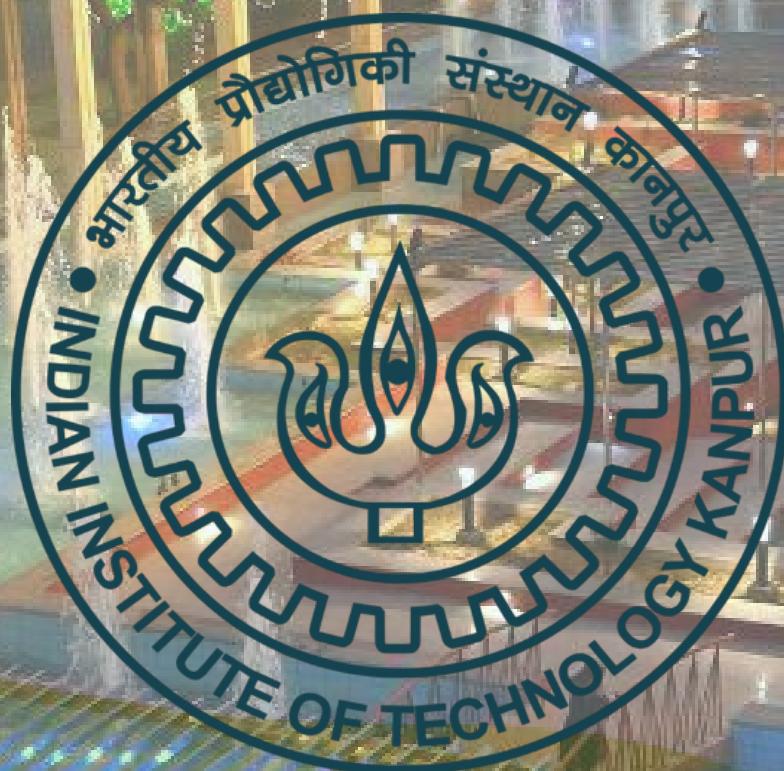


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PPOC PROJECT REPORT



PREPARED BY
NIKUNJ
NITISH
KARTIKEY

LITERACY RATE

UN DEVELOPMENT INDICATOR

Education is a basic human need and a key factor in development. Investment in education will directly raise the well-being of individuals, but it will also raise their 'human capital' and capacity to acquire means for the satisfaction of other basic needs. Education is also seen as a means of reducing inequality, as a mechanism of making other investments more productive and as an avenue for social and political development.



NIKUNJ KUMAR JAIN(21129015)
NITISH SHANKAR(180491)
KARTIKEY(200493)

LITERACY RATE

EDUCATION AS BASIS

~A Development
Indicator

Introduction

ESSENTIAL FOREWORDS

Definitions

- **Human Development Indicators**

A method used to measure how developed a country or region is compared with others. To understand what is indicator? and other questions of similar nature, let us first define an indicator itself. An indicator is that which points out or directs attention to something According to Jonstone (1981), an indicator should be something giving a broad indication of the state of the situation being investigated. Indicator is not an elementary item of information but it is processed information. Indicators are often compared to a 'norm' or a 'standard' (like pupil-teacher ratio) or to a previous score. Indicators reflect the way in which an objective can be achieved as well as to what degree approximately the objective has been achieved at any stage. The following are the characteristics of a good indicator:

• **Characteristics of a Good Human Development Indicator**

1. An indicator should provide useful information to the policy makers
2. Its ability to summarize information without distortions
3. Its precision and comparability
4. Its reliability and frequency of updating
5. It allows to relate it with other indicators for global analysis
6. It measures how far or how close one is from the objectives
7. It helps to identify problematic or unacceptable situation
8. It meets policy concerns; and
9. It helps to compare its value to a reference value, to a norm/standard or itself, as computed for different periods

- # Types of Human Development Indicators

1. Economic Indicators

Economic indicators measure how developed a country may be through financial and industrial means. For example:

- **Gross Domestic Product (GDP)** : This is the total value of goods and services (in \$US) produced by a country in a year. Gross National Product (GNP) is similar but also includes foreign investments. These measures indicate that level of economic activity as well as the productivity of a population.
- **Economic Structure** This measures the percentage of the GDP that is created through the different sectors of the economy. A country that produces its wealth through secondary and tertiary industries is likely to be more developed than a country which relies on primary industries.
- **Aid received** This measures the amount of money a country receives as a percentage of their GDP. Higher values would suggest that countries are unable to create enough wealth domestically to provide for their population.

2. Social Indicators

Social indicators measure how developed a country may be through non-financial and economic means. For example:

- **Literacy Rate** This measures the percentage of adults in a country who are able to read and write their common language. A higher literacy rate is an indication of higher standards of education and the good ability of the population to find formal employment.
- **Life Expectancy** This measures the average age at which a person of that country is likely to die. This is a good indicator of the quality of the healthcare provided by a country as well as the ability of the population to access adequate sanitation and simple disease prevention methods.
- **People per doctor** This measures the average number of people that could be seen by a doctor at any one time. The higher the number the greater the indication of low central funding for healthcare and low education levels that would allow people to train in the profession.

Body

WHAT IT COMPRISES OF

Calculation of Human Development Index

Different methodologies for estimating/surveying the Educational development indicator

1. Literacy statistics survey

The purpose of this report is to provide the data user with information on how the UNESCO Institute for Statistics (UIS) collects processes and disseminates its international literacy statistics.

1.1 Countries and territories surveyed

In total, 222 countries and territories are surveyed (see Appendix I) annually. Since the data are obtained from censuses and surveys that are not administered annually new data on literacy are not expected to be available on a yearly basis from all respondents. In some cases, countries no longer use the traditional dichotomous variable as a measure for literacy and have moved towards the use of literacy assessment instruments in order to measure functional literacy. In this case, traditional data may no longer be available but information about the nature of the assessment is collected.

1.2 The survey process

The UIS sends the literacy questionnaire to countries and territories typically in May of each year. A response period of two to three months is given. A follow-up formal reminder is dispatched to respondents towards the end of the response period. In the event that no response is received, informal reminders may be sent.

The survey package consists of the literacy questionnaire (see Appendix II) and supporting documentation.

Respondents can complete the questionnaire in one of several ways, including directly on-line via the UIS website (www.uis.unesco.org) or by sending the completed questionnaire to the UIS via e-mail, facsimile or regular post.

The primary respondent to the literacy questionnaire is typically the National/Territorial Statistical Office (or equivalent agency). Copies of the questionnaire are sent to both the UNESCO Permanent Delegation and the UNESCO National Commission of each Member State for information purposes. UNESCO regional, cluster and national offices are also sent copies of the questionnaire for their information. Any additional requirement for receiving copies of the questionnaire is determined on an individual country or territorial basis.

