

**Evolution and Determinants of Non-monetary Indicators of Poverty in Kenya:
Children's Nutritional Status, 1998-2003**

Presented by

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Introduction

Child mortality rates and malnutrition remain high inspite of the government's commitment to create an enabling environment for the provision of quality health care and reduction of mortality and malnutrition levels.

- Under five mortality rates- above 100 per 1,000 live births
- About 30% of under five children suffer from chronic malnutrition (stunted)
- Almost 6% are severely malnourished (wasted),
- 20% are underweight.

Prevalence of malnutrition → most critical in rural and drought stricken areas and among poor households.

Nutritional deficiencies → contribute to:

- High rates of disability
- Illness and death
- Affects the long term physical growth and development of children
- May lead to high levels of chronic illness and disability in adult life.
- High rates of malnutrition jeopardize future economic growth by reducing the intellectual and physical potential of the entire population

Many factors determine the nutritional status of children:

- Child characteristics
- Household characteristics
- Community variables.

Dietary intake and health status → also important → but these are influenced by underlying determinants:

- Food security
- Community infrastructure
- Prices of related health inputs
- Available household resources
- Cultural and natural environment
- National policies and international conditions.

Efforts to reduce child mortality rates and malnutrition → also challenged by the HIV/AIDS scourge → increased number of orphaned children who are at increased risk of malnutrition.

- In this paper we investigate the evolution and determinants of children's nutritional status → 1998 -2003 using demographic and health survey (DHS) data.
- We focus on nutritional status as a non money-metric measure of poverty
- Study makes an important contribution to the growing literature on poverty in Kenya and deviates from earlier studies that concentrate on money-metric measures.

Advantages of using nutrition instead of income as a measure of poverty:

- It is a more direct measure of capability deprivation than income and expenditure
- Individual well-being in the form of nutritional status can be directly observed.
- Money-metric comparisons of welfare over time are hampered by the absence of reliable and verifiable deflators, and information collected in surveys is often inadequate to solve this problem.
- Budget surveys that differ in instrument design, recall periods and even the nature of interviewer training have large systematic differences in the accuracy of measuring household expenditures.

Hence Inter-temporal comparisons are more difficult with money-metric measures

Analytical Framework

Based on household production framework and household utility maximizing behaviour (Becker, 1965 and Strauss and Thomas; 1995).

Assumptions

- ➔ Good nutrition is desirable in its own right
- ➔ Households make consumption decisions on the basis of reasons other than nutrition (Pitt and Rozenzweig, 1995).

Household utility thus maximized subject to several constraints, including a time-nutritional production function and income constraints.

Guided by the underlying framework the reduced form nutritional functions are specified as:

- *Height for age* (h_{azi}) = f(child characteristics, household characteristics, community characteristics, ε_{ha})
- *Weight for age* (w_{azi}) = f(child characteristics, household characteristics, community characteristics, ε_{wa})

→ Where i denotes the i th group (year, region or gender)

→ ε_{ha} and ε_{wa} are random error terms assumed to be uncorrelated with the covariates influencing h_{az} and w_{az} .

Explanatory Variables

- Child characteristics → age and gender of the child.
- Household level characteristics → parental characteristics, structure of the household, and household assets.
- Community characteristics → access to public facilities such as immunization and health care.

Environmental factors (water and sanitation) dropped in the final analysis because they turn out to be insignificant

Decomposition of the expected value of differentials in nutritional status of children between the two years → follow Oaxaca (1973) and also Oaxaca and Ransom (1999).

We decompose the expected value of haz and waz into several components:

- the returns to characteristics (equivalent to Oaxaca discrimination component),
- the component due to
 - kids characteristics
 - household characteristics
 - All other factors.

Layout of the Study

- Detailed descriptive analysis
- Individual regressions for the two years
- Pooled regressions for the two years
- Oaxaca decomposition of the changes in children's nutritional status from 1998-2003

The Data

- 1998 and 2003 Demographic and Health Surveys (DHS)
- The DHS → nationally representative samples of women aged 15 to 49.
- The two surveys → relatively comparable but differ in a number of ways:

1998 DHS	2003 DHS
7,881 women	8,195 women
6,185 children	6,102 children
8,380 households	8,195 households

Detailed descriptive analysis shows that

- The datasets are robust across all variables → allowing for comparative analysis across the two periods.
- Though the distribution of mean ‘Z’ scores across regions is not consistent in the two years, there is evidence of regional disparities in child nutritional status.
- Boys - more likely to suffer all forms malnutrition than girls
- Children from female headed households are likely to be more malnourished than children from male headed households.
- Rural children are likely to suffer more malnutrition than urban children.
- Maternal education is positively correlated to child nutritional status.

Empirical Results- Key Findings

- Child characteristics → important determinants of nutritional status
- Male children → more likely to be malnourished than female children.
- Household composition and mother's age does not seem to matter.
- Mother's height → U shaped relationship with malnutrition.
- Maternal education → important, but paternal education does not seem to matter.

Empirical results (continued)

- Nutrition improves at a decreasing rate with assets
- Assets seem to have been more important for nutritional status in 1998 than in 2003.
- Community variables → only delivery in a modern facility is individually significant in explaining malnutrition.
- Pooled model allows us to estimate the impact of access to modern contraception methods → significant determinant.

Oaxaca decomposition results

- Modest changes in the expected value of the difference in chronic and acute malnutrition indicators from 1998 to 2003.
- Boys suffered more malnutrition in 2003 than in 1998
- Girls' nutritional status improved.
- Returns to characteristics imply that policy may have impacted negatively on nutritional status in 2003, more so for boys.
- Chronic malnutrition → Changed returns to characteristics more important for boys than for girls, → the reverse for acute malnutrition.
- Policy → Increased government efforts to reduce chronic and acute malnutrition among boys and girls respectively.

Further research need to consider in nutritional functions:

- Dietary intakes
- Health status
- Prices of related health inputs
- Incomes
- Time allocation
- Household public resources
- National policies

This can only be done if the survey instruments cater for these variables to provide for the additional data needs