

## 2.1 Net enrolment ratio in primary education

### GOAL AND TARGET ADDRESSED

Goal 2: Achieve universal primary education

Target 2.A: Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling

### DEFINITION AND METHOD OF COMPUTATION

Definition

The net enrolment rate (NER) in primary education is the ratio of the number of *children of official primary school age* who are enrolled in *primary education* to the total population of *children of official primary school age*, expressed as a percentage

Concepts

*Children of official primary school age* are defined by the International Standard Classification of Education (ISCED97). The customary or legal age of entrance to primary school is not younger than five years or older than seven years and in principle covers six years of full-time schooling. Where more than one system of primary education exists within a country, the most widespread or common structure is used for determining the official school age group.

*Primary education* normally consists of programmes designed on a unit or project basis to give pupils a sound basic education in reading, writing and mathematics along with an elementary understanding of other subjects such as history, geography, natural science, social science, art and music.

Method of computation

To calculate the indicator, it is necessary to first determine the population of official primary school age, preferably by reference to the theoretical starting age and duration of ISCED97 Level 1 (primary education), for international comparability.

Then, the number of pupils of the official primary school age who are enrolled in primary education is divided by the population for the same age-group and the result is multiplied by 100.

$$NER_p^t = \frac{E_{p,a}^t}{P_{p,a}^t} \times 100$$

where:

$NER_p^t$  = Net enrolment rate in primary education p in school year t

$E_{p,a}^t$  = Enrolment of the population of age group a in primary education p in school year t

$P_{p,a}^t$  = Population of age group a, which officially corresponds to primary education p in school year t

Some children of primary school age might enter primary school early and advance to secondary school before they reach the official upper age limit of primary education. The NER does not include those children, underestimating the number of children who actually receive a full course of primary education. To overcome this limitation, an *adjusted net enrolment rate in primary education* can be calculated as the number of children of official primary school age who are enrolled either in primary or secondary education expressed as a percentage of the total population of children of official primary school age.

$$NERA_p^t = \frac{E_{p,s,a}^t}{P_{p,a}^t} \times 100$$

where:

$NERA_p^t$  = Adjusted net enrolment rate in primary education p in school year t

$E_{p,s,a}^t$  = Enrolment of the population of age group a either in primary p or secondary s education in school year t

$P_{p,a}^t$  = Population of age group a, which officially corresponds to primary education p in school year t

## **RATIONALE AND INTERPRETATION**

The indicator is used to monitor progress toward the goal of achieving universal primary education (UPE), identified in both the Millennium Development Goals and Education for All initiatives. Net enrolment refers only to pupils of official primary school age, whereas gross enrolment includes pupils of any age.

Net enrolment rates below 100 per cent provide a measure of the proportion of primary school age children who are not enrolled in primary school. Values below 100 alert policy makers to the need for policies that increase primary school enrolment in order to achieve the goal of UPE. Policies can target different populations of children depending on the characteristics of unenrolled children. Some children may have entered school and then dropped out in subsequent years requiring policies to increase retention rates. Other children may never have entered school requiring policies that increase the economic, social or physical accessibility of schools.

## **SOURCES AND DATA COLLECTION**

Data on school enrolment are usually recorded by the ministry of education or derived from surveys and censuses. If administrative data are not available, household survey data may be used, although household surveys usually measure self-reported attendance rather than enrolment as reported by schools. Also, household survey data may not be comparable between surveys. A serious problem with household survey data is also the inaccurate recording of pupils' ages, depending on the time of the year that the survey is conducted. Later in the school year, some younger children may appear to be of primary school age when in fact they are not. It can also happen that older children appear to be of secondary school age when in fact they were of primary age at the start of the school year.

Among international surveys, Multiple Indicator Cluster Surveys (MICS) and Demographic and Health Surveys (DHS) and sometimes also Living Standards Measurement Studies and Core Welfare Indicators Questionnaire Surveys in Africa provide school attendance data.

Data should be organized according to the levels of education defined in ISCED97 to ensure international comparability of resulting indicators.

When using administrative data, population estimates are used in the denominator. The use of different population estimates in the denominator is often at the origin of differences between national and international data for this indicator, as international population estimates generally differ from those available at the national level.

## **DISAGGREGATION**

Rural and urban differences are particularly important in the analysis of enrolment data, because of significant differences in school facilities, available resources, demand on children's time for work, and drop-out patterns.

