

An Empirical Assessment on Appropriateness of Alternative Poverty Measurements Based on Inclusion and Exclusion Error Estimates

Introduction: The poverty rate in Sri Lanka, calculated as the percentage of the population living below a monetary poverty threshold covering essential livelihood needs, stood at 26.1% in 1990. By 2019, it had significantly decreased to 3.2% (DCS, 2019). However, the onset of the COVID-19 pandemic and the subsequent economic crisis in Sri Lanka around 2022 reversed these gains in poverty reduction. According to the World Bank, poverty, defined by the \$3.65 per day poverty line, surged from the pre-pandemic rate of 11.3% to 25.6% in 2022 (World Bank, 2022). In the aftermath of the economic crisis, a nationwide survey of 10,000 households (HHs), covering the entire country, estimated the post-crisis poverty rate at 31% based on the national poverty line in 2022 (LIRNEasia, 2023).

In response to the increased poverty rates, the Sri Lankan government introduced a new welfare benefit cash transfer program called *Aswesuma*. One key difference between the new program (*Aswesuma*) and the old program (*Samurdhi*) was the change in the measure used to identify deserving HHs for cash transfer support. While the old program primarily relied on self-declared HH income as the indicator, the new program employed a Multidimensional Poverty Indicator (MPI) to identify impoverished HHs. The MPI calculates a composite index, based on factors related to poverty, such as education, health, and the standard of living of HHs. The MPI used by the Government of Sri Lanka for the *Aswesuma* welfare benefit program included 6 dimensions and 22 indicators (Welfare Benefits Act, 2023). The Department of Census and Statistics also has estimated an MPI with 3 dimensions and 10 indicators (SCS, 2019).

The adoption of the MPI for identifying beneficiaries in the implementation of the *Aswesuma* program sparked social and political controversy, primarily due to significant exclusions of individuals deemed poor. Public criticism was that the criteria, included in the *Aswesuma* MPI, were susceptible to manipulation and falsification. The house-to-house data collection process, although facilitated through electronic means, was flawed in data entry due to the inexperience of enumerators. A study investigating the relationship between monetary poverty and eligibility criteria for multidimensional (using the MPI) social assistance in Sri Lanka, found a weak to moderate correlation between the two measures (Hurulle et al., 2023). This lack of coherence between monetary poverty indicator and MPI may have led to misidentification of the poor.

The inadequate identification of poor HHs by monetary poverty and MPI, led to a growing interest in exploring alternative poverty measurement proxies that are quick, easy, cost-effective to measure, objective, verifiable, and transparent. Additionally, these measures should be adaptable to rapidly changing economic scenarios, such as those experienced during an economic crisis. Gunewardena and Siyambalapitiya (2023) have assessed the suitability of HH electricity costs as a proxy for measuring poverty in Sri Lanka and have recommended it as an appropriate measure.

Objective of the study: An empirical assessment was done to estimate the inclusion and exclusion errors of adopting:

- i. MPI estimated by Department of Census and Statistics (2019) and
- ii. HH monthly electricity consumption

in measuring and identifying poor compared to the benchmark of monetary poverty measure (HH monthly consumption expenditure).

Inclusion error refers to the erroneous inclusion of monetarily well-off HHs when using MPI or HH electricity consumption to identify poverty. Exclusion error, on the other hand, refers to the exclusion of financially disadvantaged HHs when using MPI or HH electricity consumption to identify poverty. Both errors need to be minimized for any valid measure of poverty. Inclusion errors will lead to leakage of

public finances allocated for poverty alleviation by supporting non-poor. Exclusion errors will lead to underachievement of welfare benefits through poverty alleviation programs and also to social frustration.

