

## MULTIDIMENSIONAL POVERTY AND CHILD HEALTH IN UZBEKISTAN: EVIDENCE FROM MICS 2021–2022

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**Annotation.** *This paper examines how multidimensional poverty affects child health outcomes in Uzbekistan using MICS 2021–2022 data. The Alkire–Foster methodology is used to construct a multidimensional poverty index (MPI) across education, health, and living standards. Two thresholds (20% and 33%) are applied to distinguish moderate and severe deprivation. Econometric models including OLS, Logit, and Probit are used. The results show that moderate poverty significantly reduces vaccination probability, while severe poverty is associated with higher risk of wasting. The findings suggest that poverty affects child outcomes through different mechanisms depending on its intensity, providing important policy implications.*

**Key words:** *multidimensional poverty, child health, MICS, poverty thresholds, econometric analysis.*

### INTRODUCTION

Child health is a critical component of human capital and long-term development. While Uzbekistan has achieved substantial reductions in income poverty, non-monetary deprivations remain important, especially for children. Income-based measures alone do not fully capture inequalities in access to healthcare, nutrition, and living conditions.

Multidimensional poverty provides a more comprehensive approach by incorporating several aspects of deprivation. Children under five are particularly vulnerable, as early-life conditions affect lifelong outcomes. Despite this importance, there is limited empirical research using microdata to analyze how multidimensional poverty affects child health in Uzbekistan.

This study aims to fill this gap by linking MPI with multiple child health indicators using econometric methods.

### LITERATURE REVIEW

The concept of multidimensional poverty has been widely developed following Alkire and Foster (2011), who proposed a method to measure overlapping deprivations. Empirical studies show that child health outcomes are influenced by multiple factors such as parental education, income, and access to services.

However, much of the literature focuses on single indicators such as stunting or mortality. Studies using DHS and MICS data highlight the importance of healthcare access and nutrition, but often rely on descriptive analysis. In the context of Uzbekistan, research remains limited and lacks econometric modeling of multidimensional poverty effects.

This paper contributes by combining MPI measurement with regression analysis of several child health outcomes.

## **METHODOLOGY**

The multidimensional poverty index is constructed using the Alkire–Foster method. Three dimensions are included: education, health, and living standards, each equally weighted. Indicators within each dimension are also weighted to ensure the total equals one.

A deprivation score is calculated for each household by summing weighted indicators. Two thresholds are used:

- 20% to identify moderate deprivation;
- 33% to identify severe deprivation, consistent with global MPI standards.

The econometric analysis uses:

- OLS for continuous outcomes (HAZ, WAZ, WHZ);
- Logit and Probit models for binary outcomes (vaccination, wasting, stunting).

The model specification is:

$$Y_i = \beta_0 + \beta_1 \text{MPI}_i + \varepsilon_i$$

where Y represents child health outcomes.

## **DATA**

The study uses data from the Multiple Indicator Cluster Survey (MICS) 2021–2022 conducted by UNICEF. The dataset is nationally representative and includes detailed information on household conditions and child health.

The sample consists of children under five years old, with approximately 4,600–5,400 observations. The survey includes both urban and rural areas, allowing analysis of regional differences.

## **Results**

The results show that at the 20% threshold, multidimensional poverty significantly reduces the likelihood of vaccination. This suggests that moderate deprivation mainly affects access to healthcare services.

At the 33% threshold, the effect on vaccination becomes insignificant. Instead, poverty is associated with higher probability of wasting and lower probability of overweight. This indicates that severe poverty affects nutritional outcomes rather than healthcare access.

Anthropometric indicators such as stunting show limited significance, suggesting that some health outcomes may be influenced by additional factors beyond MPI.

## **DISCUSSION**

The findings indicate that the impact of poverty depends on its intensity. Moderate poverty primarily creates barriers to accessing services such as vaccination. In contrast,

severe poverty reflects deeper deprivation that affects nutrition and physical health.

The low explanatory power of the models suggests that MPI alone does not fully explain child health outcomes. Other factors such as maternal education, diet, and sanitation likely play an important role.

These results highlight the importance of considering both the level and nature of deprivation when analyzing child well-being.

#### Policy Recommendations

Policy interventions should differentiate between moderate and severe poverty.

For moderate poverty:

- Improve access to healthcare services;
- Expand mobile clinics and outreach programs.

For severe poverty:

- Strengthen nutrition programs;
- Provide food assistance and supplements.

Additionally:

- Improve sanitation and living conditions;
- Promote maternal education;
- Target rural and underserved areas.

Using multiple poverty thresholds can help design more effective and targeted policies.

#### CONCLUSION

This study shows that multidimensional poverty affects child health outcomes differently depending on its intensity. Moderate poverty limits access to healthcare, while severe poverty affects nutrition.

The findings emphasize the importance of multidimensional measurement and threshold-based analysis. Future research should include additional variables to better explain child health outcomes.

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