1.3 The data collected

The data collected through the UIS literacy questionnaire consist of the following: counts of the population by literacy status (total, literate, illiterate and not specified) for the population aged 10 years and older by geography (national, urban and rural), age group (five-year age groups and age unknown) and sex (total, male and female).

The questionnaire also includes a set of metadata questions that are necessary for the UIS and data users to better understand and interpret the literacy data submitted by countries and territories. Some of the metadata information is also used to help determine the suitability of the literacy data for use by the UIS as outlined in Section 2.2.

1.4 Metadata information

The metadata information provided in the questionnaire is reviewed by the UIS in order to help evaluate the suitability of the literacy data for inclusion in its database.

Much of this information is also made available to data users. The following list shows the metadata information that is requested in the questionnaire:

- i. The type of data collection instrument used (A1).
- ii. The reference year or period of the data (A2).
- iii. An indication of any coverage issues that would help to interpret the results. One such example might be the fact that specific geographic regions were excluded due to remoteness, lack of accessibility or high costs of collecting data. Another is the exclusion of a sub-population, such as institutionalized and military populations. In such cases, the data will be footnoted accordingly (A1, A3).
- iv. Information about the respondent to the census or survey (A4).
- v. A description of any key concepts and definitions used (B1, B2, B3.2.1, and B3.3.1).
- vi. Information about the use of provisional or estimated data (B3.1.1).
- vii. Information on the availability of published data (C1).
- viii. Information about websites where further information can be found (C2).
- ix. Information about existing analyses (C3).
- x. The source and date for the next anticipated release of literacy data (C4).
- xi. In addition, when a country is reporting data from a literacy assessment (Section D), information is also collected about the assessment data, including:
 - xii. The name of the assessment instrument (D1).
 - xiii. The reference year or period of the data (D2).

- xiv. An indication of the skills that were tested by the assessment (D3).
- xv. The number of levels or categories of literacy skills that are used (D4).
- xvi. Information about websites where further information can be found (D5).
- xvii. Supplementary information about the assessment (D6).

1.5 Supplementary data sources

It is the goal of the UIS to compile and make available to data users a comprehensive database of international literacy data. Since literacy and other education questions are commonly used in many international socio-economic household sample surveys, the UIS has established data exchange programmes with other international agencies in order to supplement its own data collection.

The two most common additional sources of literacy data include the Multiple Indicator Cluster Survey (MICS), which is supported by UNICEF, and Population Census data that are collected by the United Nations Statistics Division (UNSD). Other literacy data, such as those obtained from the World Bank-supported Core Welfare Indicators Questionnaire (CWIQ), are used if necessary.

These data are provided to the UIS in the same or similar (due to limitations of the data) format as described in Section 1.3. Any supplementary data source used by the UIS must meet the established UIS criteria for literacy data

2. International literacy data

Literacy data are collected through national population and household censuses, national household surveys or international household surveys. The UIS has identified which data sources provide the necessary literacy data and outlines below the criteria for their selection and inclusion in the UIS database.

2.1 Sources of literacy data

Population and Housing Censuses are the primary source of traditional dichotomous variable literacy data. These data are usually collected together with other household characteristics, such as educational, demographic and socio-economic status. These literacy data are generally based on self-declaration or proxydeclaration (i.e. one person, usually the head of the household, indicates whether each member of the household is literate or not). Although the literacy definition may vary from one

country to another, typically it is in the following form: "Can [Name] read and write a simple sentence in [Language(s)]

National Sample Surveys, either household or individual, that include a question about literacy are a second source of literacy data. Although these surveys focus on national policy and provide timely data, they do not always include a systematic strategy for future repeats; therefore, they may not be a consistently reliable source of literacy data over time.

International Sample Surveys, either household or individual, that include a question on literacy are a third source of literacy data. These surveys are designed to meet commonly agreed upon international data needs, while at the same time providing data for national policy purposes. These surveys may be implemented on a regular basis in selected countries globally. Modules from international surveys are sometimes added to other on-going national sample surveys

2.2 Criteria for UIS literacy data

In its efforts to improve the international comparability of literacy data, the UIS has developed criteria for determining the inclusion of literacy data into its database. The following are the criteria to help determine the suitability of national data for reporting at the international level:

- i. It must incorporate a “direct question” to assess literacy as part of its methodology. In many instances, the question(s) take the form “Can [Name] read and write a simple sentence in [Language(s)]”.
- ii. It must receive a satisfactory evaluation by the UIS that is based on the responses to the questionnaire’s metadata section.
- iii. It must be able to provide data in the format required by the UIS. At the minimum, the source must be able to provide literacy counts according to the following characteristics:
 - a. Geography: National, Urban and Rural if available
 - b. Age group: five-year age cohorts for the population aged 10 years and over (10-14, 15-19... 80-84, 85+).
 - c. Sex (Total, Male and Female).
- iv. Educational attainment or other data will not be accepted as a proxy for literacy.
- v. Data based solely on literacy projection and estimation models will not be accepted.

3. Data processing

The procedures applied by the UIS during the data processing stage are described below.

3.1 Internal consistency checks

Internal consistency checks are conducted in order to ensure the accuracy of the data provided. The following items are checked for each questionnaire:

Within tables:

- a) Total = literates + illiterates + not specified
- b) Both sexes Total = Male total + Female total
- c) Both sexes Literates = Male literates + Female literates
- d) Both sexes Illiterates = Male illiterates + Female illiterates
- e) Total age 10+ = Sum of all age groups in the table

Across tables:

- f) Corresponding total rows = Corresponding urban rows + Corresponding rural rows
- g) Corresponding total columns = Corresponding urban columns + Corresponding rural columns

3.2 Age unknown

When reporting data in Tables B3.1, B3.2 and B3.3, it is possible to have counts of the population by literacy status for which the age is unknown. When counts of the population are reported by literacy status as age unknown, these data will be removed during the processing of the questionnaire and not included in the calculation of literacy and illiteracy rates. As such, the Total 10+ row, by literacy status, will be adjusted as follows:

- i) New total population aged 10+ for literacy status I =
Total population aged 10+
years for literacy status I – Age unknown for literacy status
- ii) New male population aged 10+ for literacy status I =
Male population aged 10+
years for literacy status I – Age unknown for literacy status
- iii) New female population aged 10+ for literacy status I =
Female population aged
10+ years for literacy status I – Age unknown for literacy status

3.3 Population not specified

When reporting data in Tables B3.1, B3.2 and B3.3, it is possible to have counts of the population by age group for which the literacy status is not specified. When counts of the population by age group are reported by literacy status as not specified, these data will be removed during the processing of the questionnaire and not included in the calculation of literacy and illiteracy rates. As such, the relevant age group total will be adjusted as follows:

- i) New total population for age group a = Total population for age group a – Not-specified population for age group a
- ii) New male population for age group a = Total population for age group a – Not-specified population for age group a
- iii) New female population for age group a = Total population for age group a – Not-specified population for age group a

4. Calculating literacy/illiteracy rates and the literate/illiterate population

The international comparability of literacy statistics has been improved in two ways by the UIS. First, the fact that the data being reported are from data sources that have a similar methodology, as outlined in Section 2.2, improves comparability. Second, UN population estimates are used to calculate the number of literates and illiterates. These estimates are used because they are produced by UNPD using the same methodology and assumptions across countries (see Section 5.3). When UN population estimates are not available, national population estimates may be used. The section below describes the methodology used by the UIS to calculate both literacy/illiteracy rates and the counts of the literate/illiterate population for any given age group and sex.

