ITU Regional ICT Indicators Workshop for Africa

Lilongwe, Malawi
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IDI 2018
Skills sub-index and indicators

ICT Data and Statistics Division
Telecommunication Development Bureau
International Telecommunication Union

Indicators in the 2018 Use sub-index

4 indicators

- Proportion of individuals with ICT skills

  [from Household ICT surveys]

- Mean years of schooling
- Gross enrolment ratio (secondary)
- Gross enrolment ratio (tertiary) –

  [3 proxy indicators from Unesco Institute of Statistics]

Indicators in the Skills sub-index

- Proportion of individuals with ICT skills
  - Collected from countries through ITU Short Questionnaire; as
  - number of individuals that have undertaken computer-related activities as listed in questionnaire (Question HH 15)
  - recalculated as proportion of individuals with ICT skills as input into Skills sub-index.

HH15: Individuals with ICT skills, by type of skills

- Copying or moving a file or folder
- Using copy and paste tools to duplicate or move information within a document
- Sending e-mails with attached files (e.g. document, picture, video)
- Using basic arithmetic formulae in a spreadsheet
- Connecting and installing new devices (e.g. a modem, camera, printer)

HH15: Individuals with ICT skills, by type of skills

- Finding, downloading, installing and configuring software
- Creating electronic presentations with presentation software (including text, images, sound, video or charts)
- Transferring files between a computer and other devices
- Writing a computer program using a specialized programming language

Quiz

- For an individual to be classified as having ICT skills (s)he must have performed at least 5 (ie more than half) of the 9 listed activities in the reference period: TRUE or FALSE
- When reporting in the ITU short questionnaire, the proportion of individuals with ICT skills must be expressed to 2 decimal places: TRUE or FALSE

Indicators in the Skills sub-index

- From UNESCO Institute of Statistics
  - Mean years of schooling (2014 retro, 2015,2016)
  - Gross enrolment ratio(secondary)
  - Gross enrolment ratio (tertiary)

Indicators in the Skills sub-index

- Studies support the view that education is the most significant variables for Internet penetration. Thus level of educational attainment influences the adoption and penetration ICT indicators such as Internet users and PCs.
- Kumar, Naresh & Rego, Shailaja. (2018). Linkages between level of educational attainment and technology diffusion in developing countries.

Mean years of schooling

Definition

Average number of completed years of education of a country's population aged 25 years and older, excluding years spent repeating individual grades.

Data required

Population aged 25 years and above by highest level of education attained.

Data source

Mainly national population census; household and/or labour force surveys.

Types of disaggregation

By sex.

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Mean years of schooling
Sample calculation

Take a country where primary education lasts 4 years, secondary education lasts 8 years, and tertiary education lasts 4 years, and assume that these durations have remained constant over time.

Assume further that 10% of the population aged 25 years and older have no schooling, 10% have incomplete primary education, 40% completed primary education, 30% completed secondary education, and 10% completed tertiary education.

MYS estimate for the population aged 25 years and older can be computed as follows:

$(0.1 \times 0) + (0.1 \times 4/2) + (0.4 \times 4) + [0.3 \times (4 + 8)] + [0.1 \times (4 + 8 + 4)]$

$= 0 + 0.2 + 1.6 + 3.6 + 1.6$

$= 7$ years

Quiz

- Suppose in the sample calculation of MYS above, 10% has incomplete secondary education and 20% has completed secondary education, what changes should be made to the calculation? You need not complete the calculation.
- Answer

Gross enrolment ratio

Definition

Number of students enrolled in a given level of education, regardless of age, expressed as a percentage of the official school-age population corresponding to the same level of education. For the tertiary level, the population used is the 5-year age group starting from the official secondary school graduation age.

Data required

Total enrolment for a given level of education; population of the age group corresponding to the specified level.

Data source

School register, school survey or census for data on enrolment by level of education; population census or estimates for school-age population.

Types of disaggregation

By sex and by level of education.

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GER Sample calculation

Gross enrolment ratio (GER)

Assume a country has 512,314 students of official secondary school going age.

The enrolment in all secondary schools is 490,188 of all ages including repeaters

The GER secondary = 490,188 / 712,314 $\times$ 100 = 68.8

For the tertiary level, the population used is the 5-year age group starting from the official secondary school graduation age.

Quiz

- What is the ideal value for mean years of schooling?
- Which of the following statements would you expect to be true

  A) Gross enrolment ratio (secondary)> gross enrolment ratio (tertiary)

  or

  B) Gross enrolment ratio (tertiary) >Gross enrolment ratio (secondary)

Thank you

For more information
http://www.itu.int/ict
and
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Answer

- $(0.1 \times 0) + (0.1 \times 4/2) + (0.4 \times 4) + \sout{[0.3 \times (4 + 8)]} + [0.1 \times (4 + 8 + 4)]$
- $[0.3 \times (4 + 8)]$ becomes $[0.1 \times (4 + 8/2)] + [0.2 \times (4+8)]$
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