

Version: 24-Aug-2021

## Purpose

The Jobs Indicators Benchmarking tool helps users conduct a Jobs Diagnostics Guided Enquiry by offering comparisons with country groupings and peers. The tool presents key Jobs indicators including employment status, employment types, employment by sector and occupation for men and women, rural and urban, youth and adult workers, and those with more and less education. The tool uses nationally representative and harmonized household survey data (World Bank I2D2). The output of the tool presents basic Labor Market indicators, tables, and charts, for use in Jobs Diagnostics.

## Data

Nationally representative and harmonized survey data (World Bank I2D2) as produced by the Global Jobs Indicators Database (JOIN).

Source: <https://datacatalog.worldbank.org/dataset/global-jobs-indicators-database>

Accessed: 23-Aug-2021

Note that results presented here may differ from JOIN due to rounding errors when generating the CSV data file accompanying this tool.

Jobs Diagnostics Guidelines: [Web Link](#)

Jobs Diagnostics Resource Site: [Web Link](#)

Jobs Diagnostics Guided Enquiry Annex 1: [Web Link](#)

## Step-by-Step

Follow the Step-by-Step instructions from sheet to sheet:

Step 1	Select Country
Step 2	Select 2-4 years for Guided Enquiry and Review Data Quality
Step 3	Select Start and End Years for Growth Analysis and Benchmarking
Step 4	Select Comparison Countries and Years for Benchmarking
Step 5	Review Tables and Charts
Export	Export Results

## Color coding

**123-ABC** Cells filled by the tool and can be modified by the user

All other cells filled by the tool and CANNOT be modified by the user

123-ABC	Do not modify	123-ABC	Do not modify
123-ABC	Do not modify	123-ABC	Do not modify
123-ABC	Do not modify	123-ABC	Do not modify
123-ABC	Do not modify	123-ABC	Do not modify
123-ABC	Do not modify	123-ABC	Do not modify

## Password Protection

To prevent the user from inadvertently overwriting formulas, a password is used protect all sheets.

If it becomes necessary to revise the structure of the file, use these buttons:

NB! The password is 'GROWTH' and must not be changed as it is included in macros.

All sheets: Unprotect

All sheets: Protect

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## Documentation

No errors reported in structural check

The Jobs Indicators Benchmarking tool helps users conduct a Jobs Diagnostics Guided Enquiry by offering comparisons with country groupings and peers. The tool presents key Jobs indicators including employment status, employment types, employment by sector and occupation for men and women, rural and urban, youth and adult workers, and those with more and less education. The tool uses nationally representative and harmonized household survey data (World Bank I2D2). The output of the tool presents basic Labor Market indicators, tables, and charts, for use in Jobs Diagnostics.

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## Definitions & Concepts

### Guided Enquiry for Job Diagnostics - Questions

See Guide Enquiry Questions Annex 1:

[Web Link](#)

#### Overall Context

- 1.1. How does the country's demography (youthful, aging) affect its jobs challenges?
- 1.2. What share of the population is working age
- 1.3. What share of the working age population is in the labor force and how does this compare with other countries?
- 1.4. What is the employment rate (share of labor force that is employed)?
- 1.5. What share of employment is salaried ("wage employment" in LFS) and how does this compare with other countries?
- 1.6. What is the sectoral composition of employment?
- 1.7. Is the country urbanizing? What is the change in the share of the population in the primary city, other urban areas, and rural?

#### Profile of Jobs

##### Question 1: What is the profile of jobs and work in the economy?

- 1.1. What share of the working age population is employed, unemployed, or inactive?
- 1.2. What share of those employed is in agriculture and non-agricultural employment?
- 1.3. What is the share of those employed in agriculture and non-agricultural employment is self-employed, waged employees, unpaid family workers or employers?
- 1.4. What share of wage employment outside of agriculture is formal or informal?
- 1.5. What share of formal wage employment outside of agriculture is in the public or in the private sector?

#### Labor Supply

##### Question 2: What is the trend in labor supply and how is it related to the country's demography?

- 2.1. What share of the working age population participates in the labor force and are there important variations in participation over time overall and by population sub-groups?
- 2.2. What are the trends within the active labor force (employed and unemployed) overall and by population sub-groups?

Footnote: Data and sampling permitting, population sub-groups include age (youth vs adult), gender (men vs women), area (urban vs rural), regional disaggregation, education as well as combinations of the sub-groups, i.e. area and gender or area, gender and age.