4.1 Determining literacy and illiteracy rates

Step 1: For each respective age groupa, the literacy and illiteracy rates by sexes are calculated directly from the national data submitted to the UIS as follows:

- i) Literacy rate for sexes = (Number of literates for sexes / Total population for sexes) * 100
- ii) Illiteracy rate for sexes = (Number of illiterates for sexes / Total population for sexes) * 100

4.2 Determining the literate and illiterate population

Step 2: The literacy and illiteracy rates calculated in Step 1 above are then applied to the United Nations Population Division (UNPD) population estimates for each age group in order to obtain the count of the literate and illiterate populations as follows:

- i. Literate population for sexes and age groupa = Literacy rate for sexes and age groupa * UN population for age groupa
- ii. Illiterate population for sexes and age groupa = Illiteracy rate for sexes and age groupa * UN population for age groupa

Step 3: Adjusting the Total Literate and Illiterate Populations When applying the literacy and illiteracy rates individually to the new total, male and female counts of literates and illiterates for each of the respective age cohorts, the resulting male and female count of literates

and illiterates will not be equal to the new total count of literates and illiterates that was calculated in the manner described

Table 1. Adjusting the literate/illiterate total count

	National			UIS			UIS Adjusted
	Literate Population	Total Population	Literacy Rate	Literate Population	Total UN Population	Literacy Rate	Literate Population
Male	772,142	1,613,134	47.87	1,001,226	2,091,728	47.87	1,001,226
Female	437,098	1,875,946	23.30	494,381	1,121,795	23.30	494,381
Total	1,209,240	3,489,080	34.66	1,460,316	4,213,523	34.66	1,495,607
Male + Female	1,209,240	3,489,080		1,495,607	4,213,523		1,495,607
	National			UIS			UIS Adjusted
	Illiterate Population	Total	Illiteracy Rate	Illiterate Population	Total UN Population	Illiteracy Rate	Illiterate Rate
Male	Pop 140,992	1,613,134	52.13	1,090,502	2,091,728	52.13	1,090,502
Female	1,438,848	1,875,946	76.70	1,627,414	1,121,795	76.70	1,627,414
Total	2,279,840	3,489,080	65.34	2,753,207	4,213,523	65.34	2,717,916
Male + Female	2,279,840	3,489,080		2,717,916	4,213,523		2,717,916

To correct for this problem, the original total count of literates and illiterates needs to be adjusted by calculating a new total by summing the new male and new female count of literates and illiterates as follows:

- i) Total literate population for age group a = New male literate population for age group a + New female literate population for age group a
- ii) Total illiterate population for age group a = New male illiterate population for age group a + New female illiterate population for age group a

5. Calculating regional averages

Regional and global literacy indicators are produced in order to meet the needs of data users and, in particular, for the purposes of global monitoring for the Education for All (EFA) and Millennium Development Goals (MDG) initiatives. Groupings based on three monitoring initiatives are produced: EFA, MDG and UNESCO regions, as well as other regions such as World Bank income regions. Custom regional groupings are also possible.

The UIS shows historical data using the time periods: 1975 to 1984, 1985 to 1994, 1995 to 2004 and 2005-2014 that correspond to the United Nations Statistics Division (UNSD) census cycles. When calculating a regional average for these time periods, the latest available observed data or GALP estimates for each respective time period are used in the calculation.

Due to improvements in estimation methodology, an annual average figure can also be calculated for year 2005 and onward.

5.1 Weighted average formula

An average, weighted by the population of the country or territory within the region, is used to calculate a regional or global figure. All countries and territories with UN population or national population estimates are included in the regional figure

All countries and territories with UNPD population or national population estimates have a literacy rate and count of illiterates that is either observed or imputed. The formulas described below are applicable to Total (T), Male (M) and Female (F) populations.

i. Literacy rate

$$\text{Regional average literacy rate } {}^T_t = \frac{\sum_{i=1}^n LTRi, t * \frac{Pop_{i,t}^p}{\sum_{i=1}^n Pop_i, t^p}}{\sum_{i=1}^n Pop_i, t}$$

Where:

$LTR_{i,t}$ = Literacy rate for country "i" for year "t"

$Pop_{i,t}^p$ = Total population aged "p" for country i for year "t"

p = population of age cohort

n = number of countries in the region

t = year of data

ii. Count of illiterates

$$\text{Regional total count of illiterates } {}^T_t = \sum_{i=1}^n Illiterate_{i,t}$$

n = number of countries in the region

t = year of data

5.2 Estimating values for missing data

When observed data are not available for a given country, it is necessary to impute values that are based on other data or on an "imputation" methodology. The UIS produces estimates, both publishable and non-publishable, in order to improve its regional and global estimates. In many cases, data for an individual country or territory have not been available for many years, yet to simply ignore

calculation of the regional or global average may produce a figure that is not representative. Described below are some of the sources of data and techniques used to derive literacy estimates for countries with missing data.

5.2.1 Literacy estimates derived from the UIS Global Age specific Literacy Projections Model (GALP)

The UIS literacy projection model can provide some estimates of literacy/illiteracy rates and counts of literates/illiterates for selected years for which data are not available. Estimates produced from this model are based on observed data that has been projected from a reference year in the past. For more information about GALP, please refer to the UIS document "Global Age-Specific Literacy Projection Model: Rationale, Method and Software" UIS: Montreal, 2006.

In order to improve the quality of the GALP estimates used, only source data from the previous two decennial census cycles from the present are used. As such, only estimates obtained from projected baseline data from the periods 1985-1994, 1995-2004 and 2005-2008 are currently used.

5.2.2 Literacy estimates based on proxy literacy data

Educational attainment data can be used as a proxy for determining the illiterate population of a given country. These data are typically available from censuses and most socio-economic household surveys. In many countries, the Labour

Force Survey (LFS) is the most frequently used source for

Although research indicates that primary education is not always a reliable predictor of literacy skills, educational attainment data is used as a proxy to impute literacy rates for countries for which the regular "dichotomous" literacy data are not available. The UIS defines "illiterates" as those persons who reported their highest educational attainment level as having "no schooling", "some primary school" or having "not completed primary school". Data that are based on a proxy of educational attainment are used only for estimating purposes and are not disseminated at the individual country or territory level.