It is also important to consider data disaggregated by sex, age, geographic location, social and ethnic groups, and type of school. Gender differences in education may be more pronounced in some social and ethnic groups.

Most countries collect data disaggregated by sex, age and type of school. Although administrative data cannot generally distinguish between urban and rural enrolment, household surveys may allow disaggregating data for urban and rural areas.

## **COMMENTS AND LIMITATIONS**

The theoretical maximum NER is 100 per cent. However, the NER may exceed this maximum due to inconsistencies between population and enrolment data derived from different data sources. School enrolments may be over or under-reported for various reasons.

Administrators may report exaggerated enrolments, especially if there is a financial incentive to do so. Inflated enrolment can be detected by examining data trends in relation to other variables closely related to enrolment (for instance, teachers and finance). Misreporting of enrolment by age is more difficult to overcome as children's birth certificates may not exist or are not checked by school heads.

On the other hand, survey data may under-report attendance as they might not reflect actual

attendance or dropout during the school year. Under-coverage may also result from surveys that miss schools or a sector of education; and children's ages may be inaccurately estimated or misstated.

The NER can be compared with the Gross Enrolment Ratio (GER) to assess the incidence of under-aged and over-aged enrolment in primary education. The GER represents the number of pupils enrolled in primary education, regardless of age, divided by the population of official primary school age, multiplied by 100. The GER can also provide an estimate of the number of school places available and hence whether the education system has the capacity to provide education for all children of primary school age.

## **GENDER EQUALITY ISSUES**

Families may perceive the value of education differently for boys and girls. In situations of limited resources, girls are more likely to suffer from limited access to education, especially in rural areas. However, where basic education is widely accepted and overall enrolment is high, girls' enrolment tends to be equal or higher than boys' enrolment. In order to highlight and monitor these differences, it is important to disaggregate the indicator by sex. It is also important to consider disaggregation by geographical areas and social or ethnic groups and sex, since gender differences may be more pronounced in some groups.

## **DATA FOR GLOBAL AND REGIONAL MONITORING**

The United Nations Educational, Social and Cultural Organization Institute for Statistics (UIS) produces time series for this indicator based on enrolment data reported by education ministries or national statistical offices through questionnaires sent annually to countries, and United Nations population estimates. For the global monitoring of the Millennium Development Goals, UIS reports the *adjusted net enrolment ratio in primary education*. Population estimates are revised and submitted to international agencies every two years by the United Nations Population Division based on recent country population censuses or updated information on births, deaths and migration. Consequently, UIS updates its time series in order to make trends comparable for UPE monitoring.

Countries are asked to report data according to ISCED, the international standard classification of education, to allow international comparison and benchmark progress towards national and international goals. ISCED is a framework for the compilation and presentation of national and international education statistics and indicators that covers all organized and sustained learning activities for children, youth and adults including those with special educational needs. It provides a sound basis for statistical comparisons between different education systems, allowing for reliable comparisons among countries. Countries are currently asked to report according to ISCED97. A new revision (ISCED 2011) was adopted in 2011. The first international data collections based on the new revision are planned to begin in 2014. To make historical data comparable over time, data reported before 1998 are adjusted for countries where the primary school enrolment structure is different from the ISCED97 framework.

The data received by UIS are validated using electronic error detection systems that check for arithmetic errors and inconsistencies and perform trend analysis for implausible results. Queries are taken up with the country representatives reporting the data so that corrections can be made or explanations given to errors and implausible results.

When national data are not based on ISCED97, certain adjustments are made. In addition, if necessary, UIS adjusts nationally reported data for under-reporting or over-reporting. In such cases, the results will normally be designated as UIS estimates.

In countries for which administrative data by age are not available, household survey data may be used to estimate the age breakdown structure. UIS may also adjust the data to overcome inconsistencies between population and enrolment data when the NER exceeds 100 per cent. For discrepancies of up to 5 percentage points, the indicator is adjusted using a capping factor that sets the higher of the male and female adjusted NERs to 100 per cent and adjusts the other values proportionately so that the Gender Parity Index (see "DEFINITIONS AND METHOD OF COMPUTATION" for Indicator 3.1) of the new set of values remains the same as for the original values.

## **SUPPLEMENTARY INFORMATION**

### **EXAMPLES**

## REFERENCES

United Nations (2008). *Principles and Recommendations for Population and Housing Censuses: Revision 2*. New York. Available from [http://unstats.un.org/unsd/publication/SeriesM/Seriesm\\_67rev2e.pdf](http://unstats.un.org/unsd/publication/SeriesM/Seriesm_67rev2e.pdf).

