Package ‘covid19br’

May 8, 2023

Type Package

Title Brazilian COVID-19 Pandemic Data

Version 0.1.5

Description Set of functions to import COVID-19 pandemic data into R. The Brazilian COVID-19 data, obtained from the official Brazilian repository at <https://covid.saude.gov.br/>, is available at country, region, state, and city levels. The package also downloads the world-level COVID-19 data from the John Hopkins University's repository.

URL https://fndemarqui.github.io/covid19br/

BugReports https://github.com/fndemarqui/covid19br/issues

Encoding UTF-8

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Depends R (>= 3.5.0)

Imports curl, data.table, dplyr, httr, rlang, sf, tidyr

Suggests ggrepel, kableExtra, knitr, leaflet, pracma, plotly, rmarkdown, testthat, tidyverse

LazyData true

RoxygenNote 7.2.3

VignetteBuilder knitr

NeedsCompilation no

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Repository CRAN

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Description

This function adds the incidence, mortality and lethality rates to a given data set downloaded by the `covid19br::downloadCovid19()` function.

Usage

```r
add_epi_rates(data, ...)
```

Arguments

- `data` a data set downloaded using the `covid19br::downloadCovid19()` function.
- `...` further arguments passed to other methods.

Details

The function `add_epi_rates()` was designed to work with the original names of the variables `accumDeaths`, `accumCases` and `pop` available in the data set downloaded by the `covid19br::downloadCovid19()` function. For this reason, this function must be used before any change in such variable names.

Value

the data set with the added incidence, mortality and lethality rates.

Author(s)

Fabio N. Demarqui <fndemarqui@est.ufmg.br>
add_geo

Examples

```r
library(covid19br)
library(dplyr)

brazil <- downloadCovid19(level = "brazil")
brazil <- add_epi_rates(brazil)
glimpse(brazil)
```

add_geo  

Adding the geometry to the downloaded data for drawing maps

Description

This function adds the necessary geometry for drawing maps to a given data set downloaded by the covid19br::downloadCovid19() function.

Usage

```r
add_geo(data, ...)
```

Arguments

- `data`: a data set downloaded using the covid19br::downloadCovid19() function.
- `...`: further arguments passed to other methods.

Details

The function add_geo() was designed to work with the original names of the variables available in the dataset downloaded by the covid19br::downloadCovid19(). For this reason, this function must be used before any changes in the original names of the variables.

The development human index (DHI) variables (see full description below) are available at city level, and their average are computed for state and region levels.

Data dictionary (Brazilian data):

- region: regions’ names
- state: states’ names.
- city: cities’ names.
- DHI: development human index.
- EDHI: educational development human index.
- LDHI: longevity development human index.
- IDHI: income development human index.
add_geo

- region_code: numerical code attributed to regions
- state_code: numerical code attributed to states
- mesoregion_code: numerical code attributed to mesoregions
- microregion_code: numerical code attributed to microregions
- city_code: numerical code attributed to cities
- geometry: georeferenced data needed to plot maps.
- area: area (in Km^2)
- demoDens: demographic density.

Data dictionary (world data):

- country: country’s name
- continent: continent’s name
- region: regions’ names
- subregion: subregion’s name
- pop: estimated population
- pais: country’s name in Portuguese
- country_code: numerical code attributed to countries
- continent_code: numerical code attributed to continents
- region_code: numerical code attributed to regions
- subregion_code: numerical code attributed to subregions
- geometry: georeferenced data needed to plot maps.

Value

the data set with the added georeferenced data.

Author(s)

Fabio N. Demarqui <fndemarqui@est.ufmg.br>

Source

- World map: https://CRAN.R-project.org/package=rnaturalearthdata
- Shapefiles for Brazilian maps: https://www.ibge.gov.br/geociencias/downloads-geociencias.html
- Brazilian DHI data: https://www.ipea.gov.br/ipeageo/bases.html
covid19br

Examples

```r
library(covid19br)
library(dplyr)

regions <- downloadCovid19(level = "regions")
regions_geo <- add_geo(regions)
glimpse(regions_geo)
```

covid19br

**Brazilian COVID-19 Pandemic Data.**

Description

The package provides a function to automatically import Brazilian COVID-19 pandemic data into R. Brazilian data is available on the country, region, state, and city levels, and are obtained from the official Brazilian repository at <https://covid.saude.gov.br/>. The package also downloads the world-level COVID-19 data from the John Hopkins University’s repository at <https://github.com/CSSEGISandData/COVID-19>.