5.2.3 Other estimates

The UIS continually seeks to improve the quality of its literacy data and estimates. As such, estimation techniques and methodologies are continually reviewed and improved upon as necessary

5.3 Population data

In order to improve the international comparability of literacy data, the UIS applies UN Population Division population estimates when determining the number of literates and illiterates for a country or territory. These estimates are typically updated every second year. UNPD provides population estimates by single years of age for countries and territories with populations of 80,000 persons and greater. For countries or territories having a population of less than 80,000 persons, national country population data, when available are used.

6. Literacy indicators

For the purpose of monitoring progress towards the EFA and MDG global literacy goals, the UIS produces adult (aged 15 years and over) and youth (aged 15 to 24 years) literacy rates, in addition to calculating the number of adult and youth illiterates. To complement this information, illiteracy rates and number of literates are also produced. Furthermore, the literacy gender parity index (GPI) and the percentage of females that are illiterate are also produced as standard indicators. The following sections describe the policy relevance and the methodologies used to calculate literacy/illiteracy rates and the counts of literates/illiterates. These data are available for the population aged 15 years and over and tabulated by sex (total, male and female), age group (five-year cohorts or combinations) and geography (total, urban and rural). The availability of all or part of these data differs amongst countries.

6.1 Calculating the literacy and illiteracy rates

Definition: The literacy rate is defined as the percentage of the population for a given age group that can both read and write with understanding a short simple statement on his/her everyday life. The complement of this measure, the illiteracy rate, is defined as the percentage of the population for a given age group that cannot both read and write with understanding a short simple statement on his/her everyday life.

Purpose: The literacy rate shows the accumulated achievement of primary education and literacy programmes in imparting basic literacy skills to the population, thereby enabling them to apply such skills in daily life and to continue learning and communicating using the written word. Literacy represents a potential for further intellectual growth and contribution to the economic-socio-cultural development of a society.

Illiteracy rates indicate the extent of need for policies and efforts in organizing literacy programmes and quality primary education.

Data required: The number of literates and illiterates aged 15 years and over.

Data sources: Primarily population and household censuses; sample surveys. Types of disaggregation: This indicator can be calculated by sex (total, male and female), geography (national, urban and rural) and age group (aged 15 years and over by five-year age groups or combinations of five-year age groups).

Formula

$$LR_a^t = \frac{L_a^t}{P_a^t} * 100 \quad IR_a^t = \frac{IL_a^t}{P_a^t} * 100$$

where:

LR_a^t = Literacy rate of age group a in a year t

L_a^t = Literate population of age group a in a year t

P_a^t = Population of age group a in a year t

IR_{15+}^t = Illiteracy rate of age group a in a year t

IL_{15+}^t = Illiterate population of age group a in a year t

and:

$$LR_a^t + ILR_a^t = 100\%$$

Interpretation: A high literacy rate (or low illiteracy rate) indicates a wide coverage of the primary education system and/or literacy programmes in that a large proportion of the population has acquired the ability of using the written word in daily life and to continue learning. It is common practice to present and analyze literacy rates together with the absolute number of adult illiterates as improvements in literacy rates may sometimes be accompanied by increases in the illiterate population due to the changing demographic structure.

6.2 Calculating the number of literates and illiterates

Definition: The number of illiterates is defined as the number of persons who cannot both read and write with understanding a short simple statement on their every day life. The number of literates is defined as the number of persons who can both read and write with understanding a short simple statement on their every day life. Both read and write with understanding a short simple statement on their every day life.

Purpose: This indicator identifies the size and, if possible, characteristics of the illiterate and literate populations within a given country or territory. The illiterate population should be targeted for policies and efforts in expanding literacy programmes.

Data required: UN population estimates for persons aged 15 years and over;

Data sources: Primarily population and household censuses; sample surveys.

Types of disaggregation: This indicator can be calculated by geography (national, urban and rural) and age group (15 years and older by five-year age groups or combinations of five-year age groups).

$$LP_a^t = LR_a^t * UNP_a^t \text{ or } IP_a^t = IR_a^t * UNP_a^t$$

where:

LP_a^t = Literate population of age group a in year t

LR_a^t = Literacy rate of age group a in year t

UNP_a^t = UN population estimate of age group a in year t

IP_a^t = Illiterate population of age group a in year t

IR_a^t = Illiteracy rate of age group a in year t

$$LR_a^t + ILR_a^t = 100\%$$

Interpretation: The higher the illiterate population of a country, the more need there is to expand primary education and adult literacy programmes. Data by age group and geography help to reveal sections of the population most in need of education and literacy programmes. Policies should target priority population groups of a particular gender and age group.

6.3 Calculating the literacy Gender Parity Index (GPI)

Definition: Ratio of the female-to-male literacy/illiteracy rates.

Purpose: This indicator measures the parity in literacy/illiteracy between males and females for a given country or territory. The imparity of a gender should be targeted for policies and efforts in expanding literacy programmes.

Data required: Literacy and illiteracy rates disaggregated by sex. Data sources: UIS literacy data.

Types of disaggregation: This indicator can be calculated by geography (national, urban and rural) and age group (aged 15 years and over by five-year age groups or combinations of five-year age groups).

Formula:

$$GPI_a^t = \frac{LR_{a,f}^t}{LR_{a,m}^t}$$

$$GPI_a^t = \frac{LIR_{a,f}^t}{LIR_{a,m}^t}$$

where:

$$LR_{a,f}^t = \text{Female Literacy rate of age group } a \text{ in year } t$$

$$LR_{a,m}^t = \text{Male Literacy rate of age group } a \text{ in year } t$$

$$LIR_{a,f}^t = \text{Female Illiteracy rate of age group } a \text{ in year } t$$

$$LIR_{a,m}^t = \text{Male Illiteracy rate of age group } a \text{ in year } t$$

Interpretation: A GPI of 1 indicates parity between sexes. A GPI under 1 indicates parity in favour of males, and a GPI over 1 indicates parity in favour of females.

6.4 Calculating the percentage of literates or illiterates that are female(% female)

Definition: The number of female literates or illiterates as a percentage of total literates or illiterates.

Purpose: This indicator shows the gender composition of the total population in a given country or territory in a given year. It allows for expansion to literacy programmes to be more targeted.

Data required: The number of literates and illiterates by sex.

Data sources: UIS literacy data.

Types of disaggregation: This indicator can be calculated by geography (national, urban and rural) and age group (15 years and older by five-year age groups or combinations of five-year age groups).

