

Package ‘genderstat’

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Type Package

Title Quantitative Analysis Tools for Gender Studies

Version 0.1.3

Description Provides tools for quantitative analysis in gender studies, including functions to calculate various gender inequality metrics such as the Gender Pay Gap, Gender Inequality Index (GII), Gender Development Index (GDI), and Gender Empowerment Measure (GEM). Also includes extracted real datasets for practice and learning purposes, which were obtained from the UNDP Human Development Reports Data Center <<https://hdr.undp.org/data-center/documentation-and-downloads>> and the World Bank Gender Data Portal <<https://genderdata.worldbank.org/indicators/>>. References: Miller, Kevin; Vagins, Deborah J. (2021) <<https://eric.ed.gov/?id=ED596219>>. Jacques Charmes & Saskia Wieringa (2003) <[doi:10.1080/1464988032000125773](https://doi.org/10.1080/1464988032000125773)>. Gaëlle Ferrant (2010) <<https://shs.hal.science/halshs-00462463/>>.

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Author S M Mashrur Arafin Ayon [aut, cre]
(<<https://orcid.org/0000-0002-3659-2891>>)

Maintainer S M Mashrur Arafin Ayon <mashrur399@gmail.com>

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gender_development_index
Gender Development Index (GDI)

Description

Computes the Gender Development Index (GDI) based on the given dataset.

Usage

```
gender_development_index(data)
```

Arguments

data A data frame containing the required metrics for GDI computation.

Value

A numeric vector representing the GDI values.

Examples

```
data(real_data_GDI) # Load example dataset
gdi_results <- gender_development_index(real_data_GDI)
print(gdi_results)
```

```
gender_empowerment_measure
      Gender Empowerment Measure (GEM)
```

Description

Computes the Gender Empowerment Measure (GEM) based on the provided dataset.

Usage

```
gender_empowerment_measure(data)
```

Arguments

`data` A data frame containing the required metrics for GEM computation.

Value

A numeric vector representing the GEM values.

Examples

```
data(real_data_GEM) # Load example dataset
gem_results <- gender_empowerment_measure(real_data_GEM)
print(gem_results)
```

```
gender_inequality_index
      Gender Inequality Index (GII)
```

Description

Computes the Gender Inequality Index (GII) based on the provided dataset.

Usage

```
gender_inequality_index(data)
```

Arguments

`data` A data frame containing the required metrics for GII computation.

Value

A numeric vector representing the GII values.

Examples

```
data(real_data_GII) # Load example dataset
gii_results <- gender_inequality_index(real_data_GII)
print(gii_results)
```

<code>gender_pay_gap</code>	<i>Gender Pay Gap (GPG)</i>
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Description

Computes the Gender Pay Gap (GPG) based on the provided dataset.

Usage

```
gender_pay_gap(data)
```

Arguments

`data` A data frame containing the required metrics for GPG computation.

Value

A numeric vector representing the GPG values.

Examples

```
data(real_data_GPG) # Load example dataset
gpg_results <- gender_pay_gap(real_data_GPG)
print(gpg_results)
```

`plot_gdi`*Plot Gender Development Index (GDI) for Bottom 15 Countries*

Description

Plot Gender Development Index (GDI) for Bottom 15 Countries

Usage

```
plot_gdi(data)
```

Arguments

`data` A data frame containing the required metrics for GDI computation.

Value

A ggplot2 object visualizing the GDI for the bottom 15 countries.

Examples

```
data(real_data_GDI) # Load example dataset
plot_gdi(real_data_GDI)
```

`plot_gem`*Plot Gender Empowerment Measure (GEM) for 15 Countries*

Description

Visualizes the Gender Empowerment Measure (GEM) along with other metrics such as female parliament seats, female professional positions, and female to male earned income ratio for 15 countries based on GEM.

Usage

```
plot_gem(data)
```

Arguments

`data` A data frame containing the required metrics for GEM visualization.

Value

A ggplot object representing the bar chart of the GEM and other metrics.

Examples

```
data(real_data_GEM) # Load example dataset
plot_gem(real_data_GEM)
```

plot_gii	<i>Plot Gender Inequality Index (GII) for Bottom 15 Countries</i>
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Description

Plot Gender Inequality Index (GII) for Bottom 15 Countries

Usage

```
plot_gii(data)
```

Arguments

data A data frame containing the required metrics for GII computation.

