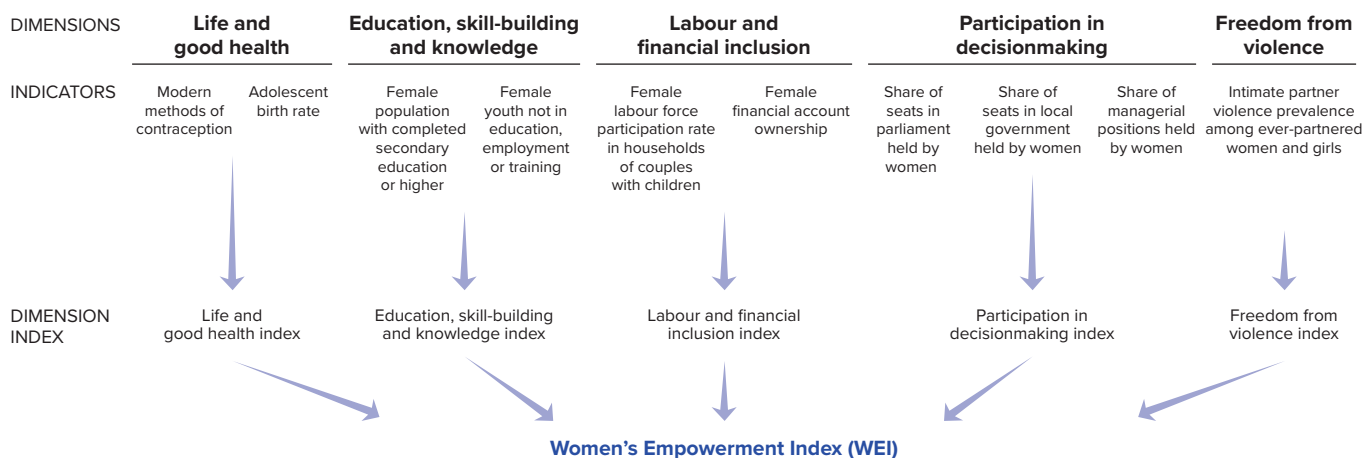
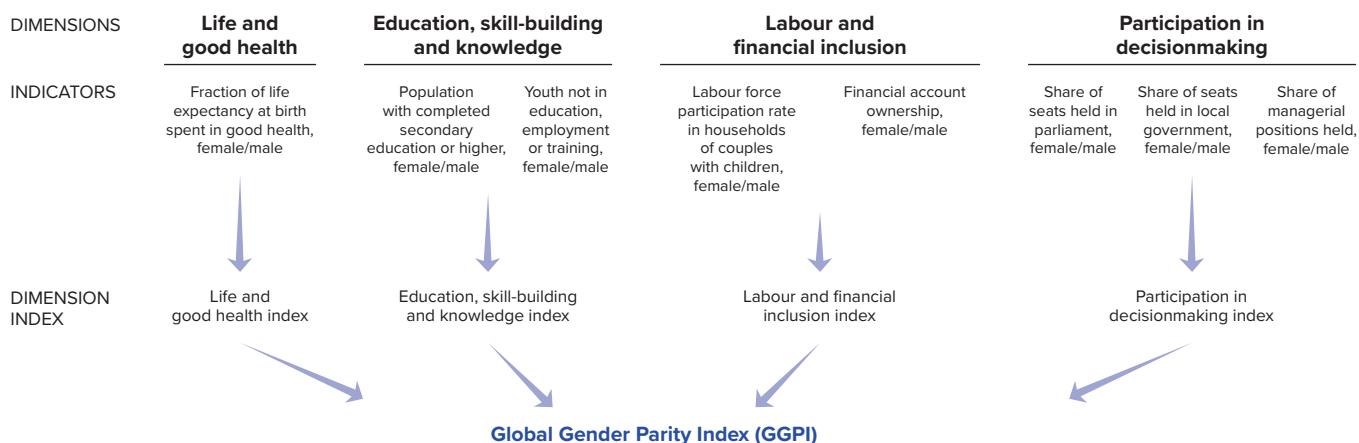


# Technical note: Twin indices on women's empowerment and gender equality

The Women's Empowerment Index (WEI) is a composite index that measures the level of women's empowerment across five dimensions: life and good health (two indicators); education, skill-building and knowledge (two indicators); labour and financial inclusion (two indicators), participation in decisionmaking (three indicators); and freedom from violence (one indicator).



