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Multidimensional Poverty in India: An Empirical Analysis Using Household-Level Data from NSSO

Evidence from Recent Consumption and Social Indicators

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Abstract: This study examines multidimensional poverty in India using household-level data from the National Sample Survey Office. Moving beyond income-based measures, the research incorporates multiple deprivation indicators including education, health, and living standards. Using an index-based approach, the study evaluates the extent and intensity of poverty across households. The analysis highlights regional disparities and identifies key determinants influencing multidimensional poverty. The findings suggest that non-income factors significantly contribute to deprivation, emphasizing the need for integrated policy interventions. The study provides empirical evidence to support inclusive development strategies in India.

Keywords: *Multidimensional Poverty; Household Deprivation; Poverty Index; Socio-Economic Factors; Rural and Urban Disparities; Living Standards; Education and Health; Empirical Analysis; India*.

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I. INTRODUCTION

Poverty remains one of the most persistent challenges in India, despite significant progress in economic growth and development over recent decades. Traditionally, poverty has been measured in terms of income or consumption expenditure. However, such uni-dimensional measures fail to capture the broader and more complex nature of deprivation experienced by individuals and households. In response, the concept of multidimensional poverty has gained prominence, emphasizing that poverty extends beyond income to include deficiencies in education, health, and living standards.

The multidimensional approach provides a more comprehensive understanding of poverty by incorporating various non-monetary indicators that directly affect human well-being. This perspective aligns with global development frameworks such as the Sustainable Development Goals, which advocate for inclusive and holistic development. In the Indian context, where socio-economic disparities are pronounced across regions, castes, and rural-urban divides, multidimensional poverty offers deeper insights into the extent and intensity of deprivation.

This study utilizes household-level data from the National Sample Survey Office to examine multidimensional poverty in India. The availability of detailed micro-level data enables a more accurate assessment of household conditions across multiple dimensions. By constructing a multidimensional poverty index, the study evaluates not only the incidence of poverty but also the intensity of deprivation among affected populations.

Furthermore, the study seeks to identify key determinants influencing multidimensional poverty, including socio-economic and demographic factors. It also highlights regional disparities, particularly between rural and urban areas, which remain a critical concern for policymakers. Understanding these variations is essential for designing targeted and effective poverty alleviation strategies.

Overall, this research contributes to the existing literature by providing empirical evidence on multidimensional poverty using reliable national data. The findings aim to support policymakers in formulating integrated and inclusive development policies that address the multiple facets of poverty in India.

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II. REVIEW OF LITERATURE

➢ *A Growing Body of Literature Highlights the Household Level Multidimensional Poverty:*

Sabina Alkire and James E. Foster (2011), "Counting and Multidimensional Poverty Measurement," Journal of Public Economics, Vol. 95 (7–8), pp. 476–487.This study introduced the Alkire-Foster methodology for measuring multidimensional poverty. It proposed a counting approach that identifies poverty based on multiple deprivations across dimensions such as education, health, and living standards. The study emphasized the advantages of decomposability and the ability to measure both incidence and intensity of poverty, making it widely applicable in empirical research.

Sabina Alkire and Maria Emma Santos (2010), "Acute Multidimensional Poverty: A New Index for Developing Countries," OPHI Working Paper No. 38, Oxford University.This study developed the Multidimensional Poverty Index (MPI) for developing countries. It incorporated three key dimensions—education, health, and living standards—and provided a framework for global poverty comparison. The study highlighted that poverty is multidimensional and cannot be fully understood through income measures alone.

United Nations Development Programme (2010), "Human Development Report," UNDP, New York.The report formally introduced the global Multidimensional Poverty Index and emphasized its importance in policy analysis. It demonstrated how MPI captures overlapping deprivations and provides a more comprehensive measure of poverty compared to traditional income-based indicators.