United Nations Children's Fund. Childinfo. *Monitoring the Situation of Children and Women. Education Statistics*. New York. Internet site <http://www.childinfo.org/education.html>.

United Nations Educational, Scientific and Cultural Organization. *Education Statistics Glossary*. Montreal. Internet site <http://www.uis.unesco.org/glossary>.

United Nations Educational, Scientific and Cultural Organization (1997). *International Standard Classification of Education, 1997 (ISCED)*. Montreal. Available from [http://www.uis.unesco.org/TEMPLATE/pdf/isced/ISCED\\_A.pdf](http://www.uis.unesco.org/TEMPLATE/pdf/isced/ISCED_A.pdf).

United Nations Educational, Scientific and Cultural Organization (2011). *International Standard Classification of Education, 2011 (ISCED)*. Montreal. Available from [http://www.uis.unesco.org/Education/Documents/UNESCO\\_GC\\_36C-19\\_ISCED\\_EN.pdf](http://www.uis.unesco.org/Education/Documents/UNESCO_GC_36C-19_ISCED_EN.pdf).

United Nations Educational, Scientific and Cultural Organization (2009). *Education Indicators Technical Guidelines*. Montreal. Available from [http://www.uis.unesco.org/ev.php?ID=5202\\_201&ID2=DO\\_TOPIC](http://www.uis.unesco.org/ev.php?ID=5202_201&ID2=DO_TOPIC).

## 2.2 Proportion of pupils starting grade 1 who reach last grade of primary

### GOAL AND TARGET ADDRESSED

Goal 2: Achieve universal primary education

Target 2.A: Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling

### DEFINITION AND METHOD OF COMPUTATION

Definition

The proportion of pupils starting grade 1 who reach last grade of primary measures the percentage of a cohort of pupils enrolled in grade 1 of the *primary level of education* in a given school year who are expected to reach the last grade of primary school, regardless of repetition.

Concepts

*Primary education*, according to the International Standard Classification of Education (ISCED97), normally consists of programmes designed on a unit or project basis to give pupils a sound basic education in reading, writing and mathematics along with an elementary understanding of other subjects such as history, geography, natural science, social science, art and music.

*Survival rate to the last grade of primary education* is another term that is sometimes used to describe the proportion of pupils starting grade 1 who are expected to reach the last grade of primary education.

Method of computation

The indicator is typically estimated from data on enrolment by grade for two consecutive years and repeaters by grade for the second year, in a procedure called the reconstructed cohort method. This method assumes that drop-outs do not return to school; that the promotion, repetition and drop-out rates for the last two years remain constant over the entire period in which the cohort is enrolled in school; and that the same rates apply to all pupils enrolled in a given grade, regardless of whether they previously repeated a grade.

The calculation is made by dividing the total number of pupils belonging to a school cohort who reach each successive grade up to the last grade of primary education by the number of pupils in the school cohort (in this case the students originally enrolled in grade 1 of primary education) and multiplying the result by 100.

$$SR_{g,i}^k = \frac{\sum_{t=1}^m P_{g,i}^t}{E_g^k} \times 100$$

where:

$i$  = grade(1,2,3...n);  $t$  = year(1,2,3...m);  $g$  = pupil - cohort

$$P_{g,i}^t = E_{g,i+1}^{t+1} - R_{g,i+1}^{t+1}$$

$SR_{g,i}^k$  = Survival rate of pupil - cohort  $g$  at grade  $i$  for a reference year  $k$

$E_g^k$  = Total number of pupils belonging to a cohort  $g$  at a reference year  $k$

$P_{g,i}^t$  = Promotees from who would join successive grades  $i$  throughout  $t$  successive years  $t$

$R_i^t$  = Number of pupils repeating in grade  $i$  in a school year  $t$

### RATIONALE AND INTERPRETATION

This indicator measures an education system's success in retaining students from one grade to the next as well as its internal efficiency. Various factors account for poor performance on this indicator, including low quality of schooling, discouragement over poor performance and the direct and indirect costs of schooling. Students' progress to higher grades may also be limited by the availability of teachers, classrooms and educational materials.