The Global Gender Parity Index (GGPI) is a composite index that assesses the relative achievements between women and men in four dimensions: life and good health (one indicator); education, skill-building and knowledge (two indicators); labour and financial inclusion (two indicators); and participation in decisionmaking (three indicators).



The WEI and the GGPI are designed as twin indices to be used together to provide a more complete picture of countries' paths to women's empowerment and gender equality.

Due to limitations in country coverage and data quality, the experimental twin indices supplement, and do not replace, the existing gender metrics produced by the United Nations Development Programme (the Gender Development Index, the Gender Inequality Index and the Gender Social Norms Index).

## Indicators and data sources

Five dimensions and 10 indicators are used for the WEI, and four dimensions and 8 indicators are used for the GGPI. The WEI and GGPI are calculated

using data available as of 31 March 2023, unless otherwise noted.

For countries with missing data from the main data sources, additional data sources are used to replace missing data. These cases are documented in footnotes in the annex tables.

## Steps to calculate the Women's Empowerment Index

There are three steps to calculating the WEI values.

### Step 1. Normalizing the indicators

The normalization step transforms indicators expressed in different measurement units into component indices between 0 and 1. Minimum and

Dimensions	Women's Empowerment Index	Global Gender Parity Index	Indicators	Source
Life and good health		✓	Fraction of life expectancy at birth spent in good health (%), by sex [ <i>HALE/LE</i> ]	United Nations Development Programme (UNDP) and United Nations Entity for Gender Equality and the Empowerment of Women (UN Women) based on World Health Organization (WHO)
	✓		Women of reproductive age whose need for family planning is satisfied with modern methods (% ages 15–49) [ <i>MMC</i> ]	United Nations Department of Economic and Social Affairs (UNDESA)
	✓		Adolescent birth rate (births per 1,000 women ages 15–19) [ <i>ABR</i> ]	UNDESA
Education, skill-building and knowledge	✓	✓	Population with completed secondary education or higher (% ages 25 and older), by sex [ <i>CSE</i> ]	Barro and Lee, ICF Macro Demographic and Health Surveys, Organisation for Economic Co-operation and Development, United Nations Educational, Scientific and Cultural Organization Institute for Statistics and United Nations Children's Fund Multiple Indicator Cluster Surveys
	✓	✓	Youth not in education, employment or training (% ages 15–24), by sex [ <i>NEET</i> ]	International Labour Organization (ILO)
Labour and financial inclusion	✓	✓	Labour force participation rate among prime-working-age individuals who are living in a household comprising a couple and at least one child under age 6 (% ages 25–54), by sex [ <i>LFPRCW</i> ]	ILO
	✓	✓	Account ownership at a financial institution or with a mobile-money-service provider (% of population ages 15 and older), by sex [ <i>FINACNT</i> ]	World Bank
Participation in decisionmaking	✓	✓	Share of seats held in parliament (%), by sex [ <i>PR</i> ]	International Parliamentary Union
	✓	✓	Share of seats held in local government (%), by sex [ <i>LG</i> ]	UN Women
	✓	✓	Share of managerial positions held (%), by sex [ <i>TMNG</i> ]	UNDP and UN Women based on ILO
Freedom from violence	✓		Ever-partnered women and girls subjected to physical and/or sexual violence by a current or former intimate partner in the previous 12 months (% ages 15–49) [ <i>IPV</i> ]	WHO

**Note:** Text in brackets is the variable used in the equations to calculate the dimension indices.

maximum values (goalposts) act as the “natural zeros” or “aspirational targets” from which component indicators are standardized. They are set at the following values:

Dimension	Indicator	Minimum	Maximum
Life and good health	Modern methods contraception (MMC)	0	100
	Adolescent birth rate (ABR) <sup>a</sup>	0	200
Education, skill-building and knowledge	Female population with completed secondary education or higher (CSE <sub>f</sub> )	0	100
	Female youth not in education, employment or training (NEET <sub>f</sub> ) <sup>a</sup>	0	85
Labour and financial inclusion	Female labour force participation rate in households of couples with children (LFPRCW <sub>f</sub> )	0	100
	Female financial account ownership (FINACNT <sub>f</sub> )	0	100
Participation in decisionmaking	Share of seats in parliament held by women (PR <sub>f</sub> )	0	75
	Share of seats in local government held by women (LG <sub>f</sub> )	0	75
	Share of managerial positions held by women (TMNG <sub>f</sub> )	0	75
Freedom from violence	Intimate partner violence prevalence among ever-partnered women and girls (IPV) <sup>a</sup>	0	60

a. Negative indicator for which higher values indicate worse achievement.

**Note:** Text in parentheses is the variable used in the equations to calculate the dimension indices.

Most components are positive indicators—that is, higher values mean better achievement. However, three components—adolescent birth rate (ABR), female youth not in education, employment or training (NEET<sub>f</sub>) and intimate partner violence prevalence among ever-partnered women and girls (IPV)—are negative indicators—that is, higher values mean worse achievement.

The positive and negative indicators are normalized as follows:

$$\text{Normalized positive indicator (I)} = \frac{\text{actual value} - \text{minimum value}}{\text{maximum value} - \text{minimum value}}$$

$$\text{Normalized negative indicator (I)} = \frac{\text{minimum value} - \text{actual value}}{\text{maximum value} - \text{minimum value}}$$

## Step 2. Calculating the dimension indices

The dimension indices are calculated as the unweighted arithmetic mean of the normalized indicators.

Life and good health index:

$$I_{\text{Health}} = \frac{1}{2} (I_{\text{MMC}} + I_{\text{ABR}})$$

Education, skill-building and knowledge index:

$$I_{\text{Education}} = \frac{1}{2} (I_{\text{CSE}_f} + I_{\text{NEET}_f})$$

Labour and financial inclusion index:

$$I_{\text{Inclusion}} = \frac{1}{2} (I_{\text{LFPRCW}_f} + I_{\text{FINACNT}_f})$$

Participation in decisionmaking index:

$$I_{\text{Decisionmaking}} = \frac{1}{3} (I_{\text{PR}_f} + I_{\text{LG}_f} + I_{\text{TMNG}_f})$$

Freedom from violence index:

$$I_{\text{Violence against women}} = I_{\text{IPV}}$$

## Step 3. Aggregating the dimension indices

The WEI is the geometric mean of the five dimensional indices:

$$\text{WEI} = (I_{\text{Health}} \cdot I_{\text{Education}} \cdot I_{\text{Inclusion}} \cdot I_{\text{Decisionmaking}} \cdot I_{\text{Violence against women}})^{1/5}$$

### Example: Rwanda

Dimension	Indicator	Value
Life and good health	Modern methods contraception (MMC)	74.2
	Adolescent birth rate (ABR) <sup>a</sup>	32.2
Education, skill-building and knowledge	Female population with completed secondary education or higher (CSE <sub>f</sub> )	9.1
	Female youth not in education, employment or training (NEET <sub>f</sub> ) <sup>a</sup>	30.8
Labour and financial inclusion	Female labour force participation rate in households of couples with children (LFPRCW <sub>f</sub> )	64.3
	Female financial account ownership (FINACNT <sub>f</sub> )	45.0
Participation in decisionmaking	Share of seats in parliament held by women (PR <sub>f</sub> )	54.7
	Share of seats in local government held by women (LG <sub>f</sub> )	43.6
	Share of managerial positions held by women (TMNG <sub>f</sub> )	35.0
Freedom from violence	Intimate partner violence prevalence among ever-partnered women and girls (IPV) <sup>a</sup>	23

a. Negative indicator for which higher values indicate worse achievement.