#### Employment

##### Question 3: What are the trends in employment?

- 3.1. What types of employment do workers hold, are their jobs formal, and how is this changing over time, by population sub-groups and sectors?
- Footnote: Different types of employment include self-employment, wage work, employer or unpaid.
- 3.2. Which sectors employ workers and what are the variations over time and by population sub-groups?
- 3.3. Which type of occupations do workers hold and how do they change over time and by population sub-groups?

#### Education

##### Question 4: What are the trends in education and how does it affect how people work?

- 4.1. How has the educational attainment of the working age population changed over time and by population sub-groups?
- 4.2. At what ages do people leave school to start working and what is the quality of those jobs?

#### Earnings

##### Question 5: How much do workers earn from work and how do labor market outcomes compare across households?

- 5.1. What is the wage distribution by sectors, occupations, education, and population sub-groups and how does it change over time?
- 5.2. How many hours do workers work on average per week and are there changes over time and by sectors, education, formality type of work and population sub-group?
- What share of workers hold more than one job?

Footnote: Earnings are measured in Real Monthly or Hourly Wages (USD, base 2011) PPP adjusted.

### General definition of terms

Term	Definition
<b>Age dependency</b>	Following World Development Indicators (WDI) Age dependency ratio is the ratio of dependents, e.g. people younger than 15 or older than 64, to the working-age population aged 15-64. Note that Dependency ratios capture variations in the proportions of children, elderly people, and working-age people in the population that imply the dependency burden that the working-age population bears in relation to children and the elderly. But dependency ratios show only the age composition of a population, not economic dependency. Some children and elderly people are part of the labor force, and many working-age people are not.
<b>Unemployment</b>	A person is defined as unemployed if he or she is presently not working but were available for a job in the previous week and is seeking a job. The formal ILO definition of unemployed includes in addition to availability and seeking a job the factor to be able to accept a job. This question was asked in a minority of surveys and is, thus, not incorporated in the present definition. In line with ILO, a person presently not working but waiting to start a new job is considered to be unemployed.
<b>Wage employment</b>	Following ICSE-93 a paid employee includes anyone whose basic remuneration is not directly dependent on the revenue of the unit they work for, typically remunerated by wages and salaries but may be paid for piece work or in-kind. Contrary to ICSE-93 continuous employment not used as additional criteria since data are often absent and due to country specificity.

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No errors reported in structural check

<b>Unpaid</b>	Following ICSE-93 unpaid workers include family workers and self-employment jobs in a market-oriented establishment. The establishment is operated by a person living in the same household. This person cannot be regarded as a partner at a level comparable to that of the head of the establishment because of their degree of commitment to the operations of the establishment in terms of working time or other factors.
<b>Employer</b>	Following ICSE-93 an employer is a business owner (whether alone or in partnership) with employees on a continuous basis. If the only people working in the business are the owner and contributing family workers, the person is not considered an employer (as has no employees) and is, instead classified as self-employed.
<b>Self-employment</b>	Following ICSE-93 own account or self-employment includes jobs where remuneration is directly dependent from the goods and service produced (where home consumption is considered to be part of the profits) and have not engaged any permanent employees to work for them on a continuous basis during the reference period. Contrary to ICSE-93 members of producers' cooperatives are not a category of their own but regarded as self-employed.
<b>Informal employment</b>	Informal employment is defined as wage employment without social security or a contract. Formal employment, on the contrary, is defined wage employed worker with either social security or a contract.
<b>Sectors [reduced sectors]</b>	The codes for the main job are given here based on the UN International Standard Industrial Classification (revision 3.1). In the case of different classifications (former Soviet Union republics, for example), recoding has been done to best match the ISIC-31 codes. Values in square brackets indicate the composed categories Agriculture, Industry, and Services. The main categories subsume the following codes: Agriculture, Hunting, Fishing (ISIC 01-05) [Agriculture] Mining (ISIC 10-14) [Industry] Manufacturing (ISIC 15-37) [Industry] Electricity and Utilities (ISIC 40-41) [Industry] Construction (ISIC 45) [Industry] Commerce (ISIC 50-55) [Services] Transportation, Storage and Communication (ISIC 60-64) [Services] Financial, Insurance and Real Estate (ISIC 65-74) [Services] Services: Public Administration (ISIC 75) [Services] Other Services (ISIC 80 -99) and unspecified categories or items [Services]
<b>Occupation</b>	Classifies the main job of any individual and is missing otherwise. As most surveys collected detailed information and then coded it, and the original data is not in the data bases, no attempt has been made to correct or check the original coding. The classification is based on the International Standard Classification of Occupations (ISCO) 88. In the case of different classifications re-coding has been done to best match the ISCO-88. Examples: Armed forces Clerks Craft workers Elementary occupations Machine operators Professionals Senior officials Service and market sales workers Skilled agricultural Technicians
<b>Underemployment</b>	Underemployment is defined as a situation when the hours of work of a person are insufficient in relation to an alternative employment situation in which the person is willing and available to engage and work less than 35 hours per week. Due to data restriction it is not always clear if the person wants to engage in additional work, a 35 hours of work per week is taken as a criterion.
<b>Excessive working hours</b>	This follows ILO definitions for excessive working hours. Most countries have statutory limits of weekly working hours of 48 hours or less, and the hours actually worked per week in most countries are less than the 48-hour standard established in ILO conventions. These limits serve to promote higher productivity while safeguarding workers' physical and mental health.
<b>Wages/Earnings</b>	Earnings are reported for wage workers only. The standard output reports median earnings, although all figures give additionally mean earnings and earnings for all workers. Disaggregations for the earnings are on the sectoral level and nominal earnings, deflated earnings are reported as well as deflated and PPP adjusted earnings using the consumer price index for deflation and the PPP conversion factor, private consumption as reported in the World Development Indicators. Earnings are winsorized from the 0 to the 1 and 100 to 99 percentile.
<b>Education</b>	The variable is country specific as not all countries require the same number of school years to complete a given level. Primary completed implies that one completed the stipulated primary education by undertaking an exam or test, where this exists. Otherwise, education refers to having completed the highest grade in this level of education. Post-secondary complete refers to teachers' colleges, one or two-year programs of technical nature and include university educational level. University education level refers to any higher education after successfully completing secondary level of education regardless of whether this was completed. This includes university, and graduate studies.