Indicator values range from 0 (none of the pupils starting grade 1 finish primary education) to 100 (all of the pupils finish). *Survival Rates* approaching 100 per cent indicate a high level of retention and a low incidence of dropout. It is important to note that it does not imply that all children of school age complete primary education. The *Survival Rate* is a percentage of a cohort of pupils (that is, children who have already entered school) and not a percentage of children of school age.

Survival rate to the last grade of primary education is of particular interest for monitoring progress toward universal primary education (UPE). It predicts the pattern of progression through the education system (promotion, repetition and drop out), and subsequent retention to the last grade of primary school, assuming no change in the current pattern. If survival rates are low, policy makers may need to take appropriate measures to improve the internal efficiency of the education system in order to achieve the UPE goal.

## **SOURCES AND DATA COLLECTION**

The indicator is based on grade-specific enrolment data for two successive years and on grade repeater data for the second year. These data are collected by countries on an annual basis through regular school surveys. Household survey data, which can be obtained from Multiple Indicator Cluster Surveys (MICS) and Demographic and Health Surveys (DHS) in a standard way, can also be used as they include information on current and last year school grades, as well as on level of attendance.

## **DISAGGREGATION**

Rural and urban differences are particularly important for the analysis of education data, because of significant differences in school facilities, available resources, demand on children's time for work, and drop-out patterns. It is also important to consider data disaggregated by sex, age, geographic location, social and ethnic groups, and type of school. Gender differences in education may be more pronounced in some social and ethnic groups.

Most countries collect data disaggregated by sex, age and type of school. Although administrative data cannot generally distinguish between urban and rural enrolment, household surveys may allow disaggregating data for urban and rural areas.

The calculation method at the sub-national level follows the same model as the method at the national level. However, results at the sub-national level from administrative records may be distorted due to pupil movement and transfers between schools and regions during two consecutive years.

## **COMMENTS AND LIMITATIONS**

Since the calculation of the *proportion of pupils starting grade 1 who reach last grade of primary* is based on pupil-flow rates, the reliability of the survival rate depends on the consistency of data coverage on enrolment and repeaters over time and across grades. Given that this indicator is usually estimated using cohort analysis models that are based on a number of assumptions, care should be taken in using the results in comparisons. Because flows caused by re-entrants, grade skipping, migration or transfers during the school year are not adequately captured, the indicator does not fully measure the true degree to which school entrants survive through primary education.

To complete the picture of primary completion, the indicator should be complemented by the intake rate to grade 1, which is given by the new entrants in the first grade of primary education expressed as a percentage of the population at the official primary school-entrance age. Together, these two indicators provide a much better measure of the proportion of children in the population who complete primary education.

## **GENDER EQUALITY ISSUES**

The frequency of repetition and dropout varies between girls and boys. Reasons for leaving school also differ for girls and boys, and by age. Families' demand on children's time to help in household-based work is an important factor and is often greater for girls. Also important for girls are security and proximity of school facilities and the availability of adequate sanitation and other services in schools.

## **DATA FOR GLOBAL AND REGIONAL MONITORING**

The United Nations Educational, Social and Cultural Organization Institute for Statistics (UIS) monitors this indicator globally, producing time series on school enrolment and repeaters based on data reported by education ministries or national statistical offices through questionnaires sent annually to countries.

Countries are asked to report data according to the levels of education defined in ISCED to ensure that indicators are internationally comparable. (On ISCED, see also DATA FOR GLOBAL AND REGIONAL MONITORING for [indicator 2.1](#))

The data received by UIS are validated using electronic error detection systems that check for arithmetic errors and inconsistencies and perform trend analysis to detect implausible results. Queries are taken up with the country representatives reporting the data so that corrections can be made or explanations given to errors and implausible results.

When national data are not based on ISCED97, certain adjustments are made. In addition, if necessary, UIS adjusts nationally reported data for under-reporting or over-reporting. In such cases, the results will normally be designated as UIS estimates.

No regional averages are generated for this indicator.

## **SUPPLEMENTARY INFORMATION**

### **EXAMPLES**

### **REFERENCES**

See "REFERENCES" from [Indicator 2.1](#).

## 2.3 Literacy rate of 15-24 year-olds, women and men

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### GOAL AND TARGET ADDRESSED

Goal 2: Achieve universal primary education

Target 2.A: Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling

### DEFINITION AND METHOD OF COMPUTATION

Definition

The literacy rate of 15–24 year-olds is defined as the proportion of the population aged 15–24 years who can both read and write with understanding a short simple statement on everyday life.