Formula:

$$\%F_a^t = \frac{LP_{a,f}^t}{TLP_a^t} \quad \text{or} \quad \%F_a^t = \frac{IP_{a,f}^t}{TIP_a^t}$$

where:

$$LP_{a,f}^t$$

Female literate population of age group a in year t

$IP_{a,f}^t$ Female illiterate population of age group I a in year t

TLP_a^t Total literate population of age group a in year t = $LP_{a,f}^t + LP_{a,m}^t$

TIP_a^t = Total illiterate population of age group a in year = $LP_{a,f}^t + IP_{a,m}^t$

$LP_{a,m}^t$ Male Literate population of age group a in year t

$IP_{a,m}^t$ Male Illiterate population of age group a in year t

Interpretation: Percentage of female literates or illiterates approaching 50% indicates gender parity in the composition of the total population. A value of greater than 50% reveals that more women than men are literate or illiterate in a given population

- **Agency Responsible for Calculating Human Development Index**

The origins of the HDI are found in the annual Human Development Reports produced by the Human Development Report Office of the United Nations Development Programme (UNDP).

The differences across the world are very large, ranging from the highest values in North America, Europe, Japan, and Oceania to the lowest in central Africa.

The HDI is used to develop a global human development ranking.

This annual classification makes it possible, on the one hand, to follow the development of a country over time and, on the other, to compare its situation with that of other countries. In this way, governments can better understand their growth options and international aid can be allocated judiciously.

- **History of the HDI and significance it for development of a country in different respects - economically, socially, etc.**

Since 1990, the United Nations Development Program (UNDP) has been implementing a human development program by applying an approach that is not confined to national income alone but is focused on people and their ability to achieve the full potential to lead a healthy, productive and creative life. The first human development report published in 1990, "People are the real wealth of nations," began a new approach to thinking about development (Ferjan, 2014). To date, 29 Human Development Reports (HDRs) have been published, which are the result of the calculation of the Human Development Index (HDI) for each country, based on which the ranking of countries in the world is carried out. The HDI is a widely cited statistic that is commonly used as a measure of well-being in different countries (Engineer, King, & Roy, 2008).

In this paper is presented perspective view of human development in the Western Balkans, with a series of socio-economic implications for the development policy of the countries under observation.

The main significance of the research stems from the fact that in the countries of the Western Balkans are identified factors at the beginning of the transition period were often marginalized in the creation of macroeconomic policies, but in recent years there have been more positive developments in that regard.

- **ANALYSIS OF HDI TRENDS IN THE PERIOD 1990–2017**

Comparing the HDI values by years (1990, 2000, 2010, 2012, 2014, 2015, 2016 and 2017), a linear increase in the HDI value can be observed. At the global level, from the beginning of the introduction of the HDI to the end of 2017 (HDI 0.728), we have an increase of 21.7% compared to 1990 (0.598) (Table). This growth for countries belonging to the Very High Human Development is 12.5%, for the High Human Development countries 32.6%, for Medium Human Development countries 39.6% and Low Human Development countries 10.2%. HDI growth rates vary by state. It can be concluded that the countries that belong to the Medium Human Development group have achieved the highest growth, but this growth is insufficient to transform them into more development HDI levels (Figure).

Table . Human Development Index Trends, 1990–2017 (UNDP, 2018d)

World/Human development groups	Human Development Index (HDI) – Value							
	1990	2000	2010	2012	2014	2015	2016	2017
World	0.598	0.642	0.698	0.709	0.718	0.722	0.726	0.728
Very high human development	0.787	0.831	0.873	0.880	0.887	0.890	0.892	0.894
High human development	0.571	0.635	0.718	0.732	0.745	0.750	0.754	0.757
Medium human development	0.462	0.523	0.596	0.613	0.627	0.634	0.641	0.645
Low human development	0.351	0.387	0.472	0.468	0.495	0.498	0.501	0.504

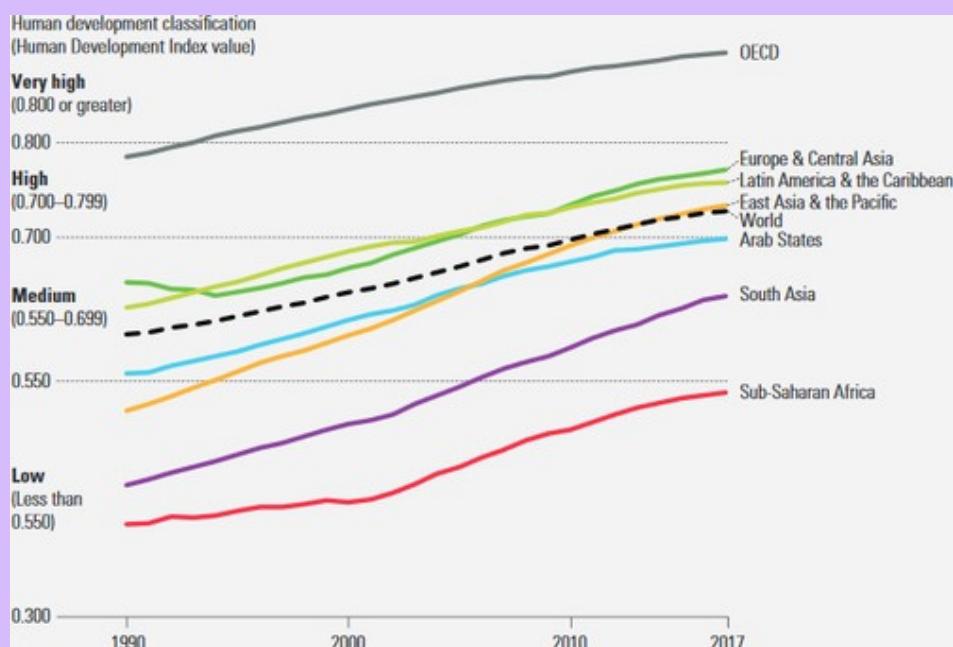


Figure Human Development Index values, by country grouping, 1990–2017 (UNDP, 2018e)

From the above chart, it can be noted that in the period 1990–2017. The growth of the world HDI was 21.7%. South Asia was the fastest growing region with 45.3%. East Asia and the Pacific follow it by 41.8% and sub-Saharan Africa with 34.9%.

The countries of Sub-Saharan Africa are still in the low human development group, although they have approached the Medium Human Development group.

South Asia is a member of the Medium Human Development Group, while East Asia and the Pacific are in the period 1990–2017 moved from Low Human Development to a group of countries with High Human Development. States of the Organization for Economic

Co-operation and Development (OECD) recorded an increase of HDI in the mentioned period by 14.0%. This growth rate is lower than the growth rate of the countries listed, but it should be noted that the OECD countries are in the very high human development group and are approaching the maximum value of HDI. In particular, it should be kept in mind that different HDI components

have their limits. There is a biological limit of life expectancy, and years of schooling and enrollment rates cannot grow unlimited, while income is the only integral part of the HDI that could continue to grow, but revenue

growth slows down as the economy matures. It is important to note that the amount of 75,000 dollars per capita has been designated as an upper limit because it has been demonstrated that it practically does not benefit from human development and well-being from annual income per capita above \$ 75,000. Factors that caused lower HDI growth rates in the period 1990–2017 are various armed conflicts in some countries and regions

(for example, Libya, which ranks 82nd in HDI in 2012 to 108th in 2017, the Syrian Arab Republic from 128th place in 2012) to 155th in 2017, Yemen from 158th place in 2012 to 178th place in 2017), various epidemics (HIV/ AIDS in Sub-Saharan Africa caused a dramatic decline in life expectancy), natural catastrophes, climate change, or economic crisis (the 2008 World Economic Crisis, hyperinflation, the introduction of market mechanisms in postsocialist countries a, oscillations in food prices, etc.).