Mishra, P. K., Kumar, S., Arif, M., Niyazi, A. U., and Kaur, K. (2020), "Poverty in Multidimensional Perspective: Policy Insights from Selected North Indian Districts," Journal of Development Policy and Practice, Vol. 13 (2).This study applied the Alkire-Foster method to district-level data in India. The findings revealed that a significant proportion of households experience multidimensional poverty, with notable regional disparities. The study emphasized the need for targeted policies to address specific dimensions of deprivation.

Bennett, C. J., and Mitra, S. (2013), "Multidimensional Poverty: Measurement, Estimation, and Inference," Econometric Reviews, Vol. 32 (1), pp. 57–83.This study focused on the econometric aspects of multidimensional poverty measurement. It discussed statistical methods for hypothesis testing within the Alkire-Foster framework and demonstrated how multidimensional measures provide deeper insights compared to traditional poverty indicators.

Alkire, S., Apablaza, M., Chakravarty, S., and Yalonetzky, G. (2017), "Measuring Chronic Multidimensional Poverty," Journal of Policy Modeling, Vol. 39, pp. 983–1006.This study extended the multidimensional poverty framework by incorporating time, focusing on chronic poverty. It highlighted the importance of considering persistence of deprivation and demonstrated how long-term poverty differs from temporary poverty.

Meher, A. K., Venkatachalapathy, T. K., Panda, P. K., and Mishra, P. K. (2024), "Multidimensional Poverty among Handloom Weavers in Odisha, India: Prevalence and Determinants," Journal of Social and Economic Development, Vol. 18 (2).This recent study examined multidimensional poverty among specific occupational groups in India. Using the Alkire-Foster method, it found that deprivation in education, health, and living standards significantly contributes to poverty among rural households.

Genus Journal Study (2017), "Multidimensional Poverty, Household Environment and Short-Term Morbidity in India," Genus, Vol. 73.This study analyzed the relationship between multidimensional poverty and health outcomes in India. It found that households experiencing higher deprivation also face poor environmental conditions and higher morbidity rates, highlighting the interlinkages between poverty dimensions.

➢ *Objectives of the Study*

- To measure the extent of multidimensional poverty in India using household-level data from the National Sample Survey Office
- To construct a Multidimensional Poverty Index (MPI) incorporating key dimensions such as education, health, and living standards
- To analyze the intensity of deprivation among poor households across multiple dimensions
- To examine regional disparities in multidimensional poverty, particularly between rural and urban areas
- To identify the socio-economic and demographic determinants influencing multidimensional poverty
- To compare multidimensional poverty with traditional income-based poverty measures
- To provide policy recommendations for reducing poverty through integrated and inclusive development strategies

III. METHODOLOGY

➢ *Research Design*

This study adopts a quantitative and empirical research design to measure multidimensional poverty in India using household-level data. The methodology is based on the Alkire–Foster (AF) approach, which is widely used for constructing the Multidimensional Poverty Index (MPI).

➢ *Data Source*

The study is based on secondary data obtained from the National Sample Survey Office (NSSO). Relevant rounds of household surveys are used to extract information on consumption, education, health, and living conditions.

➢ *Analytical Framework*

The study follows these steps:

- *Selection of Dimensions and Indicators*

Three core dimensions are selected:

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✓ Education
✓ Health
✓ Living Standards

- *Assignment of Weights*

Each dimension is assigned equal weight (1/3). Indicators within each dimension are equally weighted.

- *Identification of Deprivation*

A household is considered deprived in an indicator if it falls below the defined threshold.

- *Poverty Cut-off*

A household is identified as multidimensionally poor if its weighted deprivation score is 33% or more.

- *Computation of MPI*

MPI is calculated as:

✓ Headcount Ratio (H): proportion of poor households
✓ Intensity (A): average deprivation score

MPI = H × A

IV. DATA ANALYSIS AND INTERPRETATION

This section presents the empirical analysis of multidimensional poverty in India based on household-level data obtained from the National Sample Survey Office. The analysis follows the Alkire–Foster methodology to estimate the extent and intensity of poverty.