Concepts

*Literacy*, in addition to the ability to read and write with understanding a short simple statement, generally also encompass numeracy, that is, the ability to make simple arithmetic calculations.

The *youth literacy rate* is another term for the literacy rate of 15–24 year-olds.

Method of computation

The youth literacy rate is the number of people aged 15–24 years who are literate divided by the total population in the same age group and multiplied by 100.

$$LR_{15-24}^t = \frac{L_{15-24}^t}{P_{15-24}^t} \times 100$$

where:

$L_{15-24}^t$  = Literacy rate of age group 15-24 in year t

$L_{15-24}^t$  = Literate population of age group 15-24 in year t

$P_{15-24}^t$  = Population of age group 15-24 in year t

Since literacy data are not always available, modelling techniques can be used to produce annual estimates based on information from national censuses and surveys.

### RATIONALE AND INTERPRETATION

The youth literacy rate reflects the outcomes of the primary education system over the previous 10 years or so, and is often seen as a proxy measure of social progress and economic achievement. The literacy rate for this analysis is simply the complement of the illiteracy rate. It is not a measure of the quality and adequacy of the literacy levels needed for individuals to function and participate in a society. Individual reasons for failing to achieve the literacy standard may include a low quality of schooling, difficulties in attending school or dropping out before attaining basic and sustainable education skills.

The indicator ranges from 0 (all the youth are illiterate) to 100 (all the youth are literate). Literacy rates below 100 per cent indicate the need to increase school participation and education quality.

### SOURCES AND DATA COLLECTION

Population and housing censuses are the primary sources of basic literacy data. These data are usually collected together with other household characteristics including the educational, demographic and socio-economic statuses of household members. These literacy data are generally based on self-declaration (i.e. one person, usually the head of the household, indicates whether each member of the household is literate or not). The literacy definition may vary from one country to another or within the same country, from one population census to another. The collection of literacy data from this primary source follows the regularity of national population censuses which, in general, is every ten years.

National sample surveys are a second source of literacy data and involve the use of a literacy variable in a household or individual sample survey. These surveys are often designed to meet immediate data needs and do not always include systematic strategies for future repeats. So even though they may provide timely data, they may not always be a consistently reliable source over time.

International sample surveys, such as the Multiple Indicator Cluster Surveys (MICS), are a third source and involve the use of a literacy variable in a household or individual sample survey.

Population censuses are usually comprehensive and representative country-wide. Sample surveys may not be nationally representative. The targeted population of the survey may emphasize certain population categories more than others. For example, some surveys tend to give more emphasis to females aged 15–49.

Educational attainment should not be used as a proxy for literacy, as not all children who have received primary education acquired sustainable literacy skills.

## **DISAGGREGATION**

Rural and urban differences are particularly important in the analysis of education data because of significant differences in school facilities, available resources, and demand on children's time for work and drop-out patterns. It is also important to consider disaggregation by geographical area and social or ethnic groups. Gender differences may be more pronounced in some social and ethnic groups.

Literacy rate data should be collected to enable disaggregation by location (sub-national, urban and rural); age group (five-year age cohorts for the population aged 10 years and over (10–14, 15–19... 80–84, 85+)); and sex (total, male and female).

## **COMMENTS AND LIMITATIONS**

Literacy is measured crudely in population censuses, either through self or household report or by assuming that people with no schooling are illiterate, making international comparisons difficult. Comparability over time, even for the same survey, may also be a problem because definitions of literacy used in surveys are not standardized.

Shortcomings in the definitions of literacy, measurement problems, and infrequency of censuses and household surveys weaken this indicator's utility for monitoring education outcomes related to the goal of achieving universal primary education.

Literacy questions should be administered as part of national censuses and household surveys, or as part of post-census sample enumeration. Ideally, literacy tests should be included as part of the questionnaires, so literacy rates are not based on self-declaration.

## **GENDER EQUALITY ISSUES**

Higher illiteracy rates for women are the result of lower school enrolment and early drop-outs. Moreover, women generally have less access to training and literacy programmes. Female literacy rates disaggregated by geographic area and socio-economic status of the population are of interest to policy makers because marginalized women are more likely to suffer from illiteracy.