Due to the fact of the group as mentioned above of factors, some countries suffered severe losses, losing in the years that everything has been done for decades.

There are 1,650 million poor in the world living in poor living conditions (short life expectancy), without access to

education and health care systems. One of the major threats to social development is a long-term vulnerability. If we remove the causes of weakness, then everyone will be able to participate in advancement, which will make social development more just and sustainable. One of the

major threats to social development is a long-term vulnerability. If we remove the causes of weakness, then everyone will be able to participate in advancement, which will make social development more just and sustainable (UNDP, 2014).

Despite these challenges, countries in these regions have recovered from the losses caused by these factors.

Table : Average annual HDI growth – % (UN, 2017)

World/Human development groups	Average annual HDI growth – %			
	1990–2000	2000–2010	2010–2017	1990–2017
World	0.72	0.84	0.60	0.73
Very high human development	0.55	0.50	0.34	0.48
High human development	1.06	1.24	0.76	1.05
Medium human development	1.25	1.32	1.13	1.24
Low human development	1.00	1.99	0.93	1.35

Observing the increase in HDI ranking by countries in the period 2012–2017 the highest increase was recorded in Ireland (progress for 13 places), and Botswana, the Dominican Republic and Turkey (progress for eight positions). The most significant drop was recorded by the Syrian Arab Republic (fall by 27 places), Libya (fall by 26 places) and Yemen (fall by 20 places) (UNDP, 2018f).

Alternative Approach

MEASURING LITERACY

• An Alternative approach to measure Literacy Rate

- Though Human Development term is a little complex way to formulise in terms of the available data, There can be lots and lots of other ways of figuring out literacy rate.
- Today literacy rate is measured by simple survey process, which presents to us unverified data through genuine college and school certificates that too about only few aspects of whether some one has attended a particular level of class and not their distinction, marks, grades etc.
- Today one is said to be literate just if they can read or write, but in this fast paced world this can't be the main criteria we judge people on educational qualification.
- Since just reading and writing does not bring us Human development
- Therefore Alternative approaches can be to directly contact school and colleges to get a clearer picture of how many people attended passed failed, their distinction, grades, field of study, enrollment, de-enrollment, class of students going to a particular level, field of education and other things, that to in pure and authenticated form

- When we survey common people we only get one person data or say a few families data. But when we just survey a school we get thousands and thousands of greater and better quality data.
- And through this data we can predict in a better way the quality of life they might be living along onto their way to life ahead.
- Schools are the basic building block of all the parameters what we find to measure HDI. So it is important to take into account this very sincerely to evolutise more effectively and frequently by collecting more quality and quantity of surveying data in order to enhance the quality of education, ways of increasing enrollment, attracting more students from a specific background, place, upto particular level and field of education and get them literated in true aspects to let them live more prosperous life via their own hard works.
- Some common ways can be to find out through tracking Aadhar card in our country to trace out the school changes and qualification, simultaneously their percentages and overall grades.
- And then in turn finding out what the person is doing and geeting paid doing a particular job salaried this much through PAN cards and all.

- And more precisely we can analyse the data of well-being-ness of people by studying from a given place school, background and field of study.
- Which will in turn also let us find out the recent trends of fields chosen out by candidates and higher paying fields and jobs eventually focusing and improving those sectors of education in order for the country to develop more effectively
- Like this there can many other way we can get a variety of data and through this we can better judge the human development parameter and other parameteres of predicting happiness and fulfillment of in life

Limitations

LITERACY AS MEASURE

• **Limitations of Human Development Indicator - Education**

- Simple questions such as “can you read and write?” frame literacy as a skill you either possess or do not when, in reality, literacy is a multi-dimensional skill that exists on a continuum.
- Self-reports are subjective, in that the question is dependent on what each individual understands by “reading” and “writing”. The form of a word may be familiar enough for a respondent to recall its sound or meaning without actually ‘reading’ it. Similarly, when writing out one’s name to convey written ability, this can be accomplished by ‘drawing’ a familiar shape rather than writing in an effort to produce a written text with meaning.
- In many cases surveys ask only one individual to report literacy on behalf of the entire household. This indirect reporting potentially introduces further noise, in particular when it comes to estimating literacy among women and children, since these groups are less often considered ‘head of household’ in the surveys.

- Similarly, inferring literacy from data on educational attainment is also problematic, since schooling does not produce literacy in the same way everywhere:
Proficiency tests show that in many low-income countries, a large fraction of second-grade primary-school students cannot read a single word of a short text; and for very few people in these countries going to school for four or five years guarantees basic literacy.
- HDI reflects long-term changes (e.g. life expectancy, literacy) and may not respond to recent short-term changes.
- In-turn higher national wealth does not indicate welfare. Literacy may not necessarily increase economic welfare; it depends on how skillful people are. For example, if a country spends more on education spending – this is reflected in higher Literacy, but welfare could actually be lower.
- Also, higher literacy rate may hide widespread inequality within a country. Some countries with higher real literacy have high levels of inequality (e.g. America, Saudi Arabia)
- Many indices that are used to calculate development are averages for the whole population. This method means that one cannot see any regional inequalities there may be within a population.

- However, HDI can highlight countries with similar literacy level but different levels of economic development.
- It is still only provides a fairly limited indication of social development – only health and education are covered – there are many other ways of measuring health and education.
- Even at a conceptual level there is lack of consensus – national definitions of literacy that are based on educational attainment vary substantially from country to country. For example, in Greece people are considered literate if they have finished six years of primary education; while in Paraguay you qualify as literate if you have completed two years of primary school.
- Wide divergence within countries. For example, countries like China and Kenya have widely different literacy scores depending on the region in question. (e.g. north China more backward than south-east)
- Economic welfare depends on several other factors, such as –threat of war, levels of pollution, access to clean drinking water e.t.c.
- Using a single indicator means it is not possible to judge the whole development level of a country. A combination of indicators in the form of an index may offer a more holistic view of a country's development.

Criticism

LITERACY AS MEASURE

• **Criticism of the Human Development Index (HDI)**

- For estimating literacy rate, expected years of schooling by children at the entrance age is used which overstates the literacy rate as in many countries (including India) many children who join primary school later drop out at some stage.
- In constructing human development index, role of quality has been ignored. For example, there is a big difference between extra year of life for a healthy well-educated person and extra one year life for a person who is bed-ridden and has limited capability to do work.
- Similarly, in constructing HDI only the number of years of schooling is taken into account while the quality of education also matters a lot for good living. Due to lack of adequate data about quality of health and education, it is not incorporated in the construction of HDI. But without the quality of health and education being considered, HDI does not represent the true index of human development.