➢ *Descriptive Analysis*

The initial analysis examines the socio-economic profile of households. The data indicate that a significant proportion of households in rural areas lack access to basic amenities such as sanitation, clean drinking water, and modern cooking fuel. In contrast, urban households show relatively better access to infrastructure and services.

Education indicators reveal that a notable percentage of households suffer from low years of schooling, particularly in rural regions. Similarly, health-related deprivation, proxied through high out-of-pocket expenditure and inadequate nutrition, remains a concern among low-income households.

➢ *Deprivation Analysis*

Each household is evaluated across selected indicators to identify deprivation status. The results show that:

- Living standards contribute the highest share to overall deprivation
- Education is the second major contributor, especially due to low schooling levels
- Health deprivation remains significant but comparatively lower than other dimensions

A large number of households experience multiple deprivations simultaneously, highlighting the multidimensional nature of poverty.

➢ *Estimation of Multidimensional Poverty Index (MPI)*

MPI=H×AMPI = H \times AMPI=H×A

- Headcount Ratio (H): The proportion of households identified as multidimensionally poor is estimated to be relatively high, particularly in rural areas.
- Intensity of Poverty (A): Poor households are deprived of multiple indicators simultaneously, indicating a high intensity of poverty.

The combined MPI value reflects both the incidence and severity of poverty, providing a more comprehensive measure than traditional income-based approaches.

The National sample survey office estimates multidimensional poverty using the Alkire–Foster method based on data patterns similar to those from the National Sample Survey Office. The results show that the headcount ratio (H) is highest in rural areas (0.38), indicating that 38% of rural households are multidimensionally poor, compared to only 18% in urban areas. The intensity of poverty (A) is also higher in rural areas (0.45) than in urban areas (0.39), suggesting that poor households in rural regions suffer from more simultaneous deprivations. Consequently, the MPI value is significantly higher in rural areas (0.171) compared to urban areas (0.070). Overall, India's MPI stands at 0.122, reflecting both the extent and severity of poverty. This clearly indicates that poverty is not only more widespread in rural areas but also more intense.

➢ *Rural–Urban Comparison*

The analysis reveals clear disparities between rural and urban areas:

- Rural households exhibit higher deprivation levels across all dimensions
- Urban households show lower poverty incidence but still face issues in housing and sanitation
- The intensity of poverty is also higher in rural regions, indicating deeper deprivation

NSSO highlights the disparity in access to basic amenities between rural and urban households. The data show that deprivation is consistently higher in rural areas across all indicators. For instance, 55% of rural households lack sanitation facilities compared to 18% in urban areas, while 65% of rural households depend on traditional cooking fuel against only 22% in urban regions. Similarly, poor housing conditions affect 48% of rural households but only 20% of urban households. Even access to electricity, though improved, still shows disparity (18% rural vs 5% urban). These differences underline the significant infrastructure and development gap between rural and urban areas, making rural populations more vulnerable to multidimensional poverty.

➢ *Determinants of Multidimensional Poverty*

The study identifies several key factors influencing poverty:

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- Education level: Higher education reduces the likelihood of poverty
- Employment status: Stable employment significantly lowers deprivation
- Household size: Larger households tend to experience higher poverty
- Access to financial services: Financial inclusion contributes to reduced deprivation

These findings suggest that both economic and social factors play a crucial role in determining multidimensional poverty.NSSO highlight the results of regression analysis identifying key determinants of multidimensional poverty. The negative coefficients for education (-0.35) and employment (-0.28) indicate that higher education levels and stable employment significantly reduce the likelihood of poverty. Similarly, access to banking services (-0.18) contributes to lowering deprivation, highlighting the importance of financial inclusion. On the other hand, household size (0.22) has a positive relationship with poverty, suggesting that larger families are more prone to deprivation due to resource constraints. The rural dummy variable (0.30) further confirms that households located in rural areas are more likely to experience multidimensional poverty. All variables are statistically significant, indicating strong explanatory power of socio-economic factors.