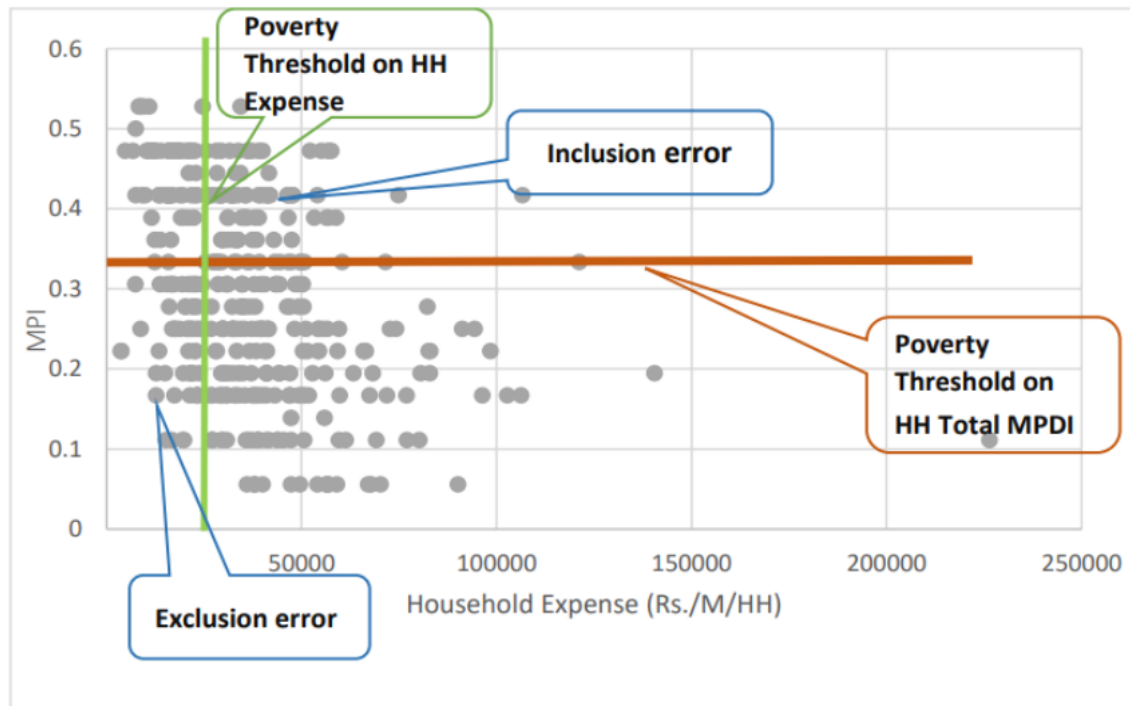
Given below are the estimates of inclusion and exclusion errors estimated for a sample (n=379) of HHs from the Kilinochchi district (DCS, 2019). This district is amongst the poorest districts and shows sufficient variation in poverty to non-poverty enabling robust estimates of inclusion and exclusion errors.

Estimated Inclusion and Exclusion Errors: Monetary Poverty vs. Multidimensional Poverty Index (MPI)

Monetary poverty threshold is HH Expense < Rs. 24,381 Rs/Month/HH (DCS, 2019): **Benchmark**

MPI poverty threshold is HH MPI >0.333 (DCS, 2019)

| Inclusion Error (Non-poor HH included in MPI measurement) | Exclusion Error (Poor HH excluded in MPI measurement) |
|--|--|
| 72 (19%) | 54 (15%) |
| Poor HH identified according to Poverty Threshold on HH Expense | Poor HH identified according to Poverty Threshold on HH MDPI |
| 108 (28%) | 126 (34%) |