Author(s)

Fábio N. Demarqui, Cristiano C. Santos, and Matheus B. Costa.

downloadCovid19

**Function to download COVID-19 data from web repositories**

Description

This function downloads the pandemic COVID-19 data at Brazil and World levels. Brazilian data is available at national, region, state, and city levels, whereas the world data are available at the country level.

Usage

```r
downloadCovid19(level = c("brazil", "regions", "states", "cities", "world"))
```

Arguments

- `level` the desired level of data aggregation: "brazil" (default), "regions", "states", "cities", and "world".
Details

Data dictionary (variables common to Brazilian and world data):

- date: date of data registry
- epi_week: epidemiological week
- pop: estimated population
- accumCases: accumulative number of confirmed cases
- newCases: daily count of new confirmed cases
- accumDeaths: accumulative number of deaths
- newDeaths: daily count of new deaths
- newRecovered: daily count of new recovered patients

Data dictionary (variables in the Brazilian data):

- region: regions’ names
- state: states’ names.
- city: cities’ names.
- state_code: numerical code attributed to states
- city_code: numerical code attributed to cities
- healthRegion_code: health region code
- healthRegion: health region name
- newFollowup: daily count of new patients under follow up
- metro_area: indicator variable for city localized in a metropolitan area
- capital: indicator variable for capital of Brazilian states

Data dictionary (variables in the world data):

- country: countries’ names
- accumRecovered: accumulative number of recovered patients

Value

a tibble containing the downloaded data at the specified level.

Examples

library(covid19br)

# Downloading Brazilian COVID-19 data:
brazil <- downloadCovid19(level = "brazil")
regions <- downloadCovid19(level = "regions")
states <- downloadCovid19(level = "states")
cities <- downloadCovid19(level = "cities")

# Downloading world COVID-19 data:
world <- downloadCovid19(level = "world")
Description

Dataset containing the results of the 2018 presidential election in Brazil.

Format

A data frame with 5570 rows and 6 variables:

- region: regions’ names
- state: states’ names.
- city: cities’ names.
- region_code: numerical code attributed to regions
- state_code: numerical code attributed to states
- mesoregion_code: numerical code attributed to mesoregions
- microregion_code: numerical code attributed to microregions
- city_code: numerical code attributed to cities
- Bolsonaro: count of votes obtained by the President-elected Jair Bolsonaro.
- Haddad: count of votes obtained by the defeated candidate Fernando Haddad.

Author(s)

Fabio N. Demarqui <fndemarqui@est.ufmg.br>

Source

Tribunal Superior Eleitoral (TSE). URL: https://www.tse.jus.br/eleicoes/estatisticas.
**Format**

A data frame with 5 rows and 4 variables:

- region: regions’ names.
- Bolsonaro: count of votes obtained by the President-elected Jair Bolsonaro.
- Haddad: count of votes obtained by the defeated candidate Fernando Haddad.

**Author(s)**

Fabio N. Demarqui <fndemarqui@est.ufmg.br>

**Source**

Tribunal Superior Eleitoral (TSE). URL: https://www.tse.jus.br/eleicoes/estatisticas.

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**Description**

Dataset containing the results of the 2018 presidential election in Brazil.

**Format**

A data frame with 27 rows and 5 variables:

- region: regions’ names.
- state: states’ names.
- Bolsonaro: count of votes obtained by the President-elected Jair Bolsonaro.
- Haddad: count of votes obtained by the defeated candidate Fernando Haddad.

**Author(s)**

Fabio N. Demarqui <fndemarqui@est.ufmg.br>

**Source**

Tribunal Superior Eleitoral (TSE). URL: https://www.tse.jus.br/eleicoes/estatisticas.
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