural Development Programme (IRDP) which was launched in 1980 but this programme is uniformly applicable across all the districts in India.

The central government has recently adopted direct benefit transfer (DBT) scheme to bring transparency and terminate pilferage from distribution of funds. In DBT, benefit or subsidy will be directly transferred to the citizens living below poverty line. My research has some policy implications as outlined in Chapter-3 and DBT can be implemented to ensure regional equality. I have categorized the districts based on MPI and which districts need more funds that are explored in my research. Therefore, I must suggest implementing the allocation rule as outlined in my research. The state government can also implement the allocation principle to eradicate regional imbalance at the district level.