**Note:** Text in parentheses is the variable used in the equations to calculate the dimension indices.

Life and good health index:

$$I_{MMC} = \frac{74.2-0}{100-0} = 0.742 \quad \text{and} \quad I_{ABR} = \frac{200-32.2}{200-0} = 0.839$$

$$I_{Health} = \frac{1}{2} (I_{MMC} + I_{ABR}) = \frac{0.742 + 0.839}{2} = 0.791$$

Education, skill-building and knowledge index:

$$I_{CSE_f} = \frac{9.1-0}{100-0} = 0.091 \quad \text{and} \quad I_{NEET_f} = \frac{85-30.8}{85-0} = 0.638$$

$$I_{Education} = \frac{1}{2} (I_{CSE_f} + I_{NEET_f}) = \frac{0.091 + 0.638}{2} = 0.365$$

Labour and financial inclusion index:

$$I_{LFPRCW_f} = \frac{64.3-0}{100-0} = 0.643 \quad \text{and} \quad I_{FINACNT_f} = \frac{45.0-0}{100-0} = 0.450$$

$$I_{Inclusion} = \frac{1}{2} (I_{LFPRCW_f} + I_{FINACNT_f}) = \frac{0.643 + 0.450}{2} = 0.547$$

Participation in decisionmaking index:

$$I_{PR_f} = \frac{54.7-0}{75-0} = 0.729, \quad I_{LG_f} = \frac{43.6-0}{75-0} = 0.581 \quad \text{and} \quad I_{TMNG_f} = \frac{35.0-0}{75-0} = 0.467$$

$$I_{Decisionmaking} = \frac{1}{3} (I_{PR_f} + I_{LG_f} + I_{TMNG_f}) = \frac{0.729 + 0.581 + 0.467}{3} = 0.592$$

Freedom from violence index:

$$I_{IPV} = \frac{60-23}{60-0} = 0.617$$

$$I_{Violence\ against\ women} = I_{IPV} = 0.617$$

WEI:

$$WEI = (I_{Health} \cdot I_{Education} \cdot I_{Inclusion} \cdot I_{Decisionmaking} \cdot I_{Violence\ against\ women})^{1/5}$$

$$= (0.791 \cdot 0.365 \cdot 0.547 \cdot 0.592 \cdot 0.617)^{1/5} = 0.565$$

## Steps to calculate the Global Gender Parity Index

There are two steps to calculate the GGPI.

### Step 1. Calculating the dimension indices

The dimension indices are calculated as the geometric mean of the ratio of the female indicator value to the male indicator value.

### Life and good health

The life and good health index is the fraction of life expectancy at birth spent in good health, which is calculated as the ratio of healthy life expectancy at birth (*HALE*) to life expectancy at birth (*LE*) for both females and males:

$$I_{Health} = \left( \frac{\frac{HALE_f}{LE_f}}{\frac{HALE_m}{LE_m}} \right)$$

### Education, skill-building and knowledge

The education, skill-building and knowledge index is calculated using the shares of the female and male population ages 25 and older who have completed secondary education or higher (*CSE<sub>f</sub>* and *CSE<sub>m</sub>*) and the shares of young females and males ages 15–24 who are not in education, employment or training (*NEET<sub>f</sub>* and *NEET<sub>m</sub>*):

$$I_{Education} = \left( \frac{CSE_f}{CSE_m} \cdot \frac{100 - NEET_f}{100 - NEET_m} \right)^{1/2}$$

### Labour and financial inclusion

The labour and financial inclusion index is calculated using the labour force participation rates for prime-working-age females and males (ages 25–54) living in a household comprising a couple and at least one child under age 6 (*LFPRCW<sub>f</sub>* and *LFPRCW<sub>m</sub>*) and the shares of females and males ages 15 and older who own an account at a financial institution or with a mobile-money-service provider (*FINACNT<sub>f</sub>* and *FINACNT<sub>m</sub>*):

$$I_{Inclusion} = \left( \frac{LFPRCW_f}{LFPRCW_m} \cdot \frac{FINACNT_f}{FINACNT_m} \right)^{1/2}$$

### Participation in decisionmaking

The participation in decisionmaking index is calculated using the shares of seats held in parliament by females and males (*PR<sub>f</sub>* and *PR<sub>m</sub>*), the shares of seats held in local government by females and males (*LG<sub>f</sub>* and *LG<sub>m</sub>*) and the shares of managerial positions held by females and males (*TMNG<sub>f</sub>* and *TMNG<sub>m</sub>*):

$$I_{Decisionmaking} = \left( \frac{PR_f}{PR_m} \cdot \frac{LG_f}{LG_m} \cdot \frac{TMNG_f}{TMNG_m} \right)^{1/3}$$