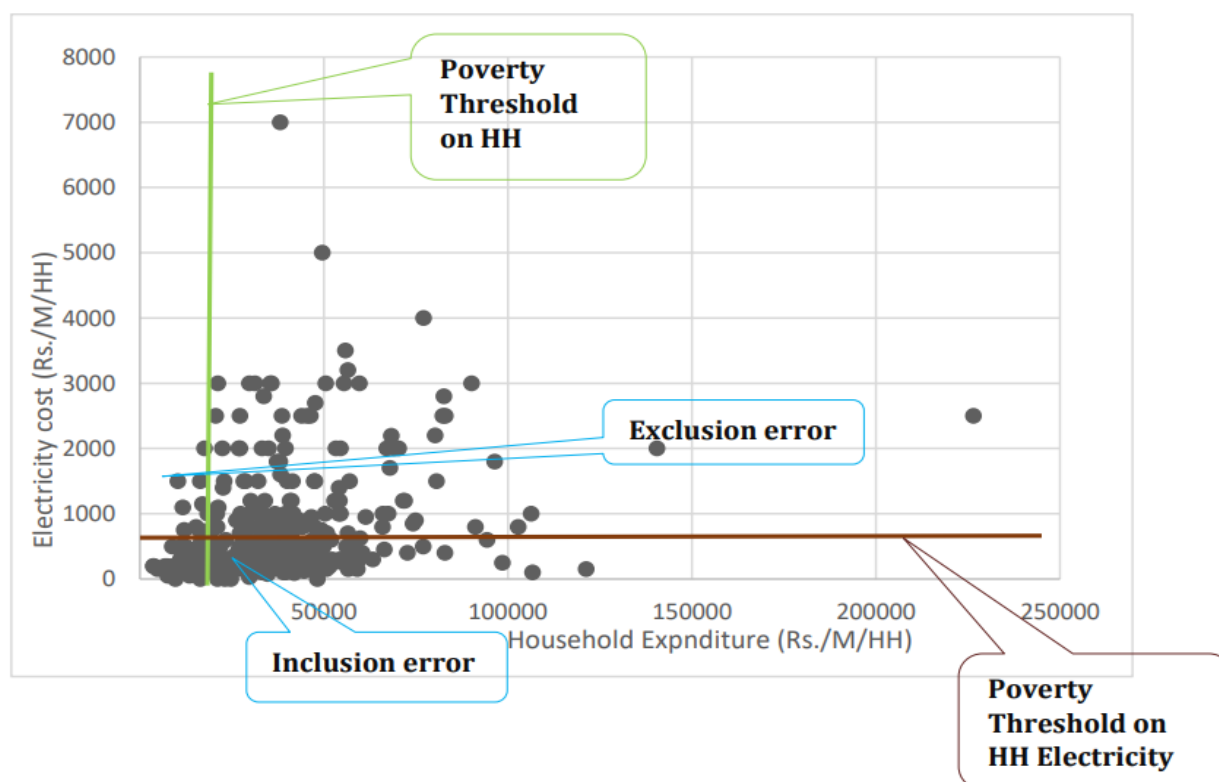


Estimated Inclusion and Exclusion Errors: Monetary Poverty vs. Household Electricity Cost

Monetary poverty threshold is HH Expense < Rs. 24,381 Rs/Month/HH (DCS, 2019): **Benchmark**

Poverty Threshold on HH Electricity Cost < Rs.581 Rs/Month/HH or 62 kWh/Month/HH

| Inclusion Error (Non-poor included in household electricity cost measurement) | Exclusion Error (Poor excluded in household electricity cost measurement) |
|--|--|
| 137 (36%) | 22 (6%) |
| Poor identified according to Poverty Threshold on HH Expense | Poor identified according to Poverty Threshold on Household Electricity Cost |
| 108 (29%) | 223 (59%) |



Conclusion: It is evident that with both non-monetary measures more poor HH are identified as compared to the monetary measure of poverty, with high inclusion errors. The exclusion errors are relatively smaller. The high inclusion errors would lead to waste of public resources allocated for poverty

alleviation programs. It could lead to social despair where non-poor are supported through public resources through poverty alleviation programs. The poor identified through MPI indicators may be poor in certain dimensions, which could be addressed through very specific interventions targeting the deficient dimensions.

Overall it is our contention, based on above analysis, that identifying poor by the conventionally known and used monetary measure would be more valid and socially accepted, than alternative measures. Well-designed data collection tools and survey methods could reduce alleged (not sufficiently substantiated with empirical analysis) measurement errors in measuring HH expenses or income. Improvement could be done on measuring HH expenses by statistically estimating the measurement errors and through appropriate adjustments too (Pritchett, et al., 2000)

By Jayani Kokila, Nulakshi Dissanayake, Varangana Ratwatte and Hemesiri Kotagama (Social Protection and Basic Services Thematic)

Disclaimer: *The views expressed in this article are those of the author and do not necessarily reflect the views and policies of CEPA.*

References

DCS. (2019). *Household Income and Expenditure Survey*. Colombo, Sri Lanka: Department of Census and Statistics, Ministry of Economic Policies and Plan Implementation.

Gunewardena, D., and Siyambalapitiya, S. (2023). Electricity Usage as a Proxy for Poverty Targeting. *Sri Lanka Journal of Economic Research*, 10(2).

Hurulle, G. H., Amarasinghe, T., Habaragamuwa, N., and Galpaya, H. (2023). *Relationship between monetary poverty and multidimensional social assistance eligibility criteria in Sri Lanka*.

<https://lirneasia.net/wp-content/uploads/2023/08/Academic-Paper-Relationship-between-monetary-poverty-and-multidimensional-social-assistance-eligibility-criteria-in-Sri-Lanka.pdf>

LIRNEasia. (2023). Social Safety Nets and the State of Poverty in Sri Lanka.

<https://lirneasia.net/wp-content/uploads/2023/07/LIRNEasia-Social-Safety-Nets-and-the-State-of-Poverty-in-Sri-Lanka-4.pdf>.

Narayan, A., and Yoshida, N. (2005). *Proxy Means Test for Targeting Welfare Benefits in Sri Lanka*. World Bank Working Paper South Asia PREM Series (Report No. 33258).

Pritchett, L., A. Suryahadi, S. Sumarto (2000) Quantifying Vulnerability to Poverty: A Proposed Measure, Applied to Indonesia, Policy Research Working Paper, The World Bank.

World Bank. (2022). *Sri Lanka Development Update: Protecting the Poor and Vulnerable in a time of Crisis*. World Bank.