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Institute for Statistics

## **SDG 4 Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all**

### **METADATA**

**Target 4.5 By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations**

**4.5.1 Parity indices (female/male, rural/urban, bottom/top wealth quintiles and others such as disability status, indigenous peoples and conflict-affected, as data become available) for all education indicators on this list that can be disaggregated**

#### **Definition**

Parity indices require data for the specific groups of interest. They represent the ratio of the indicator value for one group to that of the other. Typically, the likely more disadvantaged group is the numerator. A value of exactly 1 indicates parity between the two groups.

#### **Purpose**

To measure the general level of disparity between two sub-populations of interest with regard to a given indicator.

#### **Calculation method**

The indicator value of the likely more disadvantaged group is divided by the indicator value of the other sub-population of interest.

$$DPI = \frac{[Ind_i]_d}{[Ind_i]_a}$$

where:

*DPI* = the Dimension (sex, wealth, location, etc.) Parity Index.

*Ind<sub>i</sub>* = the indicator *i* for which an equity measure is needed.

*d* = the likely disadvantaged group (e.g. female, poorest, rural, etc.).

*a* = the likely advantaged group (e.g. male, richest, urban, etc.).

#### **Interpretation**

The further from 1 the parity index lies, the greater the disparity between the two groups of interest. For indicators that should ideally increase in values (e.g. gross enrolment ratios, completion rates, participation rates, etc), a parity index value less than 1 indicates disparity

in favour of the advantaged group and a value higher than 1 indicates disparity in favour of the disadvantaged group. The interpretation of the parity index is the other way around for indicators that should ideally approach 0%, like out-of-school rates.

### **Type of data source**

Various depending on underlying indicator.

### **Disaggregation**

None because the parity indices directly compare two sub-populations of interest.

### **Data required**

The indicator values for the sub-populations of interest.

### **Data sources**

The sources are the same as for the underlying indicators for this goal.

### **Quality assurance**

Quality assurance may vary according to the indicator for which the parity index is calculated, especially the data production process underlying the calculation of the indicator. In general, standards are set or are under development to harmonise data collection and international reporting and to ensure comparability of resulting indicators across country. Agencies responsible for maintaining the data used to produce the indicators implement these standards or protocols for quality proofing of national data and for documentation of data and related metadata to inform the use and interpretation of the resulting indicators.

### **Limitations and comments**

The parity index does not indicate whether improvement or regression is due to the performance of one of the groups.

The default calculation method for the parity index yields an indicator that is not symmetrical around 1 and that has no upper limit. This limitation can be overcome with a simple transformation, by inverting ratios that exceed 1 and subtracting them from 2. This adjusted parity index is symmetrical around 1 and lies in the range 0-2, which makes interpretation easier. The adjusted parity index is calculated as follows:

$$DPIA = \begin{cases} \frac{[Ind]_d}{[Ind]_a} & \text{if value for usually disadvantaged group} \leq \text{value for usually advantaged group} \\ 2 - \frac{1}{\frac{[Ind]_d}{[Ind]_a}} & \text{if value for usually disadvantaged group} > \text{value for usually advantaged group} \end{cases}$$

where:

*DPIA* = the Dimension (sex, wealth, location, etc.) Parity Index, adjusted.

*Ind<sub>i, d</sub>*, *d*, and *a* are defined as for the unadjusted parity index.

Starting in September 2020, all parity indices disseminated by the UIS are calculated with the formula for adjusted parity indices.