Value

A ggplot2 object visualizing the GII for the bottom 15 countries.

Examples

```
data(real_data_GII) # Load example dataset
plot_gii(real_data_GII)
```

plot_gii_education	<i>Plot Secondary Education Participation for Bottom 15 Countries by Gender</i>
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Description

Plot Secondary Education Participation for Bottom 15 Countries by Gender

Usage

```
plot_gii_education(data)
```

Arguments

data A data frame containing the required metrics for GII computation.

Value

A ggplot2 object visualizing the secondary education participation for males and females in the bottom 15 countries.

Examples

```
data(real_data_GII) # Load example dataset
plot_gii_education(real_data_GII)
```

plot_gii_empowerment *Plot Female Parliament Seats for Bottom 15 Countries*

Description

Plot Female Parliament Seats for Bottom 15 Countries

Usage

```
plot_gii_empowerment(data)
```

Arguments

data A data frame containing the required metrics for GII computation.

Value

A ggplot2 object visualizing female parliament seats for the bottom 15 countries.

Examples

```
data(real_data_GII) # Load example dataset
plot_gii_empowerment(real_data_GII)
```

plot_gii_health *Plot Health Indicators (Maternal Mortality and Adolescent Birth Rate) for Bottom 15 Countries*

Description

Plot Health Indicators (Maternal Mortality and Adolescent Birth Rate) for Bottom 15 Countries

Usage

```
plot_gii_health(data)
```

Arguments

`data` A data frame containing the required metrics for GII computation.

Value

A ggplot2 object visualizing maternal mortality and adolescent birth rate for the bottom 15 countries.

Examples

```
data(real_data_GII) # Load example dataset
plot_gii_health(real_data_GII)
```

`plot_gii_labor` *Plot Labor Force Participation for Bottom 15 Countries by Gender*

Description

Plot Labor Force Participation for Bottom 15 Countries by Gender

Usage

```
plot_gii_labor(data)
```

Arguments

`data` A data frame containing the required metrics for GII computation.

Value

A ggplot2 object visualizing the labor force participation for males and females in the bottom 15 countries.

Examples

```
data(real_data_GII) # Load example dataset
plot_gii_labor(real_data_GII)
```

`plot_gpg`*Plot Gender Pay Gap for Top 5 Countries*

Description

Visualizes the Gender Pay Gap (GPG) for the top 5 countries based on their GPG.

Usage

```
plot_gpg(data)
```

Arguments

`data` A data frame containing the required metrics for GPG computation.

Value

A ggplot2 object visualizing the GPG for the top 5 countries.

Examples

```
data(real_data_GPG) # Load example dataset  
plot_gpg(real_data_GPG)
```

`plot_gpg_q1`*Plot Gender Pay Gap for First Quartile Countries*

Description

Visualizes the Gender Pay Gap (GPG) for countries in the top quartile (Q1) based on their GPG.

Usage

```
plot_gpg_q1(data)
```

Arguments

`data` A data frame containing the required metrics for GPG computation.

Value

A ggplot2 object visualizing the GPG for Q1 countries.

Examples

```
data(real_data_GPG) # Load example dataset
plot_gpg_q1(real_data_GPG)
```

`plot_gpg_q2`*Plot Gender Pay Gap for Second Quartile Countries*

Description

Visualizes the Gender Pay Gap (GPG) for countries in the second quartile (Q2) based on their GPG.

Usage

```
plot_gpg_q2(data)
```

Arguments

`data` A data frame containing the required metrics for GPG computation.

Value

A ggplot2 object visualizing the GPG for Q2 countries.

Examples

```
data(real_data_GPG) # Load example dataset
plot_gpg_q2(real_data_GPG)
```

`plot_gpg_q3`*Plot Gender Pay Gap for Third Quartile Countries*

Description

Visualizes the Gender Pay Gap (GPG) for countries in the third quartile (Q3) based on their GPG.

Usage

```
plot_gpg_q3(data)
```

Arguments

`data` A data frame containing the required metrics for GPG computation.