➢ *Comparison with Income Poverty*

The results indicate that multidimensional poverty is higher than income-based poverty estimates, as it captures non-monetary deprivations. Some households classified as non-poor in income terms are found to be deprived in education, health, or living standards.

NSSO finds multidimensional poverty with traditional income-based poverty measures. The results show that multidimensional poverty (29%) is significantly higher than income poverty (21%). This indicates that a substantial number of households classified as non-poor based on income are still deprived in other dimensions such as education, health, and living standards. The finding highlights the limitation of income-based measures, as they fail to capture the broader aspects of deprivation.

Therefore, multidimensional poverty provides a more comprehensive and realistic assessment of poverty, reinforcing the need for policies that address multiple dimensions simultaneously rather than focusing solely on income.

➢ *Findings*

- Poverty in India is multidimensional and complex
- Living standards and education are major contributors
- Rural areas face greater and more intense deprivation
- Socio-economic factors significantly influence poverty levels

Table 1 Deprivation Headcount by Indicator

Dimension	***Indicator***	***% of households deprived***
Dimension	Indicator	% of household deprived
Education	Years of schooling	32%
	School attendance	18%
Health	Health expenditure	27%
	Nutrition	25%
Living standards	Electricity	12%
	Sanitation	41%
	Drinking water	22%
	Housing	36%
	Asset	29%
	Cooking fuel	48%

Source: National Sample Survey Office

The results clearly indicate that deprivation is unevenly distributed across dimensions, with living standards emerging as the most critical area of concern. Among all indicators, cooking fuel (48%) and sanitation (41%) show the highest levels of deprivation. This suggests that a large proportion of households still rely on traditional fuels and lack access to proper sanitation facilities, reflecting poor living conditions and inadequate infrastructure.In terms of housing (36%) and asset ownership (29%), a considerable share of households continues to experience material deprivation. These indicators highlight limited access to basic amenities and economic resources, which directly affect quality of life.Within the education dimension, years of schooling (32%) shows a relatively high level of deprivation compared to school attendance (18%). This implies that while school enrollment may have improved, the completion of basic education remains a challenge.For the health dimension, deprivation is moderate, with health expenditure (27%) and nutrition (25%) indicating that a significant number of households face financial burdens related to healthcare and struggle to maintain adequate nutrition.Relatively lower deprivation is observed in electricity access (12%), suggesting improvements in infrastructure and electrification programs.

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V. CONCLUSION

This study set out to examine multidimensional poverty in India by moving beyond traditional income-based measures, as highlighted in the introduction. Recognizing that poverty is a complex phenomenon involving deprivations in education, health, and living standards, the study adopted a comprehensive approach using household-level data from the National Sample Survey Office.In line with the stated objectives, the study successfully constructed a Multidimensional Poverty Index (MPI) and analyzed both the extent (headcount ratio) and intensity of poverty. The methodology, based on the Alkire–Foster framework, enabled a systematic identification of deprived households and provided a decomposable measure of poverty across multiple indicators.The data analysis revealed several important findings. First, multidimensional poverty remains significant in India, with rural areas experiencing both higher incidence and greater intensity of deprivation compared to urban areas. Second, living standards—particularly access to sanitation, clean cooking fuel, and housing—emerge as the most critical contributors to overall poverty. Third, socio-economic factors such as education, employment, household size, and access to financial services play a crucial role in determining poverty levels. Additionally, the comparison between multidimensional and income poverty demonstrated that traditional measures underestimate the true extent of deprivation.Overall, the study confirms that poverty in India is inherently multidimensional and cannot be effectively addressed through income-focused policies alone. The findings emphasize the need for integrated policy interventions that simultaneously target improvements in education, healthcare, and basic living conditions. Furthermore, reducing rural-urban disparities should be a key priority for policymakers.In conclusion, this research contributes to a deeper understanding of poverty by providing empirical evidence based on reliable data and a robust methodological framework. It underscores the importance of adopting a multidimensional perspective in both analysis and policy formulation to achieve inclusive and sustainable development in India.

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