## Step 2. Aggregating the dimension indices

The GGPI is the geometric mean of the four dimension indices:

$$GGPI = (I_{Health} \cdot I_{Education} \cdot I_{Inclusion} \cdot I_{Decisionmaking})^{1/4}$$

### Example: Rwanda

Dimension	Indicator	Female value	Male value
Life and good health	Fraction of life expectancy at birth spent in good health ( <i>HALE/LE</i> )	86.20	88.15
Education, skill-building and knowledge	Population with completed secondary education or higher ( <i>CSE</i> )	9.1	12.1
	Youth not in education, employment or training ( <i>NEET</i> ) <sup>a</sup>	30.8	27.3
Labour and financial inclusion	Labour force participation rate in households of couples with children ( <i>LFPRCW</i> )	64.3	85.9
	Financial account ownership ( <i>FINACNT</i> )	45.0	55.8
Participation in decisionmaking	Share of seats held in parliament ( <i>PR</i> )	54.7	45.3
	Share of seats held in local government ( <i>LG</i> )	43.6	56.4
	Share of managerial positions held ( <i>TMNG</i> )	35.0	65.0

a. Negative indicator for which higher values indicate worse achievement.

Note: Text in parentheses is the variable used in the equations to calculate the dimension indices.

Life and good health index:

$$I_{Health} = \left( \frac{HALE_f}{LE_f} \cdot \frac{HALE_m}{LE_m} \right)^{1/2} = \left( \frac{86.20}{88.15} \right)^{1/2} = 0.978$$

Education, skill-building and knowledge index:

$$I_{Education} = \left( \frac{CSE_f}{CSE_m} \cdot \frac{100 - NEET_f}{100 - NEET_m} \right)^{1/2} = \left( \frac{9.1}{12.1} \cdot \frac{100 - 30.8}{100 - 27.3} \right)^{1/2} = 0.846$$

Labour and financial inclusion index:

$$I_{Inclusion} = \left( \frac{LFPRCW_f}{LFPRCW_m} \cdot \frac{FINACNT_f}{FINACNT_m} \right)^{1/2} = \left( \frac{64.3}{85.9} \cdot \frac{45.0}{55.8} \right)^{1/2} = 0.777$$

Participation in decisionmaking index:

$$I_{Decisionmaking} = \left( \frac{PR_f}{PR_m} \cdot \frac{LG_f}{LG_m} \cdot \frac{TMNG_f}{TMNG_m} \right)^{1/3} = \left( \frac{54.7}{45.3} \cdot \frac{43.6}{56.4} \cdot \frac{35.0}{65.0} \right)^{1/3} = 0.795$$

GGPI:

$$GGPI = (I_{Health} \cdot I_{Education} \cdot I_{Inclusion} \cdot I_{Decisionmaking})^{1/4} = (0.978 \cdot 0.846 \cdot 0.777 \cdot 0.795)^{1/4} = 0.846$$

## Women's Empowerment Index groups

Countries are not ranked due to limitations on country coverage and data quality but are classified into one of four categories: low, lower-middle, upper-middle and high. WEI groupings are based on the same fixed cutoff points as GGPI groupings (see below) to reflect the aspirational level of women's empowerment that countries should strive for. The cutoff points are WEI value of less than 0.600 for low women's empowerment, 0.600–0.699 for lower-middle women's empowerment, 0.700–0.799 for upper-middle women's empowerment and 0.800 or greater for high women's empowerment.

## Global Gender Parity Index groups

GGPI groupings are based on the GGPI fixed cutoff points derived from the quartiles of distributions of its scores. The cutoff points are GGPI value of less than 0.600 for low performance in achieving gender parity, 0.600–0.699 for lower-middle performance in achieving gender parity, 0.700–0.799 for upper-middle performance in achieving gender parity and 0.800 or greater for high performance in achieving gender parity. Countries with a GGPI value greater than or equal to 1 are categorized as high performance in achieving gender parity.