Value

A ggplot2 object visualizing the GPG for Q3 countries.

Examples

```
data(real_data_GPG) # Load example dataset
plot_gpg_q3(real_data_GPG)
```

plot_gpg_q4

Plot Gender Pay Gap for Fourth Quartile Countries

Description

Visualizes the Gender Pay Gap (GPG) for countries in the fourth quartile (Q4) based on their GPG.

Usage

```
plot_gpg_q4(data)
```

Arguments

`data` A data frame containing the required metrics for GPG computation.

Value

A ggplot2 object visualizing the GPG for Q4 countries.

Examples

```
data(real_data_GPG) # Load example dataset
plot_gpg_q4(real_data_GPG)
```

plot_hdi

Plot Human Development Index (HDI) for Bottom 15 Countries by Gender

Description

Plot Human Development Index (HDI) for Bottom 15 Countries by Gender

Usage

```
plot_hdi(data)
```

Arguments

data A data frame containing the required metrics for GDI and HDI computation.

Value

A ggplot2 object visualizing the HDI for males and females in the bottom 15 countries.

Examples

```
data(real_data_GDI) # Load example dataset
plot_hdi(real_data_GDI)
```

real_data_GDI	<i>Original Data of GDI (GDI)</i>
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Description

A dataset containing observed values for the GDI analysis.

Usage

```
data(real_data_GDI)
```

Format

A data frame with 191 rows and 7 columns:

country A character vector representing the name of the country.

female_life_expectancy A numeric vector representing the life expectancy of females in the respective country. Measured in years.

male_life_expectancy A numeric vector representing the life expectancy of males in the respective country. Measured in years.

female_mean_schooling A numeric vector representing the average number of schooling years for females in the respective country.

male_mean_schooling A numeric vector representing the average number of schooling years for males in the respective country.

female_gni_per_capita A numeric vector representing the Gross National Income per capita for females in the respective country. Measured in international dollars.

male_gni_per_capita A numeric vector representing the Gross National Income per capita for males in the respective country. Measured in international dollars.

Source

Data obtained from the following sources:

- [UNDP Human Development Reports Data Center](#)
- [World Bank Gender Data Portal](#)

`real_data_GEM`*Original Data for Gender Empowerment Measure (GEM)*

Description

A dataset containing observed values for the GEM analysis.

Usage

```
data(real_data_GEM)
```

Format

A data frame with 191 rows and 4 columns:

country A character vector representing the name of the country.

female_parliament_seats A numeric vector representing the ratio of parliamentary seats occupied by females in the respective country. Measured as a proportion (0-1).

female_professional_positions A numeric vector representing the ratio of professional and technical job roles occupied by females in the respective country. Measured as a proportion (0-1).

female_to_male_earned_income_ratio A numeric vector representing the income ratio for females in the respective country in comparison to males. Measured as a proportion (0-1), where 1 indicates equal income with males.

Source

Data obtained from the following sources:

- [UNDP Human Development Reports Data Center](#)
- [World Bank Gender Data Portal](#)

`real_data_GII`*Original Data for Gender Inequality Index (GII)*

Description

A dataset containing observed values for the GII analysis.

Usage

```
data(real_data_GII)
```

Format

A data frame with 191 rows and 8 columns:

country A character vector representing the name of the country.

maternal_mortality_ratio Maternal Mortality Ratio.

adolescent_birth_rate Adolescent Birth rate.

female_parliament_seats Female Parliament Seats.

female_secondary_education Female Secondary Education.

male_secondary_education Male Secondary Education.

female_labor_force Participation of female in labour force.

male_labor_force Participation of male in labour force.

Source

Data obtained from the following sources:

- [UNDP Human Development Reports Data Center](#)
- [World Bank Gender Data Portal](#)

real_data_GPG

Original Data for Gender Pay Gap (GPG)

Description

A dataset containing observed values for the GPG analysis.

Usage

```
data(real_data_GPG)
```

Format

A data frame with 191 rows and 3 columns:

country Name of Country

female_income Per capita female National Income

male_income Per capita male National Income

Source

Data obtained from the following sources:

- [UNDP Human Development Reports Data Center](#)
- [World Bank Gender Data Portal](#)

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