R Laboratory

Poverty indicators and mapping

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Poverty: SDG Indicators

Goal 1. End poverty in all its forms everywhere

1.1 By 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than 1.25$ a day.

Traditional (monetary) poverty approach

- The monetary approach is maybe the most widely used approach to measure and understand poverty.
- Study the economic conditions (usually represented by income or consumption) of individuals or households.

Equivalised income and poverty line

- Equivalised disposable income: in order to reflect differences in a household's size and composition, the total (net) household income is divided by the number of 'equivalent adults', using a standard (equivalence) scale. Usually we use the modified OECD scale; this scale gives a weight to all members of the household (and then adds these up to arrive at the equivalised household size):
  - 1.0 to the first adult;
  - 0.5 to the second and each subsequent person aged 14 and over;
  - 0.3 to each child aged under 14.

  the equivalised disposable income and is attributed equally to each member of the household.
- Establishing a poverty line, i.e. sets a threshold (a minimum acceptable standard of consumption or income) below which an individual or a household is considered poor.
  - absolute poverty line: single national poverty line
  - relative poverty line: regional poverty lines

Head Count Ratio

- **Head Count Ratio (HCR)**
  The HCR (also known as 'at-risk-of-poverty rate') is the share of people with an equivalised disposable income below the at-risk-of-poverty line, which is set at 60% of the national median equivalised disposable income.

$$\text{HCR} = \frac{1}{N} \sum_{i=1}^{N} I(y_i < z),$$

where y is the income; z is the poverty line; and $I(.)$ is an indicator function that is 1 if its argument is true, 0 otherwise (it is equal 1 when the income of the ith individual below the poverty line)

$$\text{HCR} = \frac{\sum_{i \in I(y_i < z)} w_i}{\sum_{i=1}^{n} w_i},$$

Poverty Gap

- **Poverty Gap (PG)**
  The PG (also known as 'relative median at-risk-of-poverty gap') is calculated as the distance between the median equivalised total income of persons below the at-risk-of-poverty threshold and the at-risk-of-poverty threshold itself, expressed as a percentage of the at-risk-of-poverty threshold.

$$\mathrm{PG} = \frac{P.L. - \hat{q}_{0.5}(y_i, w_i)_{i \in I(y_i < z)}}{P.L.},$$

  It measures the extent to which individuals fall below the poverty line (the poverty gaps) as a proportion of the poverty line (in other words it measures the poverty intensity, since it takes into account the distance from the P.L.)