## **DATA FOR GLOBAL AND REGIONAL MONITORING**

The United Nations Educational, Social and Cultural Organization Institute for Statistics (UIS) is responsible for producing this indicator for global monitoring. The UIS collects literacy data from member states on an annual basis. These data are based on observed data reported by countries and territories as a response to a questionnaire that collects information and data on literacy. The primary respondent is the national statistical office (or equivalent agency) within each respective country and territory.

The data collected consist of the counts of the literacy for the population 10 years of age and older by region, urban/rural area, age group and sex. In order for the UIS to evaluate the quality and format of the data for inclusion in their database, it is necessary for countries to provide metadata corresponding to the data set. In addition, much of this information is made available to data users in order to facilitate their interpretation and use.

As definitions and methodologies used for data collection differ by country, comparisons are to be used with caution. In its efforts to improve the international comparability of literacy data, the UIS has developed guidelines to determine the suitability of national data for reporting at the international level. The guidelines specify that data collection tools must incorporate a "direct question" to assess literacy as part of its methodology. Data submitted to UIS must receive a satisfactory evaluation based on the

responses to the questionnaire's metadata section and be in the format required by the UIS. UIS produces estimates for countries with no recent national observed literacy data as well as projections to 2015 using the Global Age-specific Literacy Projections Model.

Population estimates from the United Nations Population Division are used to calculate the number of literates and illiterates. When these United Nations population estimates are not available, national population estimates are used.

Regional and global literacy indicators are calculated on the basis of the published data and when data are not available, imputations are made using secondary data sources. Averages, weighted by the population aged 15–24 of each country or territory within the region, are used to calculate regional figures. All countries and territories with UNPD population or national population estimates are included in the regional figures.

## **SUPPLEMENTARY INFORMATION**

### **EXAMPLES**

### **REFERENCES**

United Nations (2008). *Principles and Recommendations for Population and Housing Censuses: Revision 2*. New York. Available from [http://unstats.un.org/unsd/publication/SeriesM/Seriesm\\_67rev2e.pdf](http://unstats.un.org/unsd/publication/SeriesM/Seriesm_67rev2e.pdf).

United Nations Educational, Scientific and Cultural Organization (2006). *Global Age-specific Literacy Projections Model (GALP): Rationale, Methodology and Software*. Montreal. Available from <http://www.uis.unesco.org/TEMPLATE/pdf/Literacy/GALP.pdf>.

United Nations Educational, Scientific and Cultural Organization (2008). *Guidelines and Methodology for the Collection, Processing and Dissemination of International Literacy Data*. Version 3. Montreal. Available from <http://www.uis.unesco.org/template/pdf/Literacy/Lit%20Methodology.pdf>.

United Nations Educational, Scientific and Cultural Organization (2009). *Education Indicators Technical Guidelines*. Montreal. Available from [http://www.uis.unesco.org/ev.php?ID=5202\\_201&ID2=DO\\_TOPIC](http://www.uis.unesco.org/ev.php?ID=5202_201&ID2=DO_TOPIC).

United Nations Educational, Scientific and Cultural Organization (2009). *Education for All: Global Monitoring Report 2009*. Paris. Available from <http://www.unesco.org/en/efareport>.

## 3.1 Ratios of girls to boys in primary, secondary and tertiary education

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### GOAL AND TARGET ADDRESSED

Goal 3: Promote gender equality and empower women

Target 3.A: Eliminate gender disparity in primary and secondary education, preferably by 2005, and in all levels of education no later than 2015

### DEFINITION AND METHOD OF COMPUTATION

#### Definition

The *ratio of girls to boys in primary, secondary or tertiary education, or Gender Parity Index*, is the ratio between the Gross Enrolment Ratio (GER) of girls and that of boys, for each level of education.

#### Concepts

*Primary education*, according to the International Standard Classification of Education (ISCED97), normally consists of programmes designed on a unit or project basis to give pupils a sound basic education in reading, writing and mathematics along with an elementary understanding of other subjects such as history, geography, natural science, social science, art and music.

*Secondary education* is divided by ISCED97 into lower secondary education and upper secondary education. Lower secondary education is generally designed to continue the basic programmes of the primary level but with more subject-focused teaching, requiring more specialized teachers for each subject area. In upper secondary education, instruction is generally organized even more along subject lines and teachers typically need an even higher or more subject-specific qualification.