Variable Definitions

Section	Variable Name	Short Definition
<b>Variables in Data Sheet</b>		
Overall	Country Name	Name of the respective country.
Overall	Year of survey	Start year of survey.
Overall	Sample Description	Identifies the sample from which the results are drawn.
Overall	Country Code	3-Letter abbreviation as used in the World Bank. Source: CLASS.XLS <a href="https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups">https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups</a>
Country Group	Income Decile	Decile calculated from WDI data of GDP per capita, PPP (constant 2017 international \$) <a href="https://data.worldbank.org/indicator/ny.gdp.pcap.pp.kd">https://data.worldbank.org/indicator/ny.gdp.pcap.pp.kd</a>
Country Group	Income Level Over Time	Historical country classification by income in XLS format as defined by the World Bank. Source: OGHIST.XLS Puts the country in one of the four World Bank income level classifications: High income, upper middle income, lower middle income, and low income. <a href="https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups">https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups</a>
Country Group	Income Level Code Over Time	Abbreviations of the income level classification. <a href="https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups">https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups</a>

World Bank Group - Jobs Group  
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Country Group	Region	Regions as used in the World Bank. Source: CLASS.XLS <a href="https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups">https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups</a>
Country Group	Region Code	3-Letter abbreviation as used in the World Bank. Source: CLASS.XLS <a href="https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups">https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups</a>
Country Group	Lending Category	Lending categories as used in the World Bank. Source: CLASS.XLS <a href="https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups">https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups</a>
Country Group	Fragility and Conflict Affected (FCS)	Country classifications as used in the World Bank. Source: CLASS.XLS <a href="https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups">https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups</a>
Country Group	Demography Dividend	Country classifications as used in the World Bank. Source: CLASS.XLS <a href="https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups">https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups</a>
Country Group	Resource Rich	Country classifications as used in the World Bank. Source data file from: <a href="https://tcdata360.worldbank.org/indicators/7bc4251b?indicator=28157&amp;viz=choropleth&amp;years=2017">https://tcdata360.worldbank.org/indicators/7bc4251b?indicator=28157&amp;viz=choropleth&amp;years=2017</a>
Filters	Gender	Male shows the results for the male population and female shows the results for the female population. Some recorded as "Unknown" and are by default excluded from tables. Selections can be made in Pivot tables to include "Unknown".
Filters	Area	Location where the individual is living, rural or urban. Some recorded as "Unknown" and are by default excluded from tables. Selections can be made in Pivot tables to include "Unknown".
Filters	Age group	Five different age groups are provided:
Category	1. Children, aged 0-14	Individuals younger than 15 years.
Category	2. Youth, aged 15-24	Individuals older than 15 years and younger than 24 years. Part of Working Age Population 15-64.
Category	3. Adult, aged 25-64	Individuals older than 25 years and younger than 64 years. Part of Working Age Population 15-64.
Category	4. Elderly, aged 65+	Individuals 65 years and older.
Category	5. Unknown	Individual with no age provided. By default these are excluded from tables. Selections can be made in Pivot tables to include "5. Unknown".
Filters	Labor Force composition	Indicates those that are: Employed, Unemployed, or Not in Labor Force (LF)
Filters	Employment status	Indicates those that are: Paid employee, Self-employed, Non-paid employee, or Employer
