

# Package ‘wcde’

October 30, 2021

**Title** Download Data from the Wittgenstein Centre Human Capital Data Explorer

**Version** 0.0.3

**URL** <https://guyabel.github.io/wcde/>

**BugReports** <https://github.com/guyabel/wcde/issues/>

**Description** Download and plot education specific demographic data from the Wittgenstein Centre for Demography and Human Capital Data Explorer <<http://dataexplorer.wittgensteincentre.org/>>.

**License** GPL-3

**Encoding** UTF-8

**LazyData** true

**RoxygenNote** 7.1.1

**Imports** dplyr, magrittr, tidyr, progress, countrycode, tibble, purrr, stringr, readr, forcats, utils

**Depends** R (>= 2.10)

**Suggests** spelling, knitr, rmarkdown, tidyverse, lemon

**VignetteBuilder** knitr

**Language** en-US

**NeedsCompilation** no

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edu_group_sum	<i>Education group sums</i>
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### Description

Cleans epop data, downloaded using the `wcde()` function, for summations of population by 4, 6 or 8 education groups.

### Usage

```
edu_group_sum(d = NULL, n = 4, strip_totals = TRUE, factor_convert = TRUE)
```

### Arguments

<code>d</code>	Data frame downloaded from the
<code>n</code>	Number of education groups (from 4, 6 or 8)
<code>strip_totals</code>	Remove total sums in epop column. Will not strip education totals if year < 2015 and n = 8 as past data on population size by 8 education groups is unavailable.
<code>factor_convert</code>	Convert columns that are character strings to factors, with levels based on order of appearance.

### Details

Strips the epop data set to relevant rows for the `n` education groups.

### Value

A tibble with the data selected.

**Examples**

```
library(tidyverse)
past_epop %>%
  filter(year == 2020) %>%
  edu_group_sum()
```

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every_other	<i>Select every other (nth) element from a vector</i>
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**Description**

Select every other (nth) element from a vector

**Usage**

```
every_other(x, n = 2, start = 1, fill = NULL)
```

**Arguments**

x	Vector to select (remove) elements from
n	Numeric value for the number of elements to skip. Default is 2, i.e. skips every second element
start	Numeric value to indicate which element of the vector to commence from.
fill	Character string to be used in place of skipped element. By default is NULL and hence skipped elements are removed rather than replaced.

**Value**

Vector with elements removed

**Examples**

```
every_other(x = letters)
every_other(LETTERS, n = 3, start = 6)
every_other(x = letters, fill = "")
```

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find_indicator	<i>Find available indicator code names in the Wittgenstein Centre Human Capital Data Explorer</i>
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**Description**

Find available indicator code names in the Wittgenstein Centre Human Capital Data Explorer

**Usage**

```
find_indicator(x)
```

**Arguments**

x                      Character string on key word or name related to indicator of potential interest.

**Value**

A subset of the wic\_indicators data frame with one or more of the indicator, description or definition columns matching the keyword given to x. Use the result in the indicator column to input to the get\_wcde function for downloading data.

**Examples**

```
find_indicator("education")
find_indicator("migr")
find_indicator("fert")
```

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get_wcde	<i>Download data from the Wittgenstein Centre Human Capital Data Explorer</i>
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**Description**

Downloads data from the Wittgenstein Centre Human Capital Data Explorer. Requires a working internet connection.

**Usage**

```
get_wcde(
  indicator = "pop",
  scenario = 2,
  country_code = NULL,
  country_name = NULL,
  include_scenario_names = FALSE
)
```

**Arguments**

indicator	One character string based on the indicator column in the wic_indicators data frame, representing the variable to be downloaded.
scenario	Vector of length one or more with numbers corresponding the scenarios. See details for more information. Defaults to 2 for the SSP2 Medium scenario.
country_code	Vector of length one or more of country numeric codes based on ISO 3 digit numeric values.
country_name	Vector of length one or more of country names. The corresponding country code will be guessed using the countrycodes package.
include_scenario_names	Logical vector of length one to indicate if to include additional columns for scenario names and short names. FALSE by default.

**Details**

If not country\_name or country\_code is provided data for all countries and regions are downloaded. A full list of available countries and regions can be found in the wic\_locations data frame.

indicator must be set to a value in the first column in the table below of available demographic indicators:

indicator	Indicator Description
pop	Population Size (000's)
bpop	Population Size by Broad Age (000's)
epop	Population Size by Education (000's)
prop	Educational Attainment Distribution
bprop	Educational Attainment Distribution by Broad Age
growth	Average Annual Growth Rate
nirate	Average Annual Rate of Natural Increase
sexratio	Sex Ratio
mage	Population Median Age
tdr	Total Dependency Ratio
ydr	Youth Dependency Ratio
odr	Old-age Dependency Ratio
ryl15	Age When Remaining Life Expectancy is Below 15 years
pryl15	Proportion of Population with a Remaining Life Expectancy below 15 Years
mys	Mean Years of Schooling by Age
bmys	Mean Years of Schooling by Broad Age
ggapmys15	Gender Gap in Mean Years Schooling (15+)
ggapmys25	Gender Gap in Mean Years Schooling (25+)
ggapedu15	Gender Gap in Educational Attainment (15+)
ggapedu25	Gender Gap in Educational Attainment (25+)
tfr	Total Fertility Rate
etfr	Total Fertility Rate by Education
asfr	Age-Specific Fertility Rate
eastfr	Age-Specific Fertility Rate by Education
cbr	Crude Birth Rate

macb	Mean Age at Childbearing
e0	Life Expectancy at Birth
cdr	Crude Death Rate
assr	Age-Specific Survival Ratio
eassr	Age-Specific Survival Ratio by Education
net	Net Migration

See `wic_indicators` data frame for more details.