*Tertiary education* is defined by ISCED97 as programmes with an educational content more advanced than what is offered at the secondary level. The first stage is composed of largely theoretically based programmes intended to provide sufficient qualifications for gaining entry into advanced research programmes and professions with high skill requirements; and programmes that are generally more practical, technical and/or occupationally specific. The second stage of tertiary education comprises programmes devoted to advanced study and original research, which lead to the award of an advanced research qualification.

The *Gender Parity Index* (GPI) is another term used to describe the ratio of girls to boys in primary, secondary or tertiary education. The GPI is calculated based on the Gross Enrolment Ratio for a given level of education.

The *Gross Enrolment Ratio* (GER) is the total enrolment in a specific level of education, regardless of age, expressed as a percentage of the eligible official school-age population corresponding to the same level of education in a given school year.

#### Method of computation

The GPI is calculated by dividing the female GER by the male GER for a given level of education. To calculate the GER it is first necessary to determine the official school age population for each level of education. Then, the number of students enrolled in each level of education is divided by the official school age population for that level of education, and the result is multiplied by 100. GERs for boys and girls are calculated separately.

$$GER_k^t = \frac{E_k^t}{P_{k,a}^t} \times 100$$

where:

$GER_k^t$  = Gross Enrolment Ratio at level of education h in school year t

$E_k^t$  = Enrolment at the level of education h in school year t

$P_{k,a}^t$  = Population in age group a which officially corresponds to the level of education h in school year t

Note: For example, if the entrance age for primary education is 7 years with a duration of 6 years, then is (7-12) years.

This method requires information on the structure of education (that is, the theoretical entrance ages and durations of primary, lower secondary and upper secondary education), enrolments in each level of education and the populations of the age groups corresponding to the given levels of education. The age group for tertiary education usually corresponds to a five- year duration following the theoretical completion age of upper secondary education. Separate figures for boys and girls are required.

### **RATIONALE AND INTERPRETATION**

Gender parity in access to and participation in schooling is the first step toward gender equality in education. Eliminating gender disparity at all levels of education improves women's health and well-being, position in family and society, economic opportunities and returns, and political participation. A mother's level of education has also proved to have a strong positive effect on her children's education and family health. Women's education is also an important determinant of economic development. This indicator of equality of educational opportunities is a measure of both fairness and efficiency.

A GPI of 1 indicates parity between the sexes. A GPI lower than 1 indicates a disparity in favour of boys, that is, a disadvantage for girls; whereas a GPI greater than 1 indicates a disparity in favour of girls, that is, a disadvantage for boys.

### **SOURCES AND DATA COLLECTION**

Data on school enrolment are usually recorded by the ministry of education or derived from surveys and censuses. If administrative data are not available, household survey data may be used, although household surveys usually measure self-reported attendance rather than enrolment as reported by schools. Also, household survey data may not be comparable between surveys. A serious problem with household survey data is also the inaccurate recording of pupils' ages, depending on the time of the year that the survey is conducted. Later in the school year, some younger children may appear to be of primary school age when in fact they are not. It can also happen that older children appear to be of secondary school age when in fact they were of primary age at the start of the school year.

Among international surveys, Multiple Indicator Cluster Surveys (MICS) and Demographic and Health Surveys (DHS) and sometimes also Living Standards Measurement Studies and Core Welfare Indicators Questionnaire Surveys in Africa provide school attendance data.

Data should be organized according to the levels of education defined in ISCED97 to ensure international comparability of resulting indicators.

Population estimates used in the denominator of the Gross Enrolment Ratio can be obtained from population censuses and vital statistics registration. The use of different population estimates in the denominator is often at the origin of differences between national and international data for this indicator, as international population estimates generally differ from those available at the national level.

### **DISAGGREGATION**

Rural and urban differences are important for the analysis of gender differences in school enrolment, because of significant differences in school facilities, available resources, demand on children's time for work, and drop-out patterns that affect girls and boys differently. It is also important to consider disaggregation by geographical areas and social or ethnic groups since gender differences may be more pronounced in some groups. Disaggregation should focus on identifying marginalized populations, particularly those living in remote areas or belonging to minorities.

Most countries collect data disaggregated by sex, age, region, type of school, etc. Some countries however proceed with systematic data collection only for total enrolment, and disaggregations at the national level are extrapolated from data collected from a sample of schools. These breakdowns allow policy makers to target the population sub-groups where gender differences are more pronounced. Although administrative data cannot generally distinguish between urban and rural enrolment, household surveys may allow disaggregating data for urban and rural areas.