- To come up with a more accurate analysis of a country's literacy, other factors such as employment opportunities, empowerment movement, and feeling of job security should be considered in the index calculations.

Conclusion

CONFERANCES-MEASURES
TAKEN

Literacy is a key skill and a key measure of a population's education. However, measuring literacy is difficult because literacy is a complex multi-dimensional skill.

For decades, most countries have been measuring literacy through yes/no, self-reported answers to a single question in a survey or census along the lines of "can you read and write?".

These estimates provide a basic perspective on literacy skills. They tell us something meaningful about broad changes in education in the long run, since the changes across decades are much larger than the underlying error margins at any point in time. But they remain insufficient to fully characterise literacy skills and understand challenges ahead.

As populations become more educated, we need more accurate instruments to measure abilities – asking people whether they can read and write is insufficient to meaningfully detect differences in the way people apply skills for work and life.

Efforts have been made in recent years, both at national and international levels, to develop standardised, tailor-made survey instruments that measure literacy skills more accurately through tests. Several countries already implement these tests, but we will need to wait several years for these new instruments to become the norm for measuring and reporting literacy rates internationally.

The concept of human development had not changed since 1990 when it was also defined in the first Human Development Report. It has remained focused on the lives, freedoms, and abilities of people. The success in the advancement of human development must be seen through the lives of people living and the skills they have.

By analyzing the HDI, we conclude that among the 189 countries observed there are significant differences in the level of Life expectancy at birth, Mean Years of Schooling and Gross national income (GNI) per capita. It does not necessarily mean that countries with the maximum value of certain factors constituting the HDI have a higher HDI value. This is because HDI represents the geometric mean of all three elements that together make up HDI. In the period 1990–2017, at the global level, we have positive HDI growth, as a result of positive movements of all elements.

As for the countries of the Western Balkans, they are in the group High Human Development and High Human Development, which is not a minor result given the crisis year at the end of the 20th and the beginning of the 21st century.

All the countries of the Western Balkans have a permanent and mild, but also a continuous increase in HDI indicators, which will lead to further progress in human development.

In order to ensure the comprehensive growth of all HDI components, the countries of the Western Balkans must continue to adopt global strategies and laws, realistic action plans, roadmaps for their implementation and the use of knowledge that encompasses a set of skills, competencies, and interests aimed at expanding people's choices and general welfare. For future investigations of different factors influence on the HDI, there is need for more advanced approach and techniques like fuzzy systems or artificial neural networks which has capabilities of multivariable optimization with different parameters

But the important drawback of human development index (HDI), is that it is of composite character which makes it an imperfect indicator of development or well-being of the people. If these three components are highly correlated to each other, then a single one will serve the purpose of comparing the levels of development and well-being of the people of different countries.

Reference

INFO SOURCES

Education

Indicators Used

<https://revisesociology.com/category/global-development/indicators-of-development/>

Additionals

https://www.educationforallinindia.com/page104.htm#Indicator_11

Quality

measurement <https://learningportal.iiep.unesco.org/en/issu-e-briefs/monitor-learning/quality-and-learning-indicators>

<https://www.vedantu.com/commerce/human-development-index>

Alternative approach

www.isical.ac.in/

<https://onlinelibrary.wiley.com/doi/full/10.1002/brb3.1755>

Limitations

<https://ourworldindata.org/how-is-literacy-measured>

Appendix

AFTERWORDS

APPENDIX I

List of countries and territories surveyed

1	Afghanistan	47	Costa Rica
2	Albania	48	Côte d'Ivoire
3	Algeria	49	Croatia
4	American Samoa	50	Cuba
5	Andorra	51	Cyprus
6	Angola	52	Czech Republic
7	Anguilla	53	Democratic People's Republic of Korea
8	Antigua and Barbuda	54	Democratic Republic of the Congo
9	Argentina	55	Denmark
10	Armenia	56	Djibouti
11	Aruba	57	Dominica
12	Australia	58	Dominican Republic
13	Austria	59	Ecuador
14	Azerbaijan	60	Egypt
15	Bahamas	61	El Salvador
16	Bahrain	62	Equatorial Guinea
17	Bangladesh	63	Eritrea
18	Barbados	64	Estonia
19	Belarus	65	Ethiopia
20	Belgium	66	Falkland Islands (Malvinas)
21	Belize	67	Fiji
22	Benin	68	Finland
23	Bermuda	69	France
24	Bhutan	70	French Guiana
25	Bolivia	71	French Polynesia
26	Bosnia and Herzegovina	72	Gabon
27	Botswana	73	Gambia
28	Brazil	74	Georgia
29	British Virgin Islands	75	Germany
30	Brunei Darussalam	76	Ghana
31	Bulgaria	77	Gibraltar
32	Burkina Faso	78	Greece
33	Burundi	79	Grenada
34	Cambodia	80	Guadeloupe
35	Cameroon	81	Guam
36	Canada	82	Guatemala
37	Cape Verde	83	Guinea
38	Cayman Islands	84	Guinea-Bissau
39	Central African Republic	85	Guyana
40	Chad	86	Haiti
41	Chile	87	Honduras
42	China	88	Hong Kong (SAR of China)
43	Colombia	89	Hungary
44	Comoros	90	Iceland
45	Congo	91	India
46	Cook Islands	92	Indonesia

Appendix I

93	Iran (Islamic Republic of)	140	New Zealand
94	Iraq	141	Nicaragua
95	Ireland	142	Niger
96	Israel	143	Nigeria
97	Italy	144	Niue
98	Jamaica	145	Northern Mariana Islands
99	Japan	146	Norway
100	Jordan	147	Occupied Palestinian Territory
101	Kazakhstan	148	Oman
102	Kenya	149	Pakistan
103	Kiribati	150	Palau
104	Kuwait	151	Panama
105	Kyrgyzstan	152	Papua New Guinea
106	Lao People's Democratic Republic	153	Paraguay
107	Latvia	154	Peru
108	Lebanon	155	Philippines
109	Lesotho	156	Pitcairn
110	Liberia	157	Poland
111	Libyan Arab Jamahiriya	158	Portugal
112	Lithuania	159	Puerto Rico
113	Luxembourg	160	Qatar
114	Macao (SAR of China)	161	Republic of Korea
115	Madagascar	162	Republic of Moldova
116	Malawi	163	Reunion
117	Malaysia	164	Romania
118	Maldives	165	Russian Federation
119	Mali	166	Rwanda
120	Malta	167	Saint Helena
121	Marshall Islands	168	Saint Kitts and Nevis
122	Martinique	169	Saint Lucia
123	Mauritania	170	Saint Pierre and Miquelon
124	Mauritius	171	Saint Vincent and the Grenadines
125	Mayotte	172	Samoa
126	Mexico	173	San Marino
127	Micronesia (Federated States of)	174	Sao Tome and Principe
128	Mongolia	175	Saudi Arabia
129	Montserrat	176	Senegal
130	Montenegro	177	Serbia
131	Morocco	178	Seychelles
132	Mozambique	179	Sierra Leone
133	Myanmar	180	Singapore
134	Namibia	181	Slovakia
135	Nauru	182	Slovenia
136	Nepal	183	Solomon Islands
137	Netherlands	184	Somalia
138	Netherlands Antilles	185	South Africa
139	New Caledonia	186	Spain