Filters	Sector broad	Indicates those that are employed in: Agriculture, Industry, or Services and other
Filters	Sector detailed	Indicates those that are employed in one of the 10 Sectors [ISIC reduced sectors] listed above.
Filters	Occupation detailed	Indicates those that are employed in one of the 10 Occupations [ISIO] listed above.
Filters	Education Low High	Low educated shows the results for those with primary education or less and high educated shows the results for everyone who obtained a higher education.
Filters	Education level	The data uses four levels of education
Category	No education	Individuals that have no education
Category	Primary education	Individuals that have passed primary education levels but no higher education levels
Category	Secondary education	Individuals that have passed secondary education levels but no higher education levels
Category	Post-secondary education:	Individuals that have passed post-secondary education levels but no higher education levels
Filters	Private vs Public Sector	Coded for whether people are employed in private or public sector
Filters	Informality status	Presents the informality status as defined above. Missing cells are either due to missing information or if the individual is not in employment.
Population	Population	Weighted sum of the population for the individual with the indicated characteristics.
Population	Population (unknown gender)	Total number of inhabitants in the country where gender is unknown
Population	Population (unknown area)	Total number of inhabitants in the country where area is unknown (urban vs rural)
Population	Population (unknown age)	Total number of inhabitants in the country where the age is unknown
Population	Children (<15)	Number of children, aged 0-14 years
Population	Old Age (65+)	Number of elderly, aged 65+ years
Working Age	Working age (15-64)	Weighted sum of the working age population for individual with the indicated characteristics, aged 25-64
Labor Force	Employed	Weighted sum of the employed population for individual with the indicated characteristics, aged 15-64
Labor Force	Unemployed	Weighted sum of the unemployed population for individual with the indicated characteristics, aged 15-64
Age	Sum of age	Sum of age (to calculate average using next variable)
Age	Sum of age Resp	Sum of number of respondents used for age calculation
Education	Years of education	Sum of years of education (to calculate average using next variable)
Education	Years of education Resp	Sum of number of respondents used for education years calculation
Wage Earnings	Month Wage USD 2011 ppp adj	Sum of Real Monthly Wages (USD, base 2011), ppp adjusted (to calculate average using next variable)
Wage Earnings	Month Wage USD 2011 ppp adj Resp	Sum of number of respondents used for monthly wage calculation, age 15-64
Wage Earnings	Hour Wage USD 2011 ppp adj	Sum of Real Hourly Wages (USD, base 2011), ppp adjusted (to calculate average using next variable)
Wage Earnings	Hour Wage USD 2011 ppp adj Resp	Sum of number of respondents used for hourly wage calculation, age 15-64
Working Hours	Underemp less 35 hr per week	Number of people experiencing underemployment, <35 hours per week
Working Hours	Excessive work above 48 hr per wk	Number of people experiencing excessive working hours, >48 hours per week
Working Hours	Hours of work in last week	Sum of Hours of work in last week (to calculate average using next variable)
Working Hours	Hours of work in last week Resp	Sum of number of respondents used for working hours calculation, age 15-64
<b>Variables in Calculated in Pivot Tables</b>		
Population	Dependants (D <15 65+)	= 'Children (<15)' + 'Old Age (65+)'
Working Age	Dependency Ratio (D/WAP)	= 'Dependants (D <15 65+) / Working age (15-64)'
Working Age	Working Age Participation Ratio (WAP/P)	= 'Working age (15-64) / Population'
Working Age	Youth Dependency Ratio (<15/WAP)	= 'Children (<15)' / 'Working age (15-64)'
Working Age	Old Age Dependency Ratio (65+/WAP)	= 'Old Age (65+) / Working age (15-64)'
Labor Force	Labor Force (15-64)	= 'Employed + Unemployed'
Labor Force	Outside Labor Force (OLF 15-64)	= 'Working age (15-64)' - 'Labor Force (15-64)'

