EMPIRICAL ASSESSMENT ON HOUSEHOLD ELECTRICITY EXPENDITURE AS A PROXY FOR POVERTY MEASUREMENT IN SRI LANKA

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Sri Lanka's social safety-net mechanism changed due to the economic crisis that struck in 2022. The change shifted poverty measurement to identify poor households (HH) from a monetary measure to a measure based on multiple dimensions, including health, education, and living standards. The multi-dimension poverty measure led to misidentification of the poor and social upheaval. This study explores HH electricity consumption as an alternative poverty assessment measure that is easy, cheap, verifiable, and objective. Using data from the 2019 HH Income and Expenditure Survey (HIES) in the Kilinochchi district (N =379), a scatter plot analysis was initially employed to visualise the association between HH consumption expenditure (Rs/M/HH) and HH electricity expenditure (Rs/M/HH) and found a positive trend relationship. Pearson's correlation test indicated a 0.34 correlation between the above variables. A regression model was formulated, using stepwise and weighted least squares OLS analysis, to predict HH monthly electricity consumption from HH consumption expenditure. This model was used to estimate the HH Monetary Poverty Equivalent (monetary poverty line of 23481 Rs/M/HH in 2019) and electricity consumption (MPEE = 580 Rs/M/HH = 62 kWh/M/HH). Using the MPEE as the poverty threshold, poor HH were identified as 59% of the sample as compared to 28% of the sample being poor as identified using the monetary poverty line. The inclusion and exclusion errors using MPEE *vis-a-vis* consumption expenditure poverty line was estimated at 36% and 5% of the population, respectively. The exclusion error of identifying the monetarily rich as poor would lead to an inefficient allocation of resources to a social safety-net program. A Welch t-test carried out to check whether there is a difference in means between the HH consumption expenditure of those identified as poor using the monetary indicator and the electricity consumption indicator was found to have a significant difference in means. This indicated that the selection of poor by the two indicators was different. The results revealed a reasonable positive relationship between the above variables, implying that electricity consumption may be a good proxy measure of poverty. However, the substantial inclusion error and the result of the Welch t-test do not allow us to confidently conclude that HH electricity consumption is a satisfactory proxy measure of poverty. Given its exploratory nature, more comprehensive investigations are required to establish a conclusive and robust relationship between household consumption expenditure and poverty.

Keywords: Electricity cost, Measurement, Poverty, Proxy, Safety-nets