`scenario` must be set to one or values in the first column table below of the available future scenarios:

scenario	description
1	Rapid Development (SSP1)
2	Medium (SSP2)
3	Stalled Development (SSP3)
21	Medium - Zero Migration (SSP2 - ZM)
22	Medium - Double Migration (SSP2 - DM)

See `wic_scenarios` data frame for more details.

### Value

A [tibble](#) with the data selected.

### Examples

```
# SSP2 tfr for Austria and Bulgaria
get_wcde(indicator = "tfr", country_code = c(40, 100))

# SSP1 and SSP2 life expectancy for Vietnam and United Kingdom (guessing the country codes)
get_wcde(scenario = c(1, 2), indicator = "e0", country_name = c("Vietnam", "UK"))

# SSP1 and SSP3 population by education for all countries
get_wcde(scenario = c(1, 3), indicator = "tfr")
```

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<code>get_wcde_single</code>	<i>Pull multiple vectors for a given indicator, scenarios and .Rdata file names</i>
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### Description

Requires a working internet connection. Intended for internal use.

**Usage**

```
get_wcde_single(indicator = NULL, scenario = 2, country_code = NULL)
```

**Arguments**

**indicator** One character string based on the name column in the wic\_indicators data frame, representing the variable to be interested.

**scenario** Vector with a numbers corresponding the scenarios. See details in wcde for more information.

**country\_code** Vector of length one or more of country numeric codes based on ISO 3 digit numeric values.

**Value**

A tibble with multiple columns.

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past_epop	<i>Past population sizes for all countries by education</i>
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**Description**

A data set containing population sizes for all countries by education between 1950 and 2020

**Usage**

```
past_epop
```

**Format**

A data frame with 840,126 rows and 7 variables, including:

**name** Area name

**country\_code** ISO 3 digit country code

**year** Year of observation from 1950 to 2020 in five-year steps

**age** Five-year age groups

**education** Education group

**sex** Sex

**epop** Population size in thousands for each age, sex and education group

**Source**

<http://dataexplorer.wittgensteincentre.org/wcde-v2/>

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wic_col4	<i>Colours used in Wittgenstein Centre for Demography and Human Capital Data Explorer</i>
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**Description**

Three sets of colours used for filling education based plots based on the different availability of detailed education categories (four, six or eight groups)

**Usage**

wic\_col4

**Format**

A named vector

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wic_col6	<i>Colours used in Wittgenstein Centre for Demography and Human Capital Data Explorer</i>
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**Description**

Three sets of colours used for filling education based plots based on the different availability of detailed education categories (four, six or eight groups)

**Usage**

wic\_col6

**Format**

A named vector



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wic_col8	<i>Colours used in Wittgenstein Centre for Demography and Human Capital Data Explorer</i>
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**Description**

Three sets of colours used for filling education based plots based on the different availability of detailed education categories (four, six or eight groups)

**Usage**

wic\_col8

**Format**

A named vector

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wic_indicators	<i>Indicators used in the Wittgenstein Centre Human Capital Data Explorer</i>
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**Description**

A data set containing the indicator codes, names and further details used in the Wittgenstein Centre Human Capital Data Explorer

**Usage**

wic\_indicators

**Format**

A data frame with 31 rows and 8 variables, including:

**indicator** Short name of indicator to be used in the `indicator` argument of the `get_wcde()` function

**description** Brief description of indicator

**age** Availability of indicator by five-year age groups

**bage** Availability of indicator by broad age groups

**sage** Availability of indicator with a new born age group

**sex** Availability of indicator by sex

**edu** Availability of indicator by education

**period** Indicator is a period (flow)

**past** Availability of past data for indicator

**definition** Full definition for indicator

**Source**

<http://dataexplorer.wittgensteincentre.org/wcde-v2/>

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wic_locations	<i>Locations used in the Wittgenstein Centre Human Capital Data Explorer</i>
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**Description**

A dataset containing the location codes, names and further details used in the Wittgenstein Centre Human Capital Data Explorer

**Usage**

wic\_locations

**Format**

A data frame with 230 rows and 7 variables, including:

**name** Area name  
**isono** ISO 3 digit country code  
**continent** Continent of country  
**region** UN region of country  
**dim** Category or country/region/area

**Source**

<http://dataexplorer.wittgensteincentre.org/wcde-v2/>

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wic_scenarios	<i>Scenarios used in the Wittgenstein Centre Human Capital Data Explorer</i>
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**Description**

A data set containing the scenario codes, names short names used in the Wittgenstein Centre Human Capital Data Explorer

**Usage**

wic\_scenarios

**Format**

A data frame with 5 rows and 3 variables, including:

**scenario\_name** Full scenario name

**scenario** Code to match help file of get\_wcde function

**scenario\_abb** Short scenario name

**Source**

<http://dataexplorer.wittgensteincentre.org/wcde-v2/>

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