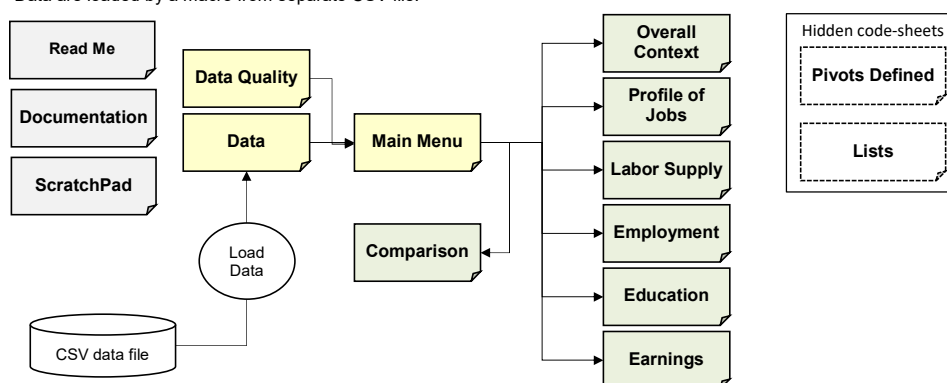
## Documentation

No errors reported in structural check

<b>Labor Force</b>	Labor Force Participation Ratio (E+U/WAP)	=Labor Force (15-64)/Working age (15-64)
<b>Labor Force</b>	Employment to Population Ratio (E/P)	=Employed/Population
<b>Labor Force</b>	Employment to WAP Ratio (E/WAP)	=Employed/Working age (15-64)
<b>Labor Force</b>	Employment Rate (E/E+U)	=Employed/Labor Force (15-64)
<b>Labor Force</b>	Unemployment Rate (U/E+U)	=Unemployed/Labor Force (15-64)
<b>Age</b>	Average Age	=Sum of age/Sum of age Resp'
<b>Education</b>	Average Years of Education	=Years of education/Years of education Resp'
<b>Wage Earnings</b>	Average Real Wages Monthly (USD, base 2011)	=Month Wage USD 2011 ppp adj/ Month Wage USD 2011 ppp adj Resp'
<b>Wage Earnings</b>	Average Real Wages Hourly (USD, base 2011)	=Hour Wage USD 2011 ppp adj/ Hour Wage USD 2011 ppp adj Resp'
<b>Working Hours</b>	Average Working Hours	=Hours of work in last week/Hours of work in last week Resp'
<b>Working Hours</b>	Underemployment Rate (<35 hr/week of E)	=Underemp less 35 hr per week/Employed
<b>Working Hours</b>	Overemployment Rate (>48 hr/week of E)	=Excessive work above 48 hr per wk/Employed

## Excel File Structure

This Excel file includes the following sheets, and the arrows illustrate the main flow of data between them. Data are loaded by a macro from separate CSV file.



## How To Add More Existing Data

**Great care must be taken when adding more existing data to this Excel file. Here are some steps to follow:**

### Generate CSV file

After creating the datasets for JOIN, run the STATA do-file called "JOIN\_Pivot\_csv". This automatically creates the Pivot csv file for all included datasets by region. At the end of the do-file, all regional files are appended to a global file. In case you only want to add new surveys, you can simply append those to the global file. Instead of preparing the data in a Pivot structure per region simply add the survey as a source and then append the results to the global file. Please check whether it is necessary to update the income deciles etc. that are stored in extra datasets. Keep JOIN\_Benchmarking\_Data.csv and Schema.ini files in the same folder as current tool file.

### Data Quality sheet

Copy in values for each survey from JOIN Indicators File. Make sure columns A-M stay the same because these are referenced in formulas elsewhere. Manually update the Survey Abbreviation and Type columns.

**TRUE** Make sure that there is only one survey in each year for each country (Country & Year is used as a unique identifier).

#### Add New Surveys

- If more surveys need to be added, please add rows to the bottom of the sheet, and then sort alphabetically and by year:
- \* On 'Data Quality' sheet, select the entire row 1438. This selection must include all columns including those that are hidden.
- \* Click to 'Copy' and then 'Insert Copied Data' above row 1438.
- \* Repeat for each additional survey to be added.
- \* Sort the Data Quality list alphabetically by country and year in increasing order. Make sure this sort does not include row 1439, which must always be at the bottom.

#### Delete Surveys

- \* If a survey must be removed from the tool, select its row and delete entire row.

### Update Data Sheet

Use "Load data" button from Main Menu sheet.

### Documentation

Check for errors, such as due to change in indicator names.

### Read Me

Update the date in cell J8 on the Read Me sheet.  
Update the date in cell J20 on the Read Me sheet.