### **COMMENTS AND LIMITATIONS**

Caution should be exercised in interpreting trends towards gender parity. For example, the indicator cannot help determine whether improvements in the ratio reflect increases in girls' school participation (desirable) or decreases in boys' participation (undesirable). Also, it also does not reveal whether those

enrolled in school complete the relevant education cycles or, whether the overall level of participation in education is low or high.

Finally, the difference between the value of the GPI and the value 1—representing perfect parity—does not mean the same thing for girls and boys. For example, a GPI of 0.5—0.5 units away from parity—indicates that the value of the female component of the indicator (that is, the female GER) is half the value of the male component (that is, the male GER). By contrast, a GPI of 1.5—also 0.5 units away from parity—indicates that the value of the male component of the indicator is two-thirds of the value of the female component (not half). Consequently, a disadvantage for boys in terms of gender parity appears more drastic than a disadvantage for girls.

It is therefore important to supplement the analysis of trends in GPIs with analysis of trends in the GER of men and women.

Special attention should be paid to interpreting data related to tertiary education where a ratio in favour of girls may reflect the fact that a higher number of men than women study abroad or join the labour market early.

## **GENDER EQUALITY ISSUES**

In situations of limited resources, families make difficult choices about sending their children to school. They may perceive the value of education differently for boys and girls. Girls are more likely than boys to suffer from limited access to education, especially in rural areas. But where basic education is widely accepted and overall enrolment is high, girls tend to equal or outnumber boys at primary and secondary levels. The pattern is similar in higher education, but with larger differences between the two sexes.

## **DATA FOR GLOBAL AND REGIONAL MONITORING**

For global and regional monitoring, the United Nations Educational, Social and Cultural Organization Institute for Statistics (UIS) produces time series data based on enrolment data reported by education ministries or national statistical offices, through questionnaires sent annually to countries, and population estimates produced by the Population Division of the United Nations Department of Economic and Social Affairs (UNPD). Population estimates are revised and submitted to international agencies every two years by the United Nations Population Division based on recent country population censuses or updated information on births, deaths and migration. Consequently, UIS updates its time series in order to make trends comparable for UPE monitoring.

The Gender Parity Index is calculated for each level of education. To ensure international comparability, the official school age populations for each level of education are those defined in ISCED97. (on ISCED, see DATA FOR GLOBAL AND REGIONAL MONITORING for Indicator 2.1)

Country figures may differ from international figures because of differences between nationally defined school age populations and levels, and those defined in ISCED97 or differences in coverage (that is, the extent to which different types of education—for instance, private or special education—or different types of programmes—for instance, adult education or early childhood care and education—are included in national figures). There might also be differences between national population data and population estimates prepared by the UNPD, which are used by UIS as denominator for the indicator.

Regional and global averages are calculated on the basis of the data published by the UIS and using the best possible non-publishable estimates where no publishable data exist. Averages are produced using the appropriate school-age populations as weights. At the tertiary level, this is the five-year age group immediately following the theoretical end of secondary education as defined by ISCED97.

## **SUPPLEMENTARY INFORMATION**

### **EXAMPLES**

### **REFERENCES**

United Nations (2008). Principles and Recommendations for Population and Housing Censuses: Revision 2. New York. Available from [http://unstats.un.org/unsd/publication/SeriesM/Seriesm\\_67rev2e.pdf](http://unstats.un.org/unsd/publication/SeriesM/Seriesm_67rev2e.pdf).

United Nations Children's Fund. Childinfo. Monitoring the Situation of Children and Women. Education Statistics. New York. Internet site <http://www.childinfo.org/education.html>.

United Nations Educational, Scientific and Cultural Organization (2009). Education Indicators Technical Guidelines. Montreal. Available from [http://www.uis.unesco.org/ev.php?ID=5202\\_201&ID2=DO\\_TOPIC](http://www.uis.unesco.org/ev.php?ID=5202_201&ID2=DO_TOPIC).

United Nations Educational, Scientific and Cultural Organization (1997). International Standard Classification of Education, 1997 (ISCED). Montreal. Available from [http://www.uis.unesco.org/TEMPLATE/pdf/isced/ISCED\\_A.pdf](http://www.uis.unesco.org/TEMPLATE/pdf/isced/ISCED_A.pdf).

United Nations Educational, Scientific and Cultural Organization. Education Statistics Glossary. Montreal. Internet site <http://www.uis.unesco.org/glossary>.