APPENDIX II

UIS Literacy Questionnaire



Country:

Literacy Statistics Questionnaire 2008

1. Please return copy of the questionnaire before Day/Month/Year by:

- UIS website: www.uis.unesco.org;
- E-mail: survey@uis.unesco.org;
- Fax: (1-514) xxx-xxxx or _____
- Mail: UNESCO Institute for Statistics
C.P. 6128
Succursale Centre-ville
Montréal, QC H3C 3J7
CANADA

2. If you have any queries concerning the questionnaire, please do not hesitate

to contact xxxxxx by e-mail:

survey@uis.unesco.org; Tel: (1-514) xxx-xxxx or Fax: (1-514) xxx-xxxx

3. Please use the following symbols when completing the questionnaire:

a = category is not applicable

m= data missing (or not available)

n = quantity nil

x = data included in another category (to be indicated in a footnote)

* =provisional or estimated figure

Please provide the details below of the person completing the questionnaire.

Family name: Personal (or first) name: Job

title (or position): Service,

division or sector (if any): Organization:

..... Nature: Address:

..... City: Country:

..... Postal Code: Telephone: country

code: area code: number: ext: Fax: country code:

..... area code: number:

Mobile: country code: area code: number:

E-mail: Website:

It is important that all parts of the questionnaire are completed in full.

1. Is a Direct Assessment Survey used to measure literacy skills: 1 Yes 2 No
If yes, then go to Section D.

2. UIS criteria for selecting literacy data (dichotomous variable):

1. A “direct question” to assess literacy must comprise part of the methodology.
2. Data must be provided in the format required by UIS.
3. Educational attainment data will not be accepted by UIS as a proxy measure for literacy.

Please refer to the UIS website www.uis.unesco.org for more complete information about the UIS data selection criteria.

Section A: Source of Literacy Statistics

A1 Please indicate the source of the literacy data:

A1.1 Census of Population (please specify):

- 1 ‘De jure’ population (based on citizenship or permanent residents)
- 2 ‘De facto’ population (including foreigners, tourists and other temporary visitors)

A1.2 Sample survey (please specify):

- 1 Multiple Indicator Cluster Survey (MICS)
- 2 Labour Force Survey (LFS)
- 3 Other (please specify): _____

A1.3 Other (please specify): _____

A2 What is the reference year of the data source indicated in A1? _____

A3 Are there any specific population groups or geographic regions excluded from the coverage of the data source indicated in A1 (i.e. populations in remote areas or the non-national population)?

- 1 Yes
- 2 No

If **yes**, what is the approximate proportion (%) of the population that is excluded:

- 1 Less than 1% of the national total population
- 2 Between 1% and 5% of the national total population
- 3 More than 5% of the national total population

A4 Who was the respondent to the census/survey indicated in A1?

- 1 The head of the household only
- 2 All individuals within a household
- 3 Other (please specify): _____

Section B: Literacy Data

B1 What is the definition of literacy that is used?

B2 Please specify the literacy question(s) used in the census/survey.

Appendix II

B3 Please complete Tables B3.1, B3.2 and B3.3 as indicated

Table B3.1 Total (Urban + Rural) Number of Literate and Illiterate Persons by Sex and Age Group

Age group	Total			Male			Female		
	Total	Literate	Illiterate	Total	Literate	Illiterate	Total	Literate	Illiterate
10-14									
15-19									
20-24									
25-29									
30-34									
35-39									
40-44									
45-49									
50-54									
55-59									
60-64									
65-69									
70-74									
75-79									
80-84									
85+									
Age									
unknown									
Total population aged 10+									

B3.1.1 For any provisional or estimated figures (*) please explain how the estimate was produced. Attach a separate descriptive page if necessary.

Table B3.2 Number of Literate and Illiterate Persons in Urban Areas by Sex and Age Group

Age group	Total			Male			Female					
	Total	Literate	Illiterate	Unspecified	Total	Literate	Illiterate	Unspecified	Total	Literate	Illiterate	Unspecified
10-14												
15-19												
20-24												
25-29												
30-34												
35-39												
40-44												
45-49												
50-54												
55-59												
60-64												
65-69												
70-74												
75-79												
80-84												
85+												
Age unknown												
Total population aged 10+												

B3.2.1 Please provide the definition of “urban area”. If you are unable to provide data by urban area, please indicate the reasons for not being able to do so?

Table B3.3 Number of Literate and Illiterate Persons in Rural Areas by Sex and Age Group

Age group	Total			Male			Female					
	Total	Literate	Illiterate	Unspecified	Total	Literate	Illiterate	Unspecified	Total	Literate	Illiterate	Unspecified
10-14												
15-19												
20-24												
25-29												
30-34												
35-39												
40-44												
45-49												
50-54												
55-59												
60-64												
65-69												
70-74												
75-79												
80-84												
85+												
Age unknown												
Total population aged 10+												

B3.3.1 Please provide the definition of "rural area". If you are unable to provide data by rural area, please indicate the reasons for not being able to do so?

Section C: Dissemination of Literacy Statistics

C1 Have these Literacy data results been published?

- 1 Yes
2 No

If yes, please give references:

C2 Are the literacy data available on a website? If yes, please indicate the link below:

C3 Are the literacy data available for analysis?

- 1 Yes
2 No

C4 If known, please indicate the source and date of your next census/survey from which your next Literacy Statistics will be produced:

Name: _____

Date: _____

Section D: Direct Assessment Survey of Literacy Skills

The UIS is undertaking an inventory of existing literacy assessments worldwide in order to better understand the extent to which they are being used. The UIS is also interested in presenting these data on a global basis for the data user community. The purpose of this section is to collect information and data about your countries most recent literacy assessment.

D1 Name of the Literacy Assessment Survey: _____

D2 Reference year (YYYY) of the literacy assessment: _____

D3 Please indicate all the skills that were tested:

—

- 1 Numeracy 2 Reading 3 Writing 4 Information and Communication Technology Literacy
5 Other (please specify): _____

D4 How many levels of literacy skills are included in the assessment analysis? _____

D5 Website where information and data may be obtained: _____

D6 Please send an electronic version of your summary report (including description, methodology and summary data tables) to: survey@uis.unesco.org. If an electronic version is not available, please send a paper copy to the address indicated on page 1 of this questionnaire.

The End

THANK YOU